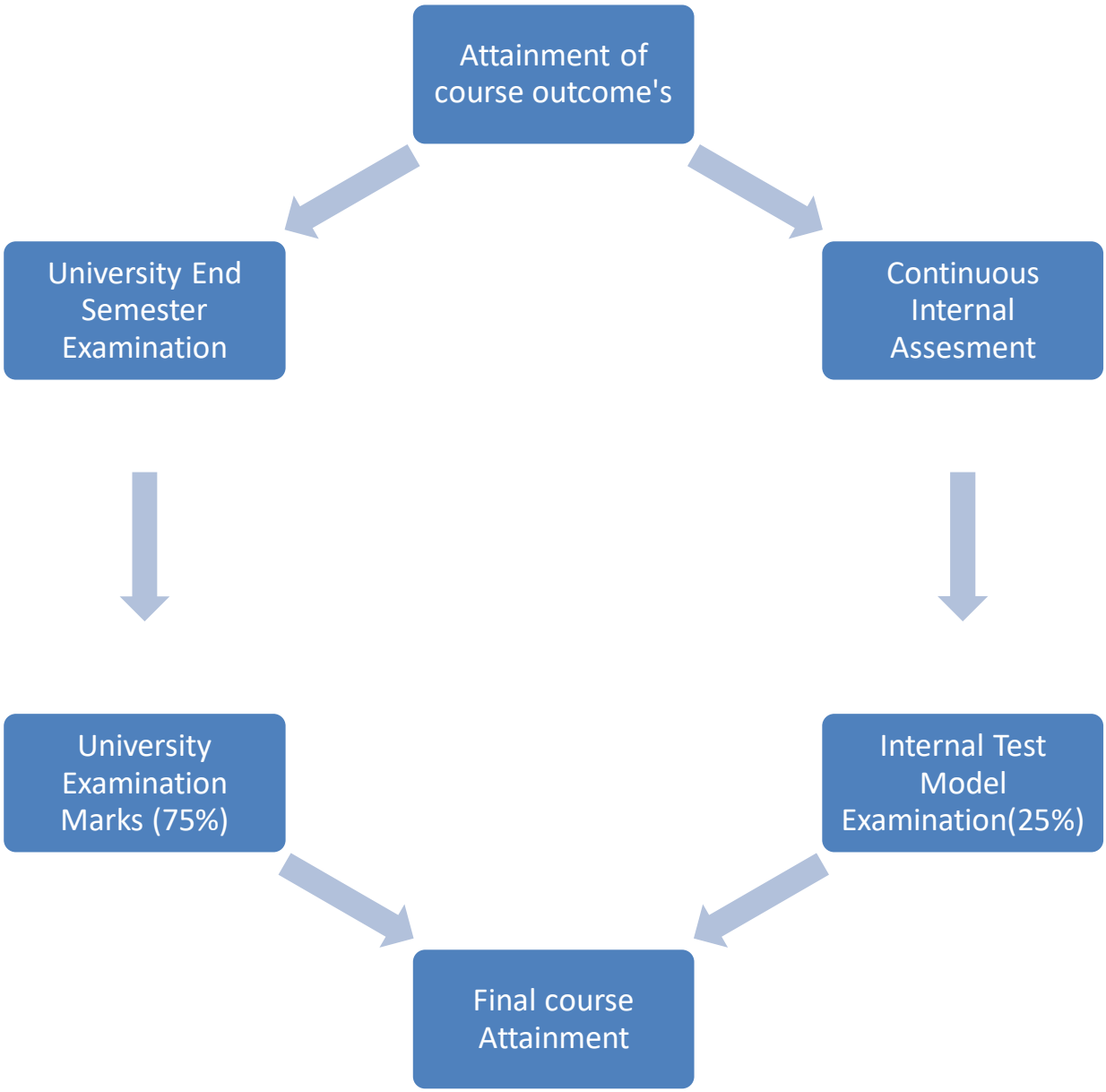
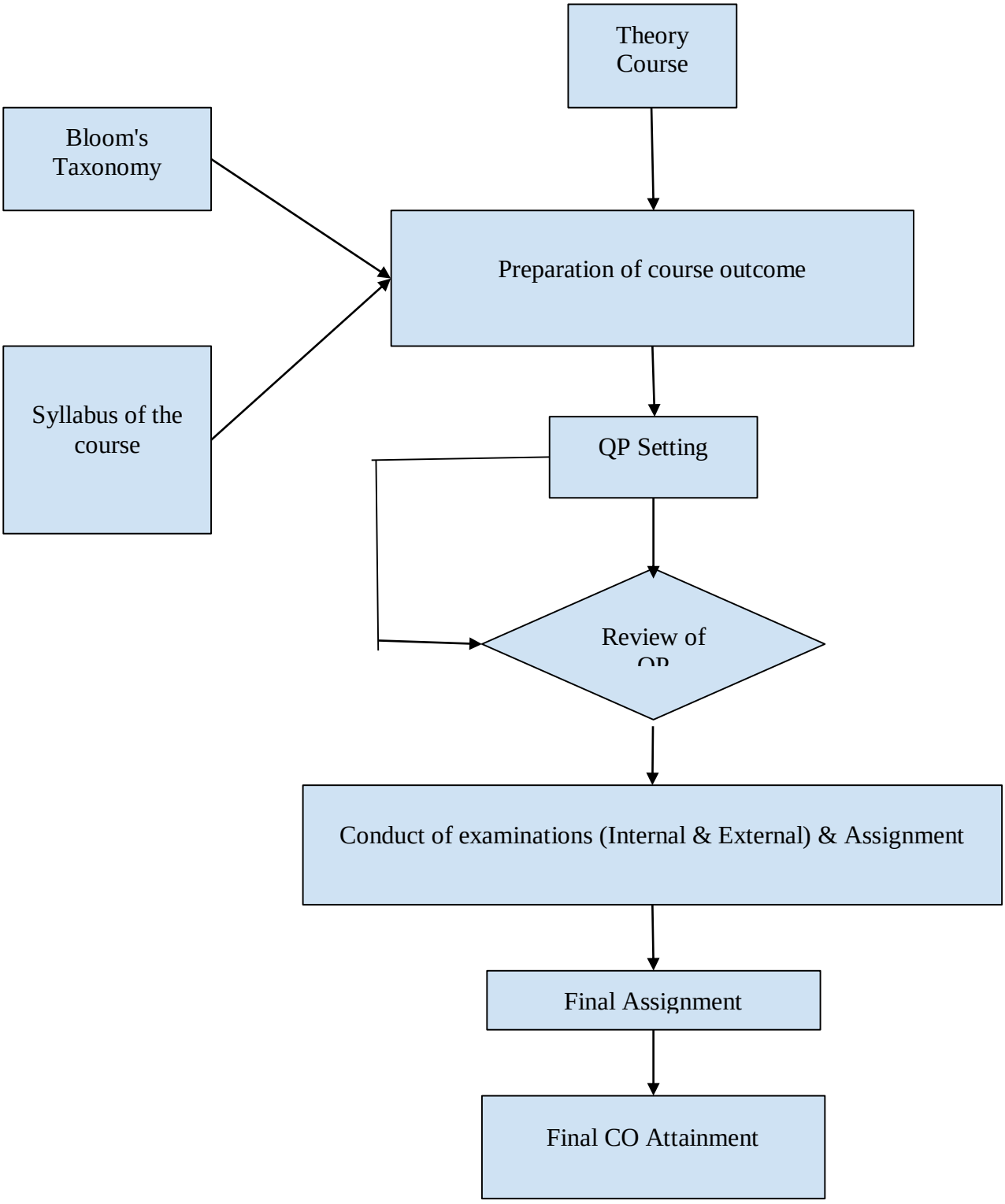
TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

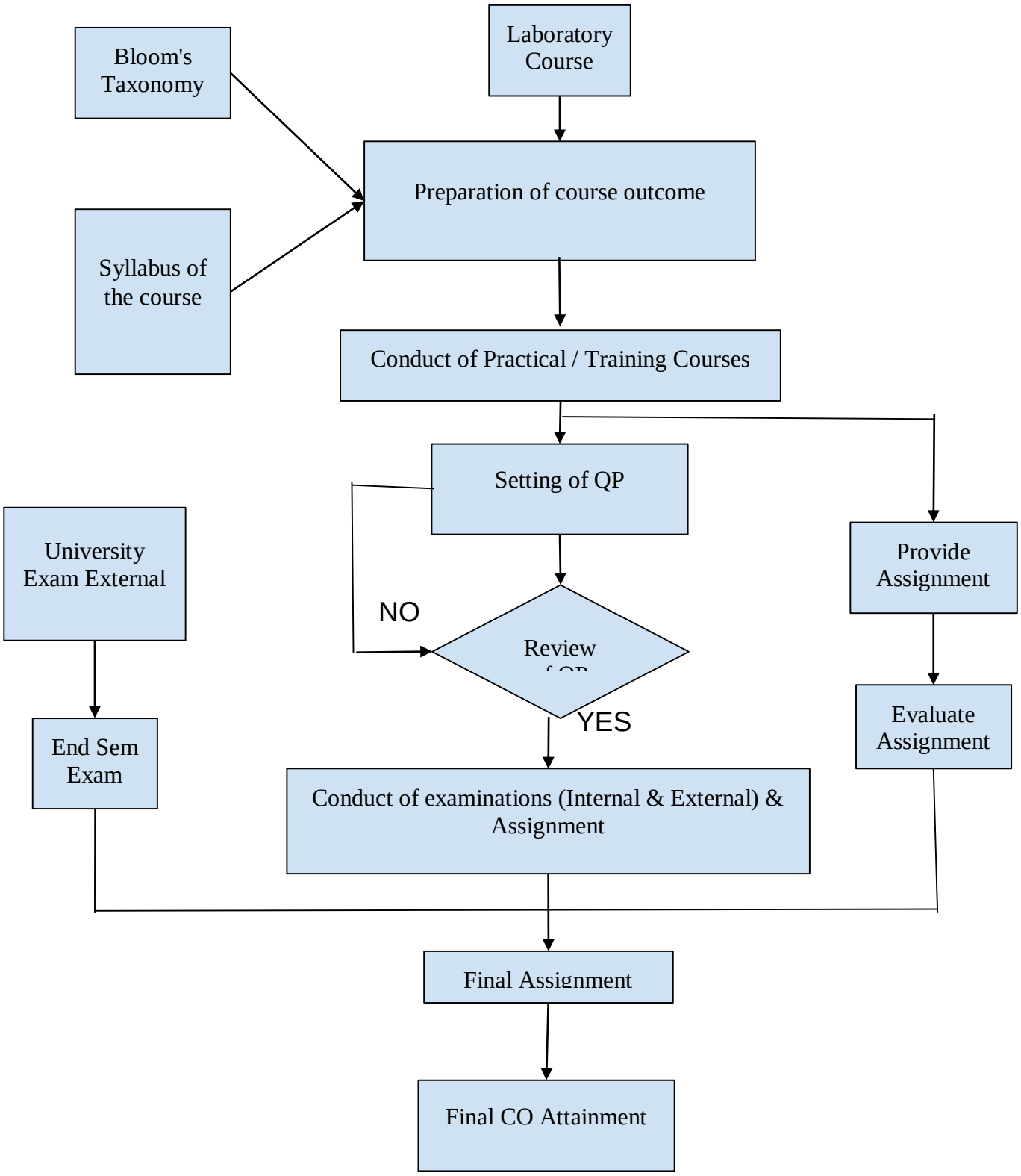
FLOW CHART FOR ATTAINMENT OF COURSE OUTCOME'S



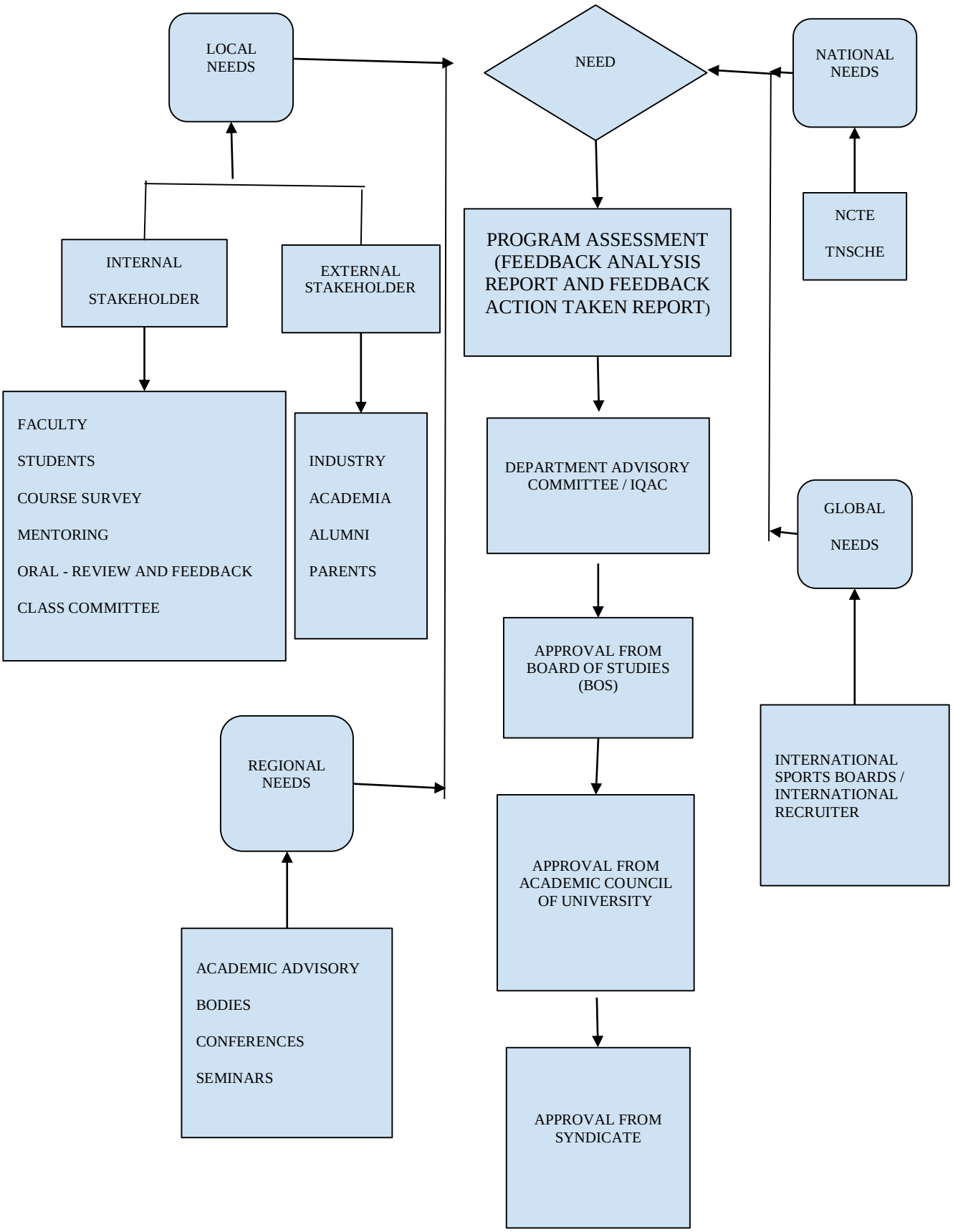
FLOW CHART OF ATTAINMENT OF THEORY COURSE



FLOW CHART OF ATTAINMENT OF LABORATORY COURSE



CURRICULUM DESIGN PROCESS





TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

DEPARTMENT OF PHYSICAL EDUCATION

SYLLABUS, COURSE OUTCOMES AND MAPPING (CO's and PO's)

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

DEPARTMENT OF PHYSICAL EDUCATION

B.P.ED DEGREE PROGRAMME

BACHELOR OF PHYSICAL EDUCATION (B.P.Ed)

PROGRAM EDUCATIONAL OUTCOMES (PEOS)

PEO-1) The Bachelor of Physical Education(B.P.Ed.) Progremme is a professional Programme meant for preparing physical education teacher for high school (classes I to X) level.

PEO-2) The curriculum and syllabus have been structured in such a way that each of the course meets one or more of the outcomes related to the skills, knowledge, and behaviors that students acquire as they progress through the program. Further, each course in the program spells out clear instructional objectives which are mapped to the student outcomes.

PROGRAMME OUTCOMES

PO-1) Domain knowledge: Apply the knowledge of basic sciences that may be relevant and appropriate to physical education and sports sciences leading to solution of complex sports related issues and problems.

PO-2) Problem analysis: Ability to Identify, define the actual requirements, formulate, research literature, and analyze complex physical education and sports sciences related problems to reaching substantiated conclusions.

PO-3) Design/Development of Solutions: Ability to design, implement, and evaluate process or program to meet desired needs in the field of physical education and sport sciences.

PO-4) Individual and team work: Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings to accomplish a common goal.

PO-5) Ethics: Understanding of professional, ethical, legal, security, social issues and responsibilities in teaching, learning and evaluation.

PO-6) Communication: Ability to communicate effectively among a range of audiences/ stakeholders

PO-7) Impact: Ability to analyze the local and global impact of physical activities and sports and games on individuals, organizations and society.

PO-8) Professional Development: Recognition of the need for and an ability to engage in continuing professional development.

PO-9) Identification of Needs: Ability to identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of physical education and sport sciences programs.

PO-10) Integration: Ability to incorporate effectively integrate Science/Technology/ IT-based solutions to applications

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X	X	X	X	X	X	X	X	X	X
PE0-2	X			X	X			X	X	X

B15101	**HISTORY, PRINCIPLES AND FOUNDATIONS OF PHYSICAL EDUCATION** **Instruction : 4 Hours / Week** **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS** **UNIT I** Meaning and Definition of Education, Physical Education, Physical Training and Physical culture. Aims and Objectives of Physical Education. Role of Physical Education in General Education. Theories of Play. Development of Teacher Education in Physical Education. Professional Courses in Physical Education and Sports. **UNIT II** Physical Education in India: Pre Independence period :Vedic age, Epic age, Muslim period, British period. Contributions of YMCA College of Physical Education. Physical Education in Ancient Greece(Sparta – Athens). Physical Education in Rome, Germany, Sweden, Denmark and Russia. Origin and Developments of: Ancient Olympic Games - Modern Olympic Games – Asian Games – Common Wealth Games. National Sports Day. **UNIT III** Post Independence period: All India Council of Sports - National Discipline Scheme – NCC – NSO - NSS - Scouts and Guides - Sports Authority of India - Sports Development Authority of Tamil Nadu - School Games Federation of India - Association of Indian Universities - Indian Olympic Association. RDG-BDG-RDS. Awards: Arjuna award - Dronacharya award - Rajiv Gandhi Khel Rathna award. **UNIT IV** Biological Foundations: Biological foundations of physical education - Hereditary traits - Muscle tone -Athletic heart- Unsynchronised development - Reciprocal innervations-Reflex arc - Vital capacity. Growth and Development at various Levels of Childhood: Pre - Adolescence – Adolescence – Adulthood. Differences in boys and girls. Chronological Age-Physiological Age and Mental Age. Classification of body types: Sheldon – Krestchmer. **UNIT V** Learning: Meaning and Definition – Theories of Learning :Trial and Error theory, Conditioned Response theory, Insightful Learning. Laws of Learning: Law of readiness, Law of use and disuse, Law of effect, Law of Recency, Law of Frequency. Types of Learning : Primary, Associate, Concomitant; Transfer of Learning – Learning Curve .

Text Book

1. Baljit Singh (2009). Principles of Physical Education. New Delhi: Sports Publication.
2. Bevinson Perinbaraj. S (2002). History of Physical Education. Karaikudi: Vinsi Publications. Bucher A.
3. Charles. (1983). Foundations of Physical Education. St. Louis:Mosbyco.
4. Charles A. Bucher. (1982). Foundations of Physical Education. USA: The C.V. Mosby company.
5. Charles C. Cowell & William L. France.(1963). Philosophy and Principles of Physical Education. New Jersey: Prentice-Hall.

2. **COURSE OUTCOME students are able to**

CO-1	Know the origin and development of Physical Education
CO-2	Apply the knowledge of Olympism in organizing various sport activities
CO-3	Distinguish the functional operations on National and International Olympic Federations.
CO-4	Analyze the concepts and issues pertaining to Physical Education.
CO-5	Formulate the principles, philosophy and concepts about Physical Education

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		2	1	1		2	3		
2	2			3		2	1		1	
3	3		1		2		1		2	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2		
3	2	3

B15102	**ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION**
	Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS**

UNIT I

Meaning and Definition of Anatomy and Physiology. Cell: Structure and functions of Cell- Tissues-Organs. Skeletal System: Structure and functions of Skeletal System. Axial and Appendicular Skelton Joints: Definition - Classification of Joints, Types of Muscles.

UNIT II

Cardio Respiratory System: Structure and Functions of Heart. Functions of Blood - Composition of Blood - Blood groups - Blood clotting. Cardiac Cycle, Types of Blood circulation. Respiratory System: Respiratory Passage, Structure and functions of Lungs, Exchange of Gases - Mechanism of respiration. Assessing and measuring Vital signs: Heart rate – Temperature – Respiratory rate – blood pressure.

UNIT III

Digestive System: Structure and functions of Tongue, Teeth, salivary glands, Stomach, Small and Large Intestine, liver, gall-bladder and pancreas. Excretory system: Kidney, Parts of the urinary system - Urine-Normal contents, normal urine formation with basic structure of nephron, Structure and functions of Skin. Endocrine system: Location and functions of Endocrine glands- Pituitary, Thyroid, Parathyroid, Adrenalin and Sex glands.

UNIT IV

Nervous System: Structure and functions of Neuron. Structure and functions of brain – Cerebrum – Cerebellum - Medulla oblongata – Spinal cord-Reflex action – Motor end Plates. Types of nervous system: Central, Autonomous, Sympathetic and Parasympathetic Nervous Systems. Structure and functions of Eye and Ear.

UNIT V

Health Education: Meaning and Definition – Factors influencing Health: Heredity and Environment. Infection, Immunity and Immunization – Public health measures to combat infection. Common communicable Diseases: Definition – Causes, Symptoms, Mode of Transmission and Prevention : Malaria – Filaria – Typhoid – Cholera - Measles - Mumps - Whooping Cough - Chicken Pox – Dysentery - Dengu - AIDS. Personal Hygiene – School health Programme – Health Instruction – Health Services – Health Supervision.

Text Book

1. Babsky. E., & Khodorov, B. (1970). Human Physiology. Moacow: MIR Publications. Chatterjee.,& Chandicharan. (1980). Human Physiology. Calcutta: Medical Allied Agency.
2. Chaurasia, B. D. (1995). Human Anatomy. Delhi: CBS publishers.
3. Evelyn, C. Pearce. (1993). Anatomy and Physiology for Nurses. New Delhi: Jay Pee Brothers.
4. Ram Mohun Mojumdar. (2009). Anatomy and Physiology. New Delhi: Sports Publication.
5. Ranganathan. T.S. (1983). A Textbook of Human Anatomy. New Delhi: S Chand and Company..

2. **COURSE OUTCOME students are able to**

CO-1	Understand the basic principles of Anatomy, Physiology and Health Education
CO-2	Apply the knowledge in the field of physical education and movement activity.
CO-3	Analyze the practical knowledge during the practical situation.
CO-4	Remember and recall the definition of anatomy and physiology and co-relate the principles of physiology.
CO-5	Appraise the effects of health condition during the training and practical sessions

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1	1				3	2	1
2	1						2	3		
3	2		3					1	2	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2	1	2
3		

B15103	**YOGA EDUCATION** **Instruction : 4 Hours / Week** **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS** **UNIT I** Yoga: Meaning and Definition. Origin and History – Yoga Sutra – Hatha yoga texts. Systems of Yoga: Karma yoga - Jnana yoga - Bhakthi yoga - Raja yoga. Eight limbs of yoga: Yama – Niyama – Asana – Pranayama – Pratyahara – Dharana – Dhyana – Samadhi. International Yoga Day – Yogic Diet. **UNIT II** Schools of yoga - Effect of yoga on various systems of the body: Muscular system – Circulatory system – Endocrine system – Respiratory system – Nervous system – Digestive system – Yoga for Physical Fitness, Yoga for Health and Wellness. Yoga for Diseases. **UNIT III** Loosening the joints - Suryanamaskar (Bihar school of yoga). Meaning of Asana – Classification – Guidelines for practicing asanas, Do's and Don'ts - differences between asanas and physical exercises - Techniques and benefits. Standing Asana: Vrkshasana – Trikonasana – Padhahastasana. Seated Asanas: Siddhasana – Padmasana – Paschimottanasana. Inverted asanas: Sarvangasana – Halasana. Prone position: Mayurasana – Sirsasanana. Back bend asanas: Bujangasana, Salabhasana, Dhanurasana, Ushtrasana. Supine position: Navasana, Suptavajrasana, Twisting: Vakrasana, Ardhamatsyendrasana, Kukutasana. **UNIT IV** Pranayama: Definition, Types and Benefits: Nadi Shodhana, Surya Bhedana, Chandra bhedana, Kapalabhati, Bhastrika, Sitakari, Sitali, Bhramari – Ujjai. Nadi: Ida, Pingala, Sushumna. **UNIT V** Techniques and Benefits of Shat kriyas: Neti (Jala, Sutra) Dhauti (Vamana, vastra) Bhasti, Nauli, Trataka, Kapalabhati, Yoga Nidra. Meditation: Meaning and b

Bandhas and Mudras : Meaning and benefits.

Text Book

1. George Feuerstein. (1975).Text Book of Yoga. London: Motilal Bansaridass Publishers (P) Ltd.
2. Gore. (1990). Anatomy and Physiology of Yogac Practices. Lonavala: Kanchan Prkashan.
3. Iyengar, B. K. S. (2000). Light on Yoga. New Delhi: Harper Collins Publishers.
4. Moorthy .A.M & Alagesan. S. (2004).Yoga Therapy. Coimbatore: Teachers Publication House.
5. Swami Satyananda Saraswathi. (1984). Kundalini and Tantra. Bihar: Yoga Publications Trust.
6. Swami Kuvalayananda. (1998). Asanas. Lonavla: Kaivalyadhama. Publication.

2. **COURSE OUTCOME students are able to**

CO-1	Understand the basic Concepts of Yoga
CO-2	Apply the principles of Yoga to live healthy and active life style.
CO-3	Promote the awareness of health through yoga
CO-4	Analyze the techniques and of body posture to bring out healthy change.
CO-5	Able to execute loosening exercise , Asanas, Pranayama and Shatkriyas.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3	1	3	1		1	2	3	2	1
2	1		2	3			1	3	2	
3	1		1	2	1	2		2		2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2		
3	1	2

	SPORTS TRAINING
B15201	**Instruction : 4 Hours / Week** **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS** **UNIT I** Sports Training: Meaning, Definition, Characteristics and Principles – Training Load: External and Internal Load - Principles of Training Load – Overload: Symptoms and Tackling – Periodization : Types, Aims and Content of Various Periods – Preparatory, Competition and Transition – Plan : Short term and Long term **UNIT II** Warming Up: Definition – Types – Importance of Warming Up – Types of Sports Training and their Purpose: Weight Training (Free Weight and Machine Weights) – Circuit Training – Interval Training – Plyometric Training - Fartlek Training – Swiss Ball Training – Medicine Ball Training – Cross Training. **UNIT III** Strength - Definition of strength - Types of Strength: Maximum strength, explosive strength, strength endurance, general strength, specific strength, relative strength. Importance of strength- Factors determining strength- Training method for strength improvement - Loading procedure for strength training. **UNIT IV** Speed - Definition of speed - Forms of speed, reaction speed, movement speed, acceleration ability, loco-motor ability. Speed endurance - Factors determining speed performance - Training methods for increasing speed. **UNIT V** Endurance: Definition – Types – Importance – Training Methods for improving Endurance – Coordinative Abilities: Definition – Types and Training Methods for Improving Coordinative Abilities – Flexibility : Definition – Types - Methods for Improving Flexibility **Text Book** 1. Arnheim D., & William E Prentice. (1978). Athletic Training. St. Louis: Mosby Year Book. 2. Authors Guide (2014) IAAF Competition Rules 2014-2015, Monaco Cedex: IAAF Publishing . 3. Authors Guide (2002) Rules of Games and Sports, New Delhi : YMCA Publishing House 4. Authors Guide (2000) FIBA Official Basket Rules : Munich. 5. Bonder, J.B (1984). How to be a Successful Coach. New York: Prentice Hall, Inc. 6. Breshahan, Tuttle., & Cretzmeyer. (1997). Track and Field Athletics. New Jersey: Prentice Hall, Inc 7. Hardayal Singh. (2005). Sports Training - General Theory and Methods. Patiala: NSNIS.

2. **COURSE OUTCOME students are able to**

CO-1	Understand training as performance based science
CO-2	Explain different means and methods of various training
CO-3	Prepare training schedule for various sports and games
CO-4	Appraise types of periodization for performance development
CO-5	Create various training facilities and plans for novice to advance performers

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1	2	3				1	2	1	3
2		3	2	1	1	1				
3	1	3	3	2			2		1	3

4 **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2		
3	1	2

B15202	**ORGANIZATION, ADMINISTRATION AND METHODS IN PHYSICAL EDUCATION** **Instruction : 4 Hours / Week** **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS** **UNIT I** Meaning of organization and administration. Importance of organization, administration, Guiding principles of organization. Organisation scheme and physical education in schools, Colleges, Universities, Districts, States. Teaching-load and teacher pupil ratio. Types and preparation of time table: Types of physical education periods, Types of records, registers and reports to be maintained in Physical Education. **UNIT II** Finance and budget: Sources of Income- Approved items of expenditure. Rules for the utilization of games fund or physical education fund. Preparation and administration of budget and accounting. Method: Meaning – Factors influencing method, Presentation techniques: Planning - Presentation – Steps in the way of presentation. Teaching aids – Class management – General – Specific – Principles to be adopted for good class management. Age Characteristics of pupils and selection of activities. **UNIT III** Lesson plan: Values. Types: General, Particular lesson plan and Coaching Lesson Plan. Command : Response Command – Rhythmic Command. Methods of Teaching Physical Activities: Command, Oral, Demonstration, Imitation, Dramatization, At-will, Set-drill, Part, Whole, Whole-Part-Whole methods. **UNIT IV** Tournaments – Meaning-Types. Method of drawing fixtures for knock out/ elimination - league/ Round Robin. Combination Tournament : Knock out – cum – knock out, knock out – cum – league, league – cum – league, league – cum – knock out . Challenge Tournament. Intramural – Extramural; Sports Meet: Standard sports meet – Non-standard sports meet . Play day - Games tour. **UNIT V** Qualities and Qualifications of Physical Education Personnel. Guiding principles of supervision: Qualities and qualification of a supervisor – Concept of techniques of Supervision. Techniques of Supervision: Visitation – Periodical – Surprise – Request- Social, Visitation procedure – Report on the visit – Individual and Group Meeting – Role of primary school teachers towards physical education programme. Functions of DIET / SCERT / NCERT / NCTE / Nehru Yuva Kendra

Text Book

1. Greyson Daughtrey. (1969). Methods in Physical Education and Health for Secondary Schools. London: W. B. Saunders Company.
2. Hughes, LW. and French, E. (1990) The Administration of Physical Education, Ronald Press Co.,
3. Sharad Chandra Mishra. (2009). Methods of Physical Education. New Delhi: Sports Publication.
4. Thirunarayanan, C. & Hariharan, S (1969) Methods in Physical Education Karaikudi: South India press,
5. Thomas, J.P. (1969) Organisation and Administration of Physical Education, Chennai:
6. Williams, C. and Velter, B. (1987) Administration of Health. W.B. Saunders & Co.

2. **COURSE OUTCOME students are able to**

CO-1	Understand the principles and process of Administration and Management
CO-2	Administer physical education and sports programs in schools.
CO-3	Develop appropriate physical education curriculum, tools and budget to manage school programs
CO-4	Appraise and manage physical education facilities and personnel in school
CO-5	Design tournament fixtures and structures to organize competitions

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3	1	1			3		2
2	2	3	1			1	2			
3	1		2				1		2	1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	1	3
3	2	3

B15203	**THEORIES OF SPORTS AND GAMES, COACHING AND OFFICIATING- PART I** **Instruction : 4 Hours / Week** **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS** **UNIT I** History of Athletics: World and India. Marking and Measurements of Non Standard Track (200m). Marking and Measurements of Field Events **UNIT II** Marking and Measurements of Standard Track (400m), Cross Country, Road Running, Ultra Running and Mountain Running **UNIT III** Rules and Interpretation of Track and Field Events – Duties of Officials in Track and Field Events. Methods of arranging Seeding and Heats in Track and Field Events – Score Sheets for Track and Field Events, Combined Events (Triathlon – Pentathlon – Heptathlon - Decathlon) **UNIT IV** World and Indian History, Rules and Interpretation, Marking and Measurements of Play Fields and Standard Equipments for the following games: Basketball, Football, Handball, Volleyball , Cricket and Hockey **UNIT V** Coaching: Meaning and Definition. Teaching, Training and Coaching – Philosophy of Coaching – Qualification and Qualities of a Coach **Text Book** 1. Arnheim, D., & William, E Prentice. (1991). Principles of athletic training. St. Louis: Mosby Year Book. 2. Arnheim D., & William E Prentice. (1978). Athletic Training. St. Louis: Mosby Year Book. 3. Authors Guide (2018) IAAF Competition Rules 2018-2019, Monaco Cedex: IAAF Publishing . 4. Authors Guide (2002) Rules of Games and Sports, New Delhi : YMCA Publishing House. 5. George Immanuel.(1997).Track and Field Event layout and Marking. Chennai: 6. Hardayal Singh. (2005). Sports Training - General Theory and Methods. Patiala: NSNIS. 7. Josse, P, Moprtensen., & John, M,Copper. (1998). Track and Field for Coach and Athlete. St.Louis: C.V.Mosphy Company.

2. **COURSE OUTCOME students are able to**

CO-1	Able to mark Track and Field and Officiate
CO-2	Able to understand the rules of the games and sports
CO-3	Able to give seeding and Heats in Track and Field. Combined Events .
CO-4	Design and practice the new methods of technique of officiating

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1	3						
2				1			3		1	2
3	1		2		1			3		

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2	2	3
3		

B15301	**MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION** **Instruction : 4 Hours / Week** **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS** **UNIT I** Meaning and Definition of Test, Measurement and Evaluation. Need and Importance of Test and Measurement in Physical Education **UNIT II** Criteria and Administration Of test: Criteria of Test: Scientific Authenticity – Reliability, Objectivity, Validity, Availability of Norms, Administrative Feasibility and Education Application. Administration of Test :Duties of Advance Preparation – Duties during testing – Duties after testing **UNIT III** Physical Fitness Test : AAPHERD Health Related Fitness Battery (Revised in 1984) – Roger's Physical Fitness Index. Cardio Vascular Test: Harvard Step Test, 12 Minutes Run /Walk Test, Multi Stage Fitness Test (Beep Test). Motor Fitness: Indiana Motor Fitness Test (for elementary and high school boys, girls and college men), JCR Test. SDAT World Beaters Battery Test for High School Boys and Girls. **UNIT IV** Sports Skill Test: Badminton: Miller Wall Volley Test – French Short Service Test, Basketball: Johnson Basketball Test – Leilich Basketball Test, Hockey: Firedal Field Hockey Test, Schimithal French Field Hockey Test. **UNIT V** Sports Skill Test: Football: Johnson Soccer Test – McDonald Soccer Test. Tennis: Dyer Tennis Test, Volleyball: Brady Volleyball Test – Rusel Lange Volleyball Test **Text Book** 1. Barrow, H.M.. and McGee, R.,A (1964.) Practical Approach to Measurement in Physical Education, Lea and Febiger, Philadelphia. 2. Bovard, J.F., Cozens, F., W. and Hagman, P.E.(1949)Test and Measurements in Physical Education, W.B. Sunders Company, Philadelphia. 3. Hunsicker, P.A. and Montoye, H.J. (1953) Applied Test and Measurements in

Physical Education, Prentice Hall Inc., New York.
4. Leger (1983), Testing Physical Fitness, Eurofit Experimental Battery Provisional Handbook, Strasbourg: UK
5. Meyers, C.R. and Belsh, E.T. (1962) Measurement in physical Education, The Ronald press Company. New York. sports, New Delhi: Friends Publications.
6. Wilgoose, C.E (1967) Evaluation in Health Education and physical Education, McGraw Hill Book Company, Inc, New York.
7. Yobu,A (2010), Test, Measurement and Evaluation in Physical Education Friends Publication, New Delhi .

2. **COURSE OUTCOME students are able to**

CO-1	Understand the basics of Test, Measurement and Evaluation in physical education, Health and Fitness.
CO-2	Know about the different types of test for different sports and games.
CO-3	Apply the tests in minor research areas
CO-4	Analyze the performance and movements in the field of sports.
CO-5	Evaluate the battery test and others tests prescribed by the government efficiently

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3		1				1	3	2	
2	2	1		2			3	1		
3		2	3			1			2	3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2		
3	1	3

B15302	**RESEARCH AND STATISTICS IN PHYSICAL EDUCATION** **Instruction : 4 Hours / Week** **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS** **UNIT I** Meaning and Definition of Research - Need, Nature and Scope of research in Physical Education. Classification of Research: Basic Research, Applied Research, Action Research. Location of Research Problem - Criteria for selection of a problem. Qualities of a good researcher. **UNIT II** Meaning and Definition of Hypothesis. Formulation of Hypothesis. Experimental Methods of Research: Meaning of variable - Types of Variables - Meaning and Nature of experimental Research. Types of Experimental Design: Single Group Design, Reverse Group Design, Repeated Measure Design, Static Group Comparison Design, Equated Group Design, Factorial Design. **UNIT III** Report Writing: Front Materials, Body of Thesis – Back Materials. Method of Writing Research Proposal, Thesis / Dissertation: Method of Writing Abstract, Mechanics of Writing Research Report, Bibliography Writing. **UNIT IV** Meaning and Definition of Statistics. Need and importance of Statistics. Types of Statistics. Meaning, uses and construction of frequency table. Meaning, Purpose, Calculation and advantages of Measures of central tendency -Mean, Median and Mode. **UNIT V** Meaning, Purpose, Calculation and advantages of Range, Quartile Deviation, Mean Deviation, Standard Deviation., Probable Error. Meaning, Purpose, Calculation and advantages of Scoring scales: Sigma scale, Z Scale, Hull scale. Graphical Representation in Statistics: Line Diagram, Pie diagram, Bar diagram, Histogram, Frequency Polygon, Ogive Curve. **Text Book** 1. Best, J.W. (1971) Research in Education, Englewood Cliffs,: Prentice Hall. 2. Clark, D.H. (1999) Research Problem in Physical Education 2nd edition, Eaglewood Cliffs:Prentice Hall, Inc. 3. Clarke David.H & Clarke H, Harrison (1984) Research processes in physical Education. 4. Craig Williams and Chris Wragg (2006) Data Analysis and Research for Sport and exercise science London : Routledge Press. 5. Jerry R Thomas & Jack K Nelson(2000) Research Methods in Physical Activities, Illinois Human Kinetics

6. Kamlesh, M.L. (1999) Research Methodology in Physical Education and Sports.
7. New Moses, A.K..(1995) Thesis Writing Format. Chennai : Poompugar Pathippagam. Publications.
8. Rothstain, A.(1985) Research Design and Statistics for Physical Education, Englewood Cliffs: Prentice Hall, Inc.

2. **COURSE OUTCOME students are able to**

CO-1	Identify the research problem in the field of physical Education and sports
CO-2	Know to Summarize the various research literature
CO-3	Understand and apply the basics of statistics in research.
CO-4	Organize the samples and sampling techniques which is relevant to the study
CO-5	Appraise the effects during the training and practical sessions

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		2	1			2	3		
2	2		2		1	2		3		2
3	1	2			1				2	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	1	3
3		

M15303	**SPORTS MANAGEMENT, RECREATION AND CAMPING**
	Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS**

UNIT I

` Meaning and Definition of Sports Management – Scope of Sports Management – Progressive Concept of Sports Management – Essential Skills of Sports Management – Qualities and Competencies required for the Sports Manager - Event Management in Physical Education and Sports.

UNIT II

Meaning and Definition of Leadership, Methods, Style, Elements – Forms of Leadership – Autocratic, Laissez – Faire, Democratic. Administrative Leader: Preparation and Qualities of Leadership and Organizational Performance – Professional Ethics.

UNIT III

Sports Management – Planning of School, College and University Sports programme – Factors affecting Planning – Directing and Controlling of School College and University Sports Programme – Developing Performance Standard – Establishing a Reporting System - The Reward and Punishment System.

UNIT IV

Recreation: Meaning, Definition, Aim, Objectives, Scope and Significance of Recreation. Agencies offering Recreation: Home, Governmental, Voluntary, Private, Commercial - Recreation in Rural, Urban, Community and Industrial – Areas, Facilities, Equipment and their Maintenance.

UNIT V

Camping - Definition and Meaning – Scope and significance of Camping – Types of Camps – Selection and layout of campsites – organization and administration of camps – camp progrmmes and activities – Evaluation of camp work.

Text Book

1. Authors Guide (1986) Organization, Adminsitration and Recreation in Physical Education, Parkash brothers, Educational Publishers, Ludhiana.

2. Ashton, D. (1968).Administration of Physical education for Women. New York: The Ronal Press Cl.
3. Chakraborthy & Samiran. (1998). Sports Management., New Delhi: Sports Publication.
4. Charles, A, Bucher & March, L, Krotee. (1993). Management of Physical Education and Sports. St.Louis: Mosby Publishing Company.
5. Chelladurai, P. (1999). Human Resources Management in Sports and Recreation. Human Kinetics.
6. Williams, J.F. (2003). Principles of Physical Education. Meerut: College Book House.

2. **COURSE OUTCOME students are able to**

CO-1	Know sports management and employ principles of strategic planning, and financial and human resource management.
CO-2	Assess marketing needs and formulate short term and long term solutions.
CO-3	Develop critical thinking in analysing sport management issues and in managerial planning and decision making.
CO-4	Able to organize recreational camp and activities

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		3		1	1	2		2	
2	3			2			1	3	1	
3		2	3	1				2	1	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	2	1
3	1	3

B15401	**THEORIES OF SPORTS AND GAMES, COACHING AND OFFICIATING- PART II**
	Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS**

UNIT I

World and Indian History – Marking and Measurements of Play Fields and Standard Equipment for the following games: Badminton, Ball Badminton, Lawn Tennis and Table Tennis.

UNIT II

World and Indian History – Marking and Measurements of Play Fields and Standard Equipment for the following games: Kabaddi, Kho-Kho, Netball, Softball, Swimming.

UNIT III

Rules and Interpretations: Duties of Officials, Methods of Breaking Ties, Mechanism and System of Officiating, Official signals of the following games and sports: Badminton, Ball Badminton, Lawn Tennis and Table Tennis.

UNIT IV

Rules and Interpretations: Duties of Officials, Methods of Breaking Ties, Mechanism and System of Officiating, Official signals of the following games and sports: Kabaddi, Kho-Kho. Eligibility rules for Inter- School Tournaments: RDG, BDG, RDS and SGFI Tournaments. Eligibility Rules for Inter University and Inter Collegiate Tournaments.

UNIT V

Rules and Interpretations: Duties of Officials, Methods of Breaking Ties, Mechanism and System of Officiating, Official signals of the following games and sports: Netball, Softball, Swimming.

Text Book

1. Anand, R.L (1987) Play Field Manual, Patiala : NIS Publication.
2. George Immanuel. (1997). Track and Field Event layout and Marking. Chennai:
3. Hardayal Singh. (2005). Sports Training - General Theory and Methods. Patiala: NSNIS.
4. Josse, P, Moprtensen., & John, M,Copper. (1998). Track and Field for Coach and Athlete. St.Louis: C.V.Mosphy Company.
5. Krishna Murthy, J. (2007). Training of Physical Education Students. New Delhi: Verma Publication.

2. **COURSE OUTCOME students are able to**

CO-1	Know the fundamental of all the games and sports
CO-2	Understand the rules of all the games and sports
CO-3	Preparing the students for the competition
CO-4	Classify the students accordingly for various games and sports
CO-5	Design and practice the new methods of technique and training.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3		1			2	1	2
2		2	1					1		3
3	1	3	1		1	1	2			2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	1	3
3	2	3

B15402	KINESIOLOGY AND BIOMECHANICS
	Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS**

UNIT I

Introduction to Kinesiology and Sports Biomechanics: Meaning and Definition of Kinesiology and Sports Biomechanics. Importance of Kinesiology and Sports Biomechanics to Physical Education Teacher, Athletes and Sports Coaches. Terminology of Fundamental Movements. Fundamental concepts of following terms: Axes and Planes, Centre of Gravity, Equilibrium, Line of Gravity

UNIT II

Fundamental Concept of Anatomy and Physiology: Joints and Muscles, Types of Muscle Contractions. Posture: Meaning, Types and Importance of good posture. Fundamental concepts of following terms: Angle of Pull, All or None Law, Reciprocal Innervations.

UNIT III

Mechanical Concepts: Force - Meaning, definition, types and its application to sports activities. Lever - Meaning, definition, types and its application to human body. Newton's Laws of Motion – Meaning, definition and its application to sports activities. Projectile – Factors influencing projectile trajectory.

UNIT IV

Kinematics and Kinetics of Human Movement: Linear Kinematics – Distance and Displacement, speed and velocity, Acceleration Angular kinematics – Angular Distance and Displacement, Angular Speed and velocity, Angular Acceleration. Linear Kinetics – Inertia, Mass, Momentum, Friction. Angular Kinetics – Moment of inertia ,Couple, Stability.

UNIT V

Biomechanical Analysis: Biomechanical Analysis of following Track and Field Events: Running, Horizontal and Vertical Jumping, Throwing Events. Biomechanical Analysis of Skill of Major Games

Text Book

1. Bunn, J. W. (1972).*Scientific principles of coaching.* Englewood Cliffs, N.J.: Prentice Hall Inc.

2. Hay, J. G. & Reid, J. G.(1988).*Anatomy, mechanics and human motion.* Englewood Cliffs,N.J.: prentice Hall Inc.
3. Hay, J. G. (1970).*The biomechanics of sports techniques*. Englewood Cliffs, N.J.: Prentice Hall, Inc.
4. Simonian, C.(1911).*Fundamentalsof sport biomechanics.* Englewood Cliffs, N.J.: Prentice Hall Inc.

2. **COURSE OUTCOME students are able to**

CO-1	Analyze and explain the mechanisms underlying biomechanical, physiological, and psychological changes that occur during after acute and chronic exercise.
CO-2	Understand mechanical principles can be applied to the analysis of human movement to assess and improve performance and reduce risk of injury.
CO-3	Know effectiveness of human movement using mechanical principles.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3		1	1	2		2	
2	2			2			1	3	1	
3		2	3	1				2	1	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2		
3	1	3

B15403	SPORTS PSYCHOLOGY AND SOCIOLOGY
	Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**
1.	**SYLLABUS**

UNIT I

Meaning, Definition, Need and Importance of Sports Psychology. Motor Learning: Basic Considerations in Motor Learning – Motor Perception - Factors Affecting Perception – Perceptual Mechanism. Intelligent Quotient.

UNIT II

Personality: Meaning, Definition, Structure, Types, Effects of Personality on Sports Performance. Motivation: Meaning and Definition, Types of Motivation: Intrinsic, Extrinsic. Achievement Motivation. Theories and Dynamic of Motivation in sports.

UNIT III

Anxiety: Meaning and Definition, Nature, Causes, Competitive Anxiety and Sports Performance. Stress: Meaning and Definition, Causes. Stress and Sports Performance. Aggression: Meaning and Definition, Aggression and Sports Performance. Self Concept: Meaning and Definition

UNIT IV

Sports Sociology: Meaning and Definition – Sports and Socialization of Individual, Sports as Social Institution. National Integration through Sports. Fans and Spectators: Meaning and definition, Advantages and disadvantages of Sports Performance. Leadership: Meaning, Definition, types. Leadership and Sports Performance.

UNIT V

Group: Meaning and Definition, Group Size, Groups on Composition, Group Cohesion, Group Interaction, Group Dynamics. Current Problems in Sports and Future Directions – Sports Social Crisis Management - Women in Sports: Sports Women in our Society, Participation pattern among Women, Gender inequalities in Sports.

Text Book

1. John D Lauther (2000) Psychology of Coaching. Ner Jersy: Prenticce Hall Inc.
2. Jain. (2002), Sports Sociology, Heal Sahety Kendre Publishers.
3. John D.Lauther (1998) Sports Psychology. Englewood, Prentice Ha
4. Richard, J. Crisp. (2000). Essential Social Psychology. Sage Publications.
5. Robert N. Singer(2001). Motor Learning and Human Performance. New York: The Macmillan Co.
6. Whiting, K, Karman.,. Hendry L.B & Jones M.G..(1999) Personality and Performance in Physical Education and Sports. London:

2. **COURSE OUTCOME students are able to**

CO-1	Explain group mechanisms and group psychology in a sports context
CO-2	Reflect upon motivational psychology as applied to sports activities
CO-3	Formulate relevant constructs of exercise psychology
CO-4	Demonstrate the ability to discuss sociological theories, concepts, and ideas in large and small groups and to express empirically as well as theoretically-based opinions.
CO-5	To apply core sociological theories to specific social problems in order to analyze social problems.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3		1			2	1	2
2		2	1					1		3
3	1	3	1		1	1	2			2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2		
3	1	3

LIST OF DISCIPLINE SPECIFIC ELECTIVE

ODD SEMESTER

A. Olympic Movement

B .Gender Studies

C. Sports Medicine, Physiotherapy and Rehabilitation.

D. Contemporary Issues in Physical Education, Fitness and Wellness

EVEN SEMESTER

A. Educational Technology and Computer Application in Physical Education

B. Sports Nutrition and Weight Management

C. Disability and Inclusive Education

D. Research Project (IV Semester Only)

DISCIPLINE SPECIFIC ELECTIVE

OLYMPIC MOVEMENT

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Origin of Olympic Movement: The early history of the Olympic Movement, Philosophy of Olympic Movement, Goals of the Olympic movement, Educational and cultural values of Olympic movement. Ancient Olympic Games: Significance of ancient Olympics – Rules of eligibility for competition – Conduct of games, Awards – Decline and Termination of the ancient Olympics. Modern Olympics: The significant stages in the development of the modern Olympic movement. Rules of Eligibility for Competition – Conduct of Games.

UNIT II

Olympic Ideals: Significance of Olympic Ideals, Olympic Symbol – Olympic Flag – Olympic Motto – Olympic Anthem – Olympic Emblem – Olympic flame and torches – Olympic Designations - Olympic protocol for member countries - Olympic Charter - Olympic code of Ethics - Olympism in action - Sports for All.

UNIT III

Different Olympic Games: The Organizational Structure, Aim, Objectives and Functions of Para Olympic Games, Summer Olympics, Winter Olympics, Youth Olympic Games. Election of host city – Location, sites and venues –Olympic Village – E Protocol (Use of Flag and Flame, Opening and Closing Ceremony – Victory, Medal, and Diploma ceremonies and Roll of Honour) – Disputes.

UNIT IV

Committees of Olympic Games: Governing Body: International Olympic Committee - Structure and Functions, National Olympic committees and their role in Olympic movement, Olympic commission and their functions, Rights and Eligibility for Competitors.

UNIT V

Achievements of India in Olympics: Pre Independence Period-Independence. Achievement of India in Team Games and Individual Sports-Achievements of India in Hockey. Olympic Medal winners of India. Indian Women in Olympics.

Text Book

1. Ajmeer Sing, Jagdish Bans, Jagtar Sing Gill , Rachpal Singh Brar and Nirmaljit Kaur Rathee (2004) Essentials of Physical Education, New Delhi: Kalyani Publisheres.
2. Burbank, J. M., Andranovich, G. D. &Heying Boulder, C. H. (2001). Olympic dreams: the impact of mega-events on local politics: Lynne Rienner
3. Osborne, M. P. (2004). Magictree House Fact T Olympics: A Nonfiction Companion To Magic Tree House: Hour of the Olympics. New york: random house books for young readers.

2. **COURSE OUTCOME students are able to**

CO-1	Understand the Educational and cultural values of Olympic movement**.**
CO-2	Analyze the Modern Olympic Games and Rules of Eligibility for Competition.
CO-3	Know about The organizational structure and functions of Para Olympic Games
CO-4	Analyze the Achievement of India in Team Games and Individual Sports.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	2	1
3	1	3

DISCIPLINE SPECIFIC ELECTIVE

GENDER STUDIES

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Social Construction of Gender: Gender vs. Biology, Equality vs. Difference, Women in the family: socialization, Nature vs. Gender, gender roles, private–public dichotomy, sexual division of labour.

UNIT II

Patriarchy as ideology and practice. Transgender: The Science Behind Transgender-Characteristics and Problems of Transgender- Role of Family and Society on Transgender. The Psychology of Sex Differences.

UNIT III

Emergence of Feminist Thought: Socio-historical perspective, Mapping various women's movements, Emergence of women's studies Gender based Division of Labour/Work Production vs. Reproduction.

UNIT IV

Household work, invisible work Women's work and technology Development policies, liberalisation and globalisation and their impact on women.

UNIT V

Alternative conceptions of gender–caste and gender; class and gender. Gender Issues and problems in Sports.

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Text Book

1. Chodrow, Nancy. 1978. The Reproduction of Mothering. Berkeley: University of California Press.
2. Desai, Neera and M. Krishnaraj. 1987. Women and Society in India. Delhi: Ajanta.
3. Maccoby, Eleaner and Carol Jacklin. 1975. The Psychology of Sex Differences. Stanford: Stanford University Press.

2.	**COURSE OUTCOME students are able to**	
	CO-1	Able to explain and understand the concepts of gender studies
	CO-2	Able to interpret and identify the gender issues and problems

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1				2		1	3
2			3					2	1	3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2	2	1
3	1	3

DISCIPLINE SPECIFIC ELECTIVE

SPORTS MEDICINE, PHYSIOTHERAPY AND REHABILITATION

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Sports Medicine: Meaning, Definition, Aims, Objectives, Modern Concepts and Importance. Athletic Care and Rehabilitation: Contribution of Physical Education Teachers and Coaches, Sports Injuries: Meaning, Importance, Prevention of Injuries in Sports.

UNIT II

Physiotherapy: Definition – Guiding Principles of Physiotherapy, Importance of Physiotherapy, Introduction and Demonstration of Treatments – Electrotherapy – Infrared Radiation Therapy– Ultraviolet Radiation Therapy – Short Wave Diathermy –Ultrasound Therapy.

UNIT III

Hydrotherapy: Introduction and demonstration of treatments of Cryotherapy, Thermotherapy, Contrast Bath, Whirlpool Bath – Steam Bath – Sauna Bath – Hot Water Fomentation – Massage – Classification of Manipulation (Sweedish System) Physiological Effect of Massage.

UNIT IV

Therapeutic Exercise: Definition and Scope – Principles of Therapeutic Exercise – Classification, Effects and Uses of Therapeutic Exercise – Passive Movements (Relaxed, Forced and Passive Stretching) – Active Movements: Assisted, Free Exercise, Assisted – Resisted, Resisted. Application of the Therapeutic Exercise: Free Mobility Exercise – Shoulder, Elbow, Wrist and Finger Joints – Hips, Knee, Ankle and Foot Joints – Trunk, Head and Neck.

UNIT V

Posture, First Aid and Sports Injuries Posture :Definition, Types, Postural Deformities: Kyposis, Lordosis and Scoliosis. ~~s~~. First Aid –General Rules – First Aid Treatment – Shock, Sun Stroke –~~,~~ Fainting, Dog Bite, Snake Bite, Poisoning, Drowning, Bleeding. Common Sports Injuries – Diagnosis – First Aid Treatment: Abrasion – Laceration – Blisters – Contusion – Strain – Sprain – Fracture – Dislocation and Cramps. Bandages – Kinds of Bandages and Dressings – Strapping and Supports

Text Book

1. Christine, M. D., (1999). Physiology of sports and exercise.USA: Human Kinetics.
2. Conley, M. (2000). Bioenergetics of exercise training. In T.R. Baechle, & R.W. Earle, (Eds.),
3. Essentials of Strength Training and Conditioning (pp. 73-90). Champaign, IL: Human Kinetics.
4. David, R. M. (2005).Drugs in sports, (4th Ed). Routledge Taylor and Francis Group.

2. **COURSE OUTCOME students are able to**

CO-1	Understand the primary responsibilities the sports trainer has in preventing sports injuries and providing initial care for injured athletes.
CO-2	Demonstrate the basics of sport first aid during and after game situation.
CO-3	Recognise and appropriately treat common sports injuries and conditions from onset through rehabilitation.
CO-4	Identify and apply knowledge of anatomy to the design and execution of research studies.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3		1				1	3	2	
2	2	1		2			3	1		
3		2	3			1			2	3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	1	3
3		

DISCIPLINE SPECIFIC ELECTIVE

EDUCATIONAL TECHNOLOGY AND COMPUTER APPLICATION IN PHYSICAL EDUCATION

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Introduction: Education and Education Technology- Meaning and Definitions. Types of Education- Formal, Informal and Non- Formal Education. Educative Process Importance of Devices and Methods of Teaching.

UNIT II

Teaching Technique: Teaching Technique – Lecture method, Command method, Demonstration method, Imitation method, Project method. Micro Teaching – Meaning, Types and steps of micro teaching. Simulation Teaching - Meaning, Types and steps of simulation teaching.

UNIT III

Teaching Aids : Teaching Aids – Meaning, Importance and its criteria for selecting teaching aids. Teaching aids – Audio aids, Visual aids, Audio – Visual aids, Verbal, Chalk board, Charts, Model, Slide projector, Motion picture. Team Teaching – Meaning, Principles and advantage of team teaching. Difference between Teaching Methods and Teaching Aid.

UNIT IV

Introduction to Computer and MS Word: Meaning, Need and Importance of Information and Communication Teaching (ICT) .Application of Computers in Physical Education. MS Word: Introduction to MS Word – Creating, Saving and Opening a Document – Formatting, Editing Features – Mail Merge -Drawing Table – Page Setup, Paragraph Alignment – Spelling and Grammar Check – Printing Option. Inserting: Page Number, Graph, Footnote and End Notes.

UNIT V

MS Excel and Power Point : Introduction to MS Excel, Creating, saving and opening spreadsheet, Creating formulas. Format and editing features adjusting columns width and row height understanding charts. MS Power Point: Introduction to MS Power Point, Creating, saving and opening a ppt. file, format and editing features slide show , design , inserting slide number, picture ,graph ,table, Preparation of Power point presentations.

Text Book

1. Irtegov, D. (2004). Operating System Fundamentals. Firewall Media.
2. Marilyn, M.& Roberta, B.(n.d.).Computers in your Future. 2nd Edition, India: Prentice Hall.
3. Milke, M.(2007). Absolute Beginner's Guide to Computer Basics. Pearson Education Asia.
4. Sinha, P. K. & Sinha, P..Computer Fundamentals. 4th edition, BPB Publication.

2. **COURSE OUTCOME students are able to**

CO-1	Perform and report on the exploratory analysis of data collected using sports technology
CO-2	Analyze sporting data of various types via astute use of statistical packages.
CO-3	Practice mathematics, statistics, information technology in sport technology related problems
CO-4	Support a conclusion based upon quantitative prediction, performance and analysis of a sporting team, code, or gaming environment
CO-5	Offer Hands on Knowledge in sports Technology

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2	1						3	1	3
2		2	3		1				1	3
3			1			2	3			2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2		
3	2	1

DISCIPLINE SPECIFIC ELECTIVE

DISABILITY AND INCLUSIVE EDUCATION

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Definition of Disabling Conditions - Benefits of Physical Education for persons with Disabilities - Recreational Sports Opportunities, Competition Opportunities - Special Olympics, Paralympics and Deaflympics.

UNIT II

Classification of Disability: Visual, Auditory, Neuromuscular, Orthopedic - Cardiovascular, Respiratory, Mental, Emotional. Adapted Physical Education Activities - Specific Guidelines for: Visual Impairment, Hearing Impairment, intellectually challenged, Orthopedically Handicapped.

UNIT III

Adaptation of Motor Activities – Principles for Adaptation of Motor Activities – Facilities and Equipment for different disabilities. Orientation on Facilities - Types of Equipment- Minimum equipment, Additional Equipment, Evaluation of Equipment. Leisure, Recreation and Sports Facilities for persons with disabilities.

UNIT IV

Adapted Games for Persons with Disability: Rules of Adapted games and Class Management – Adapted Games for the blind: Adapted Volleyball, Kabaddi, Tennis, Table Tennis and Adapted minor games and Track and Field events. Teaching methods to be adapted by the Special Educator in Sports, Recreation and Games. Kinesthetic – one on one teaching , group teaching, circular method of teaching. Unified Sports.

UNIT V

Inclusive Education : Meaning, Definition , Aim and Objectives. Strategies for including students. Steps for modifying and adaptation of the physical education curriculum. Methods of playing Inclusive games: Hula Contortion, Lasso, Pumkin Fun, Snickers & Hoots, What Do You Like To Eat, Mr. & Mrs. Owl?, Toy soldier, Clean-up Your Own Back Yard, Parachute Activities, Freeze Tag Not!, Peace Release, Top Gun High Five’s and Rock, Paper, Scissors, Dynamite.

Text Book

1. Jain, A. (2003). Adapted Physical Education. Delhi: Sports Publication.
2. Kassar, Susan (1995). Inclusive Games. Human Kinetics Champaign, IL.
3. Lau, D. S. (2001). Physical Education for the Physically Handicapped. Delhi: Khel Sahitya Kendra.
4. Mary E. Samples (2012) Camarillo, CA 93012, www.venturacountyselpa.com
5. Schiffer, M. (1971). The Therapeutic Play Group. London: George Allen and Unwin ltd.
6. Sharma, D. (2006), Adapted Physical Education. New Delhi: Friends Publication.
7. Sullivan, G. M. (1982), Teaching Physical Activities to Impaired Youth: An Approach to Mainstreming. USA: Jhon Wilkey and Sons.

2. **COURSE OUTCOME students are able to**

CO-1	Understand about classification of Disabilities.
CO-2	Understand adopted games for disability persons.
CO-3	Known the benefits of exercise for disability persons.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2		
3	1	2

DISCIPLINE SPECIFIC ELECTIVE

SPORTS NUTRITION AND WEIGHT MANAGEMENT

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Introduction to Sports Nutrition – Nutrition, Sports Nutrition : Meaning and Definition – Basic Nutritional Guidelines – Role of Nutrition in Sports – Factors to be considered for developing Nutritional Plan.

UNIT II

Nutrients: Ingestion to Energy Metabolism: Carbohydrates, Protein, Fat – Meaning, Classification and its Functions. Role of Carbohydrates, Fat and Protein during Exercise. Vitamins, Minerals, Water : Meaning, Classification and its Function. Role of Hydration during Exercise, Water Balance.

UNIT III

Weight Management: Meaning, Concept of Weight Management in the Modern Era – Factors affecting Weight Management and Values of Weight Management -

Maintaining a Healthy Life Style - Body Mass Index (BMI)

UNIT IV

Planning of Weight Management: Determination of Desirable Body Weight – Daily Caloric Intake and Expenditure – Balanced Diet for Indian School Children – Weight Management Programme for Sporty Children – Role of Diet and Exercise in Weight Management – Diet Plan and Exercise Schedule for Weight Gain and Loss.

UNIT V

Obesity: Meaning – Definition – Types – Causes and Solution for overcoming Obesity. Myths of Spot Reduction and Weight Loss – Dieting and Exercise for Weight Control

.

Text Book

1. Bessesen, D. H. (2008). Update on obesity. J ClinEndocrinolMetab.93(6), 2027-2034.
2. Butryn, M.L., Phelan, S., &Hill, J. O.(2007). Consistent self-monitoring of weight: a key component of successful weight loss maintenance.Obesity(Silver Spring). 15(12), 3091- 3096.
3. Chu, S.Y. & Kim, L. J. (2007). Maternal obesity and risk of stillbirth: a metaanalysis Am J ObstetGynecol, 197(3), 223-228.
4. DeMaria, E. J. (2007). Bariatric surgery for morbid obesity. N Engl J Med,356(21), 2176-2183.

2. **COURSE OUTCOME students are able to**

CO-1	Restate the role of nutrients and caloric requirements
CO-2	Sketch the basic classification, functions and utilization of nutrients.
CO-3	Point out diet for various competitions and nutrient supplements for performance.
CO-4	Evaluate the factors affects weight management and solutions for obesity and Design caloric requirements for various sports and age groups.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2	1	3			2		3	1	1
2	2			1				3	2	1
3		1	1		2			3		

4 **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2	3	2
3		

DISCIPLINE SPECIFIC ELECTIVE

CONTEMPORARY ISSUES IN PHYSICAL EDUCATION, FITNESS AND WELLNESS

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Concept of Physical Education and Fitness : Definition, Aims and Objectives of Physical Education, fitness and Wellness. Importance and Scope of fitness and wellness. . Modern concept of Physical fitness and Wellness. Physical Education and its Relevance in Inter Disciplinary Context.

UNIT II

Fitness, Wellness and Lifestyle ; Fitness – Types of Fitness and Components of Fitness. Understanding of Wellness. Modern Lifestyle and Hypo kinetic Diseases – Prevention and Management. Physical Activity and Health Benefits

UNIT III

Principles of Exercise Programme: Means of Fitness development – aerobic and anaerobic exercises. Exercises and Heart rate Zones for various aerobic exercise intensities. Concept of free weight Vs Machine, Sets and Repetition . Concept of designing different fitness training programme for different age group.

UNIT IV

Safety Education and Fitness Promotion: Health and Safety in Daily Life. First Aid and Emergency Care. Common Injuries and their Management. Modern Life Style and Hypo-kinetic Disease –Prevention and Management

UNIT V

Sports Nutrition**:** Diet for sports competition- supplementation to the daily diet. Vitamins, Minerals, Fluids. Electrolyte replacement, Carbohydrate loading, Protein loading, Calcium and iron supplement. Pre-event meal. Time for pre-event meal, Alternate eating pattern, Foods to avoid. Exercise and weight control, Crash dieting, Weight Control.

Text Book

1. Difiore, J.(1998). Complete guide to postnatal fitness. London: A & C Black,.
2. Giam, C.K & The, K.C. (1994). Sport medicine exercise and fitness. Singapore: P.G. Medical Book.

3. Mcglynn, G., (1993). Dynamics of fitness. Madison: W.C.B Brown.
4. Sharkey, B. J.(1990). Physiology of fitness, Human Kinetics Book.
5. William, D. Mc Aradle. (1996). Exercise Physiology, Performance. Philadelphia: Lippincott Williams Company.

2. **COURSE OUTCOME students are able to**

CO-1	Discuss research from a multidisciplinary perspective relative to current issues in physical activity and health.
CO-2	Apply qualitative research methods to explore and critically examine a variety of curricular topics.
CO-3	Demonstrate application of relevant research and theory to a contemporary issue in physical activity and exercise science.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3		2		1			2		2
2	1		2	1			2		3	1
3		2		1		1		1		3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2	3	2
3		

DISCIPLINE SPECIFIC ELECTIVE

EDUCATIONAL TECHNOLOGY IN PHYSICAL EDUCATION

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Nature and Scope: Educational technology-concept, Nature and Scope. Forms of educational technology: teaching technology, instructional technology, and behaviour technology; Transactional usage of educational technology: integrated, complementary, supplementary stand-alone (independent); programmed learning stage; media application stage and computer application stage.

UNIT II

Systems Approach to Physical Education and Communication: Systems Approach to Education and its Components: Goal Setting, Task Analysis, Content Analysis, Context Analysis and Evaluation Strategies; Instructional Strategies and Media for Instruction. Effectiveness of Communication in instructional system; Communication - Modes, Barriers and Process of Communication.

UNIT III

Instructional Design :Instructional Design: Concept, Views. Process and stages of Development of Instructional Design. Overview of Models of Instructional Design; Instructional Design for Competency Based Teaching: Models for Development of Self Learning Material.

UNIT IV

Audio Visual Media in Physical Education: Audio-visual media - meaning, importance and various forms Audio/Radio: Broadcast and audio recordings - strengths and Limitations, criteria for selection of instructional units, script writing, pre-production, post-production process and practices, Audio Conferencing and Interactive Radio Conference. Video/Educational Television. Use of Television and CCTV in instruction and Training, Video Conferencing,

SITE experiment, Use of animation films in Teaching Physical Activities.

UNIT V

New Horizons of Educational Technology: Recent innovations in the area of ET interactive video - Hypertext, video-texts, optical fiber technology - laser disk, computer conferencing. Procedure and organization of Teleconferencing/ Interactive video-experiences of institutions, schools and universities. Computer Assisted Instruction/ Teaching in Physical Education and Sports.

Text Book

1. Bhatia and Bhatia (1959). The Principles and Methods of Teaching (New Delhi : Doaba House.
2. Dasgupta D.N, Communication and Education, Pointer Publishers Education and Communication for development, O. P. Dahama, O. P. Bhatnagar, Oxford (Page 68 of 71) IBH Publishing company, New Delhi
3. Sampath K, Pannirselvam A and S. Santhanam (1981) Introduction to Educational Technology New Delhi: Sterling Publishers Pvt. Ltd..
4. S.K. (1982)Methods and Techniques of Teaching (New Delhi, Jalandhar, Sterling Publishers Pvt. Ltd.

2. **COURSE OUTCOME students are able to**

CO-1	Plan, develop, communicate, implement, and evaluate technology-infused strategic plans.
CO-2	Maintain and manage a variety of digital tools and resources for use in technology-rich learning environment
CO-3	Design, develop, and implement technology-rich sports program that model of sports field and promote digital age best practices playing and assessment.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4.	**MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2	1	2
3	1	3

Generic Elective

To successfully complete the BPEd course the students must undergo and complete anyone of the generic elective (Open Elective) in the third Semester.

Generic Elective Courses

1. **CONSTRUCTION AND MAINTENANCE OF PLAY FIELDS**
2. **TOURISM MANAGEMENT IN INDIA**

GENERIC ELECTIVE COURSES

CONSTRUCTION AND MAINTENANCE OF PLAY FIELDS

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Non Standard Track: Area Required, Calculation of RDR, CDR, Curve, Straight, line, Lane and Track method of calculation and Marking Procedure. Periodical Maintence.

UNIT II

Standard Track as per IAAF: Area Required, Calculation of RDR, CDR, Curve, Straight , line, Lane and Track method of calculation and Marking Procedure. Periodical Maintence.

UNIT III

Filed Events : Method of Marking and Construction of Throwing events: Shot-put, Hammer Discus and Javelin. Method of Marking and Construction of Jumping events: Long Jump, Triple Jump, High Jump, Pole Vault.

UNIT IV

Construction and Maintence of Rectangular Play Fields: Basketball, Football, Hockey, Handball, Kabaddi, Kho- Kho, Volleyball,. Construction and Maintence of Circular : Play Fields: Cricket.

UNIT V

Surface: Natural, Wooden, Artificial/ Synthetic fields. Turf for Indoor Stadium, Turf for Kabaddi. Advantages, and Method of Maintence.

Text Book

1. Authors Guide (2002) Rules of Games and Sports, New Delhi : YMCA Publishing House.
2. Authors Guide (2019) FIBA Official Basket Rules : Munich..
3. Chelliah, S.N (1990), Vilayattu Vithi Muraihal, Chennai: Raj Mohan Pathipagam.
4. Gangopaddhayoy, S. R. (2008). Encyclopaedia of Sports Training. New Delhi: Sport Publication.
5. Hardayal Singh. (2005). Sports Training - General Theory and Methods. Patiala: NSNIS.
6. Josse, P, Moprtensen., & John, M,Copper. (1998). Track and Field for Coach and Athlete. St.Louis: C.V.Mosphy Company.

2. **COURSE OUTCOME students are able to**

CO-1	Able to Mark and Maintain Track and Field
CO-2	Able to Mark and Maintain Play Field Marking
CO-3	Able to Understand the concept of surfaces of Play Fields

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	1	2
3	1	3

GENERIC ELECTIVE COURSES

TOURISM MANAGEMENT IN INDIA

Instruction : 4 Hours / Week **Credits : 4** **Assessment : 25+75**

1. SYLLABUS

UNIT I

Geographical unit of India: Location, Position, Neighborhood, Climate, People and language. National Tourism Policy, Enhancing India's Competitiveness as a Tourism Destination.

UNIT II

Definition of Tourism, types of tourism. Basic components of tourism, Motivation of tourism. International tourist, Domestic tourist, Various kinds of tourism.

UNIT III

Accommodation: Definition of hotel types of hotel hotel terminology. Transport : Air transport, Rail transport, Water transport, Road transport.

UNIT IV

Organizations role of NTO, functions of NTO, role of WTO, role of TTDC- role of ITDC in promoting tourism.

UNIT V

UNESCO world heritage sites in India, Monuments, Ancient temple of India , Forts, Palaces, Museums.

Text Book

1. Prannath Seth, (1997) Successful tourism management, Sterling Publishers: New Delhi.
2. Satyender Singh Malik, (2006), Potential of Adventure Tourism in India,Akam Kala Prakashan Publisher.
3. Authors Guide (2002), National Tourism Policy, Ministry of Tourism , Government of India, New Delhi.
4. Bhatia A.K.,(2003) International-Tourism, Sterling Publishers Pvt Ltd, New-Delhi.
5. Bhatia A.K.,(2003) Tourism Development Principles and Practices, Sterling Publishers Pvt Ltd, New-Delhi.

2. **COURSE OUTCOME students are able to**

CO-1	Able to understand the Geographical units of India.
CO-2	Able to understand the International and Domestic Tourism
CO-3	Able to understand and identify the UNESCO world heritage sites in India

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1				1	3		
2		2	3			2		1		2
3				1	2			3	1	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	1	3
3		

Ability and Skill Enhancement Courses:(Part IV)

To successfully complete the BPEd course the students must under go the Ability and Skill Enhancement Courses under the sub headings of Ability Enhancement Compulsory Courses (AECC) , Skill Enhancement Courses and Co-Curricular course.

Ability Enhancement Compulsory Courses (AECC)

First Semester – **COMMUNICATION SKILLS**

Second Semester – a) **ENVIRONMENTAL STUDIES**

b) SOFT SKILLS

Skill Enhancement Courses (SEC)

Third Semester - (Any one paper from the basket of choices)

A) OBESITY AND WEIGHT MANAGEMENT
B) SPORTS FIRST AID

PART-IV-ABILITY ENHANCEMENT ELECTIVE COURSE

COMMUNICATION SKILLS

Instruction : 2 Hours / Week **Credits : 2** **Assessment : 50**

1. SYLLABUS

UNIT I

UNIT I

Recap of Language Skills – Speech, Grammar, Vocabulary, Phrase, clause, sentence, Punctuation. Fluency building: What is fluency – Why is fluency important – Types of fluency – Oral fluency – Reading fluency – Writing fluency – Barriers of fluency – How to develop fluency.

UNIT II

Principles of communication: LSRW in communication. What is meant by LSRW Skills – Why it is important – How it is useful – How to develop the skills?. Oral – Speaking words, articulation, speaking clearly.

UNIT III

Written communication – Generating ideas/ gathering data organizing ideas, Setting goals, Note taking, Outlining, Drafting, Revising, Editing and Proof reading. Non verbal communication – Body language, Signs and symbols,
Territory/Zone, Object language.

UNIT IV

Speaking Skills: Formal and Informal Conversation – Conversation in the work place – Interviews – Public. Speech – Lectures. Listening Skill: Comprehending – Retaining – Responding – Tactics – Barries to Listening – Overcoming. listening barriers – Misconception about listening.

UNIT V

Reading Skill: Acquiring reading – Reading Development – methods teaching – Reading difficulties. Writing skill: Note-making – CV's – Report writing, copy writing, Agenda – Minutes – Circular – Essay writing on any current issues – paragraph – Essay writing, Writing Research papers – Dissertation.

Text Book

1. Book for South Asian Students. Reprint 2003. Cambridge University Press. New Delhi.
2. Hall and Shepherd. The Anti-Grammar Book: Discovery Activities for Grammar Teaching
3. Hewing, Martin. 1999. Advanced English Grammar: A Self-study Reference and practice
4. John, Seely The Oxford guide to writing and speaking. Oxford U P, 1998, Delhi.
5. SasiKumar. V and P.V. Dharmija. 1993. Spoken English: A Self-Learning Guide Conversation Practice. 34th reprint. Tata McGraw – Hill. New Delhi.

2. **COURSE OUTCOME students are able to**

CO-1	Able to communicate better
CO-2	Able to create awareness among youth the need and importance of communication skills.
CO-3	Understands the need and importance of communication skills.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2							3	1	
2		2	3		1		2	1		
3	2		1	1		2				

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	1	2
3	1	3

PART-IV-ABILITY ENHANCEMENT ELECTIVE COURSE

ENVIRONMENTAL STUDIES

Instruction : 2 Hours / Week **Credits : 2** **Assessment : 50**

1. SYLLABUS

UNIT I

Environmental Science : Definition, Scope, Need and Importance of environmental studies. Concept of environmental education, Historical background of environmental education, Celebration of various days in relation with environment.

UNIT II

Plastic recycling & probation of plastic bag / cover. Role of school in environmental conservation and sustainable development.

UNIT III

Natural Resources and related environmental issues: Water resources, food resources and Land resources.

UNIT IV

Definition, effects and control measures of Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, Thermal Pollution. Management of environment and Govt. policies , Role of pollution control board.

UNIT V

People and Environment: People and environment interactions, Sources of pollution, Pollutants and their impact on human life, exploitation of natural and energy resources, Natural hazards and mitigation.

Text Book

1. Agrawal, K.C. (2001). *Environmental biology*.Bikaner: Nidhi publishers Ltd.
2. Frank, H. &Walter, H., (1976). *Turners school health education*. Saint Louis: The C.V. Mosby Company.
3. Nemir, A. (n.d.). The school health education. New York:Harber and Brothers.
4. Odum, E.P. (1971). *Fundamental of ecology*. U.S.A.: W.B. Saunders Co.

2. **COURSE OUTCOME students are able to**

CO-1	Able to promote good practice to promote and preserve environment
CO-2	Able to create awareness on health problems due to environmental pollution
CO-3	Able to explain importance of environment and to create good environment.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2							3	1	
2		2	3		1		2	1		
3	2		1	1		2				

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	
2	1	2
3	1	3

PART-IV-ABILITY ENHANCEMENT ELECTIVE COURSE

SOFT SKILLS

Instruction : 2 Hours / Week **Credits : 2** **Assessment : 50**

1. SYLLABUS

UNIT I

Soft Skills – Meaning**,** Definition, need and importance. Interview Skills – Preparing for an interview .Presentation Skills: Body Language - Speaking , Pronunciation , structuring of presentation, Group discussion :Skills in listening and expressing effectively.

UNIT II

Importance of Attitude: Meaning and Definition. Attitude and Success – Factors Determining Attitude . Benefits of Positive Attitude . Steps in Building Positive attitude. Comparison of Winners and Looses.

UNIT III

Success **:** Meaning and Definition. Qualities to make a person successful- Obstacles of Success- Methods to overcome Obstacles. Meaning and Definition- Values and Vision: Meaning and Definition –Judging value system – Change in value system- Character-Priceless-Life worth saving.

UNIT IV

Motivation: Meaning and Definition. Comparison of Inspiration and Motivation. Internal and External Motivation. Self Esteem: Meaning and Definition. Advantages of High Self Esteem. Causes of low self esteem. Building Confidence.

UNIT V

Inter- Personal Skills: Meaning and Definition. Life of Boomerang. Trust- Difference between ego and Pride. Steps in building Positive personality.

Subconscious Mind and Habits: Meaning and Definition. Good Habits -Formation of Habits- Conditioning – Forming Positive habits. .

Text Book

1. Authors Guide (2014)‘ Soft Skills’ University of Madras, Chennai
2. Authors Guide (2014) ‘ Communication Skills,” University of Madras, Chennai
3. Mangal .S.K. (2002) , Advanced Educational Psychology, Prentice Hall of India, New Delhi.
4. Shiv Khera (2006), You Can Win, Macmillan: New Delhi.

2. **COURSE OUTCOME students are able to**

CO-1	1. Developing the abilities need for better Soft skills
CO-2	Developing the skills required for attending interview and presentation skills.
CO-3	Understand and develops the qualities required for an individual development

3. **MAPPING’S OF CO’S AND PO’S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		2					3	1	
2	2	2	3		1		2	1		
3			1	1		2				3

4. **MAPPING’S OF CO’S AND PSO’S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	
2		1
3	1	3

PART-IV- SKILL ENHANCEMENT COURSES

OBESITY AND WEIGHT MANAGEMENT

Instruction : 2 Hours / Week **Credits : 2** **Assessment : 50**

1. SYLLABUS

UNIT I

Obesity – Introduction – Definition – Epidemiology – Prevalence – Incidence – fax variance- Etiology of obesity – Psychological correlation – Genesis influence. Types of Obesity – Android Obesity – Gyneoid obesity, Pathophysiology of obesity-Compilations of obesity

UNIT II

Assessment of obesity – Health related Quality of life assessment - Body composition Assessment – Laboratory methods, fields method - Clinical evaluation of obesity. Basics of Body composition: Definition, Meaning and Need. Methods of measurements- skin fold measurements – Circumference measurements – Body composition Assessment and Report. Skin fold measurement techniques: Sites of measurement . Calculation of Body percent Fat.

UNIT III

Weight Management: Meaning, Concept of Weight Management in the Modern Era – Factors affecting Weight Management and Values of Weight Management - Maintaining a Healthy Life Style - Body Mass Index (BMI)

UNIT IV

Planning of Weight Management: Determination of Desirable Body Weight – Daily Caloric Intake and Expenditure – Balanced Diet for Indian School Children – Weight Management Programme for Sporty Children – Role of Diet and Exercise in Weight Management – Diet Plan and Exercise Schedule for Weight Gain and Loss.

UNIT V

Establish Desirable body weight. Best way to loose weight – unhealthy approaches to loose weight. Causes and Solution for overcoming Obesity. Myths of Spot Reduction and Weight Loss – Dieting and Exercise for Weight Control

Text Book

1. Allsen, P.E. J.M.Harrison and B.Vance(1989). Fitness for life: An individualized Approach. Dubuque,IA:Wm.C.Brown,
2. Edward T. Howley B. Don Franks (2003) Health Fitness Instructors Hand book, Human Kinetics, Canda.
3. E.T. and Franks B.D. (1977) Health Fitness Instructor's handbook. Third Edition. Human Kinetics, Champaign Illinois
4. Rick Frey (Ed) (1995) Practical Body Composition Guide, Human Kinetics, Canada.
5. W.K. Hoeger and Sharon A. Hoeger (1990) Fitness and Wellness, Morton Publishing Company, Canada.

2. **COURSE OUTCOME students are able to**

CO-1	Able to Understand the basics of Obesity and its types .
CO-2	Able to Understand the various methods of Obesity assessment and weight management

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3		2		1	2		1	2	
2		1		1			2		3	1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2	1	2
3	1	3

PART-IV- SKILL ENHANCEMENT COURSES

SPORTS FIRST AID

Instruction : 2 Hours / Week **Credits : 2** **Assessment : 50**

1. SYLLABUS

UNIT I

Principles and practice of first aid for sports injuries – PRICE - aims of first aid - the responsibility of the first aider - action at emergency. ardiopulmonary resuscitation - CPR for adults - CPR for children's – rules of fist aid.

UNIT II

First aid techniques; dressing - types of dressing, application of dressing, bandages - types of bandages, tying the bandages - slings and its uses, different types of slings, applying the sling for different parts of the body according to the area.

UNIT III

First aid for different type of wounds, abrasions wound, incision wound, contused wound, lacerated wound, punctured wound and gun shot wound - Complications of wounds - Bleeding its types and its management - First aid for asphyxia.

UNIT IV

Fractures its types and its first aid management - First aid for fractures of spine, skull, collar bone, lower jaw, rib, humerus, forearm, hand, fingers, pelvis, femur, leg and foot - First aid for muscles and tendons injuries cramps, sprain and strain.

UNIT V

Care and prevention of sports injuries - protective equipments for sports - technical factors in overuse injuries. Emergency First aid Response, Emergency care of patient with suspected spinal cord injury.

Text Book

1. Authors Guide (2007) First aid to the injured, St.Johns Ambulance,Chennai.
2. Baker (2008): The Hughston Clinic Sports Medicine Book,
3. Williams ilkins Lillegard, Butcher & Rucker(2009) Handbook of Sports Medicine: A symptom Oriented Approach, Butterworth & Heinemann
4. Reed(2007) Sports Injuries – Assessment and Rehabilitation,
5. W.B.Saunders. Richard B. Birrer(2005) Sports Medicine for the primary care Physician, CRC Press

2. **COURSE OUTCOME students are able to**

CO-1	Able to understand the concepts of First Aid.
CO-2	Able to do various bandages and wounds
CO-3	Able to identify and recognize possibilities of sports Injuries and its management

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1		2	3				1		2	3
2	2			3	1			2		
3		1	1					3		2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	1	2
3	2	1

****

SYLLABUS, COURSE OUTCOMES AND MAPPING (CO's and PO's) & (CO's and PSO's)

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

DEPARTMENT OF PHYSICAL EDUCATION

M.P.ED DEGREE PROGRAMME

MASTER OF PHYSICAL EDUCATION (M.P.Ed)

PROGRAM EDUCATIONAL OUTCOMES (PEOS)

PEO-1) The Master of Physical Education(M.P.Ed.) Progremme is a professional Programme meant for preparing physical education teacher for high school (classes I to X) level.

PEO-2) The curriculum and syllabus have been structured in such a way that each of the course meets one or more of the outcomes related to the skills, knowledge, and behaviors that students acquire as they progress through the program. Further, each course in the program spells out clear instructional objectives which are mapped to the student outcomes.

PROGRAMME OUTCOMES

PO-1) Domain knowledge: Apply the knowledge of basic sciences that may be relevant and appropriate to physical education and sports sciences leading to solution of complex sports related issues and problems.

PO-2) Problem analysis: Ability to Identify, define the actual requirements, formulate, research literature, and analyze complex physical education and sports sciences related problems to reaching substantiated conclusions.

PO-3) Design/Development of Solutions: Ability to design, implement, and evaluate process or program to meet desired needs in the field of physical education and sport sciences.

PO-4) Individual and team work: Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings to accomplish a common goal.

PO-5) Ethics: Understanding of professional, ethical, legal, security, social issues and responsibilities in teaching, learning and evaluation.

PO-6) Communication: Ability to communicate effectively among a range of audiences/ stakeholders

PO-7) Impact: Ability to analyze the local and global impact of physical activities and sports and games on individuals, organizations and society.

PO-8) Professional Development: Recognition of the need for and an ability to engage in continuing professional development.

PO-9) Identification of Needs: Ability to identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of physical education and sport sciences programs.

PO-10) Integration: Ability to incorporate effectively integrate Science/Technology/ IT-based solutions to applications

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X	X	X	X	X	X	X	X	X	X
PE0-2	X			X	X	X		X	X	X

CORE PAPER - I

RESEARCH PROCESS IN PHYSICAL EDUCATION AND SPORTS SCIENCES

Learning Objectives

1. Gain knowledge about research in the field of physical education
2. To understand the concept of sample and population
3. To testing the existing theories/trainings methods
4. To develop systematic and scientific approach in finding solutions for the questions.

UNIT I

Meaning and Definition of Research - Need, Nature and Scope of research in Physical Education. Classification of Research: Basic Research, Applied Research, Action Research. Location of Research Problem - Criteria for selection of a problem. Qualities of a good researcher.

UNIT II

Meaning and Definition of Historical Research - Steps in Historical Research - Sources of Historical Research. Primary Data - Secondary Data - Historical Criticism: Internal Criticism, External Criticism. Descriptive Methods of Research**:** Survey Study - Case study - Normative Study.

UNIT III

Meaning and Definition of Hypothesis. Formulation, types and testing of Hypothesis. Experimental Methods of Research: Meaning of variable - Types of Variables - Nature and meaning of experimental Research. Types of Experimental

Design: Single Group Design, Reverse Group Design, Repeated Measure Design, Static Group Comparison Design, Equated Group Design, Factorial Design.

UNIT IV

Meaning and Definition of Sample and Population. Sampling – Process and techniques. Types of Sampling: Probability Methods : Systematic Sampling,Cluster sampling, Stratified Sampling. Area Sampling- Multistage Sampling. Non – Probability Methods: Convenience Sample, Judgment Sampling, Quota Sampling.

UNIT V

Chapterization of Thesis/ Dissertation: Front Materials, Body of the Thesis- Back materials. Method of Writing Research proposal, Thesis/ Dissertation. Method of writing abstract and full paper for presenting in a conference and to publish in journals. Mechanics of writing Research Report – Method of writing bibliography for books, journals, unpublished thesis and web resources.

Learning outcomes

1. Identify the research problem in the field of physical Education and sports
2. Know to Summarize the various research literature
3. Understand and apply the basics of statistics in research.
4. Organize the samples and sampling techniques which is relevant to the study.
5. Apply the systematic methods in writing research thesis

Peer Group Teaching and Discussion Concept

Group Discussion on Qualities of Good Researcher and Criteria for Selecting Good Research. Discussion with Research Problem: Selection of Samples, Variables, Tools and Report Writing.

REFERENCE

Best J. W (1971) Research in Education, New Jersey: Prentice Hall, Inc.

Clarke David.H& Clarke H, Harrison (1984) Research processes in Physical Education.

New Jersey : Prentice Hall Inc.

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Jerry R Thomas & Jack K Nelson(2000) Research Methods in Physical Activities. Illnosis : Human Kinetics;

Kamlesh, M.L. (1999) Research Methodology in Physical Education and Sports. New Delhi.

Moses, A.K..(1995) Thesis Writing Format. Chennai :PoompugarPathippagam.

Rothstain, A. (1985) Research Design and Statistics for Physical Education,

Englewood Cliffs : Prentice Hall, Inc.

Subramanian.R, Thirumalai Kumar S &Arumugam.C(2010) Research Methods in

Health, Physical Education and Sports. New Delhi: Friends Publication.

2. **COURSE OUTCOME students are able to**

CO-1	Know the origin and development of Physical Education
CO-2	Apply the knowledge of Olympism in organizing various sport activities
CO-3	Distinguish the functional operations on National and International Olympic Federations.
CO-4	Analyze the concepts and issues pertaining to Physical Education.
CO-5	Formulate the principles, philosophy and concepts about Physical Education

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		2	1	1		2	3		
2	2			3		2	1		1	
3	3		1		2		1		2	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2		
3	2	3

***

CORE PAPER II

YOGIC SCIENCES

Learning Objectives

1. To understand and apply the underlying concepts of Yoga
2. To promote knowledge and awareness of skeletal alignment and body mechanics, emphasizing a safe and intelligent use of the body
3. To cultivate breath control, relaxation techniques and kinaesthetic awareness

UNIT I

Principles, Philosophy and scope of Yoga. Yogic practices for various age groups.

Yoga – Values – Spirituality, Yogic practices for personality development. Loosening exercises**:** Techniques and benefits. Suryanamaskar: Vivekananda kendra Method and benefits . Asanas : Types – Advanced asanas and Benefits. Pranayama: Aspects of Pranayama - Methods and benefits. Nadis and Chakras: Major Chakaras - Benefits of clearing and balancing Chakras.

UNIT II

Shat Kriyas- Meaning, Techniques and Benefits of Neti-Dhauti- Kapalapathi-Trataka

- Nauli – Basti. Bandhas:Meaning, Techniques and Benefits of JalendraBandha, JihvaBandha, UddiyanaBandha, MulaBandha.

UNIT III

Mudras : Meaning, Techniques and Benefits of Hasta Mudras, Asamyuktahastam, Samyuktahastam, Mana Mudras, Kaya Mudras, Banda Mudras , Adhara Mudras . Meditation : Guidelines, Types:- Passive and active. Saguna Meditation and Nirguna Meditation, Techniques, Benefits.

UNIT IV

Yoga and Sports: Yoga Supplemental Exercises -Yoga Compensation Exercises-Yoga Regeneration Exercises- Power Yoga. Role of Yoga in Psychological Preparation of athlete: Mental Wellbeing, Anxiety, Stress, Depression, Concentration, Self Actualization.

UNIT V

Yoga for skill development, Yoga for performance enhancement of sports persons, Yoga management for sports injuries, Yoga for Leadership, Yogic Diet for Fitness and Hygiene.

Learning outcomes

1. Understand the basic Concepts of Yoga
2. Apply the principles of Yoga to live healthy and active life style.
3. Promote the awareness of health through yoga

Analyse the techniques and of body posture to bring out healthy change

5. Develop the knowledge through practice, participate and organize.

Peer Group Teaching and Discussion Concept

Group Discussion and Preparation for Yoga Day Celebration – Yoga Awareness Programme- Importance of Yogic Diet. Teaching Yogic Postures with simplified models developed by the students.

REFERENCE

Authors Guide (2015) , International Day of Yoga, Common Yoga Protocol, New Delhi: Ministry of AYUSH, Government of India.

George Feuerstein. (1975).Text Book of Yoga. London: MotilalBansaridass Publishers (P) Ltd.,

Gore. (1990). Anatomy and Physiology of Yogic Practices. Lonavala: KanchanPrkashan.

Helen Purperhart (2004) The Yoga Adventure for Children . Netherlands:A Hunter House Book.

Iyengar, B. K. S. (2000). Light on Yoga. New Delhi: Harper Collins Publishers.

Kuvalyananda Swami & S.L. Vinekar. (1963). Yogic Therapy – Basic Principles and Methods. New Delhi: Govt of India, Central Health Education and Bureau.

Kenghe. C.T. (1976). Yoga as Depth-Psychology and para-Psychology (Vol-I): Historical

Background, Varanasi: BharataManishai.

Moorthy .A.M &Alagesan. S. (2004).Yoga Therapy. Coimbatore: Teachers Publication House.

Swami SatyanandaSaraswathi. (1984). Kundalini and Tantra. Bihar: Yoga Publications Trust.

Swami Kuvalayananda. (1998). Asanas. Lonavla: Kaivalyadhama.

Swami SatyanandaSarasvati. (1989). Asana Pranayama Mudra Bandha. Munger: Bihar School of Yoga,

Swami Sivananda. (1971). The Science of Pranayama. Chennai: A Divine Life Society Publication,

Tiwari. O .P. (1998). Asanas-Why and How. Lonavla: Kaivalyadhama.

ThirumalaiKumar. S and Indira .S(2011) Yoga in Your Life, Chennai: The Parkar Publication.

2.	**COURSE OUTCOME students are able to**	
	CO-1	Understand the basic principles of Anatomy, Physiology and Health Education
	CO-2	Apply the knowledge in the field of physical education and movement activity.
	CO-3	Analyze the practical knowledge during the practical situation.
	CO-4	Remember and recall the definition of anatomy and physiology and co-relate the principles of physiology.
	CO-5	Appraise the effects of health condition during the training and practical sessions

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1	1				3	2	1
2	1						2	3		
3	2		3					1	2	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	2	3
3	1	1

***

CORE PAPER III

TESTS, MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION

Learning Objectives

1. Administer a variety of tests as they apply to physical education, health and fitness.
2. Analyse and evaluate various fitness movements
3. Conduct the research Study through test and measurement

UNIT I

Meaning and Definition of Test - Measurement and Evaluation. Need and Importance of Measurement and Evaluation. Criteria for Test Selection - Scientific Authenticity. Meaning, definition and establishing Validity, Reliability, Objectivity. Norms - Administrative Considerations.

UNIT II

Meaning and Definition of Motor Fitness. Test for Motor Fitness: Indiana Motor Fitness Test (For elementary and high school boys, girls, and College Men)- Oregon Motor Fitness Test (For boys and girls) –JCR Motor Fitness Test. Motor Ability : Meaning and Definition of Motor Ability, Barrow Motor Ability Test - Newton Motor Ability Test - Muscular Fitness : Kraus Weber Minimum Muscular Fitness Test.

UNIT III

Physical Fitness Test:AAHPERD Health Related Fitness Battery (revised in 1984), ACSM Health Related Physical Fitness Test, Roger's physical fitness Index. Cardio Vascular test: Harvard step test, 12 minutes run/walk test, Multi-stage fitness test (Beep test).

UNIT IV

Physiological Testing: Aerobic Capacity: The Bruce Treadmill Test Protocol, 1.5 Mile Run test for college age males and females. Anaerobic Capacity: Margaria-Kalamen Power test, Wingate Anaerobic Test, Anthropometric Measurements: Method of Measuring Height :

Standing Height, Sitting Height. Method of measuring Circumference: Arm, Waist, Hip, Thigh.

Method of Measuring Skin folds: Biceps,Triceps, Sub scapular, Suprailiac.

UNIT V

Specific Sports Skill Test: Badminton: Miller Wall Volley Test. Basketball: Johnson Basketball Test, Harrison Basketball Ability Test. Cricket : Sutcliff Cricket test. Hockey: Friedel Field Hockey Test, Harban's Hockey Test. Volleyball: Russel Lange Volleyball Test, Brady Volleyball Test. Football: Mor-Christian General Soccer Ability Skill Test Battery, Johnson Soccer Test , MC-Donald Volley Soccer Test. Tennis: Dyer Tennis Test.

Learning outcomes

1. Understand the Test, Measurement and Evaluation in physical education, Health and Fitness.
2. Know about the different types of test for different sports and games.
3. Apply the tests in minor research areas.
4. Analyse the performance and movements in the field of sports.
5. Evaluate the battery test and others tests prescribed by the government efficiently.

Peer Group Teaching and Discussion Concept

Group Discussion on Duties of Test Administration. Role Play as Tester and Subjects.

Teaching the above tests in the practical setting with peer students under the supervision of Teacher.

REFERENCE

Authors Guide (2013) ACSM's Health-Related Physical Fitness Assessment Manual, USA: ACSM Publications.

Baror, O (1987). "The Wingate Anaerobic Test: An Update on Methodology, Reliability and Validity". Journal of *Sports Medicine* 4: 381–394.

Barrow, H.M..& McGee, R.,A (1964.) Practical Approach to Measurement in Physical Education. Philadelphia: Lea and Febiger.

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Wilgoose, C.E (1967) Evaluation in Health Education and Physical Education, New York : McGraw Hill Book Company, Inc,

Yobu,A (2010), Test, Measurement and Evaluation in Physical Education and Sports, New Delhi: Friends Publications.

2. **COURSE OUTCOME students are able to**

CO-1	Understand the basic Concepts of Yoga
CO-2	Apply the principles of Yoga to live healthy and active life style.
CO-3	Promote the awareness of health through yoga
CO-4	Analyze the techniques and of body posture to bring out healthy change.
CO-5	Able to execute loosening exercise , Asanas, Pranayama and Shatkriyas.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3	1	3	1		1	2	3	2	1
2	1		2	3			1	3	2	
3	1		1	2	1	2		2		2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	2
2	3	1
3	1	

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CORE PAPER V

APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS

Learning Objectives

1. Gain knowledge about statistics
2. To testing the existing theories/trainings and modifying
3. To develop systematic and scientific approach
4. Ability to interpret the data's

UNIT I

Meaning and Definition of Statistics. Function, need and importance of Statistics. Types of Statistics. Meaning of the terms: Population, Sample, Data, Kinds of data. Variables: Discrete and Continuous. Parametric and non parametric statistics.

UNIT II

Meaning, uses and construction of frequency table. Meaning, Purpose, calculation and advantages of Measures of central tendency -Mean, median and mode.

UNIT III

Meaning, Purpose, Calculation and advantages of measures of variability: Range, Quartile Deviation, Mean Deviation, Standard Deviation and Probable Error. Meaning, Purpose, and Calculation of Scoring scales: Sigma scale, Z Scale, Hull scale, T Scale.

UNIT IV

Normal Curve: Meaning of probability - Principles of normal curve - Properties of normal curve. Divergence form normality – Skewness and Kurtosis. Graphical Representation in Statistics: Line Diagram, Pie diagram, Bar diagram, Histogram, Frequency Polygon, Ogive Curve.

UNIT V

Tests of significance: Independent "t" test, Dependent "t' test - Chi - square test, level of confidence and interpretation of data. Meaning of Correlation - Co-efficient of Correlation - calculation of co-efficient of correlation by the product moment method and rank difference method . Concept of ANOVA and ANCOVA.

Learning outcomes

1. Understand and apply the statistics in research.
2. Organize the samples and sampling techniques which is relevant to the study.
3. Apply the statistics in research thesis for evaluation

Peer Group Teaching and Discussion Concept

Group Discussion on need and Importance of Statistics in Physical Education. Discussion on application of apt statistical technique. Discussion on testing the Hypothesis.

REFERENCE

Best, J.W. (1971) Research in Education, Englewood Cliffs,: Prentice Hall.

Clark, D.H. (1999) Research Problem in Physical Education 2nd edition, Eaglewood Cliffs:Prentice Hall, Inc.

Jerry R Thomas & Jack K Nelson(2000) Research Methods in Physical Activities, Illinois : Human Kinetics.

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Thirumalaisamy .R(1998), Statistics in Physical Education. Karaikudi: Senthilkumar Publishers.

2. **COURSE OUTCOME students are able to**

CO-1	Understand training as performance based science
CO-2	Explain different means and methods of various training
CO-3	Prepare training schedule for various sports and games
CO-4	Appraise types of periodization for performance development
CO-5	Create various training facilities and plans for novice to advance performers

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1	2	3				1	2	1	3
2		3	2	1	1	1				
3	1	3	3	2			2		1	3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2	2	
3	2	3

***

CORE PAPER VI

SPORTS BIOMECHANICS AND KINESIOLOGY

Learning Objectives

1. Know the scientific principles of body movements
2. Know the mechanical analysis of sports
3. Know the importance of kinesiology and biomechanics to Physical Education teacher, athletes and coaches.

UNIT I

Meaning, nature, scope and role of Applied Kinesiology and Sports Biomechanics. Joints and their Movements - Planes and axes. Meaning of Dynamics, Kinematics (linear and angular), Kinetics, Statics Centre of gravity - Line of gravity, plane of the body and axis of motion, Vectors and Scalars.

UNIT II

Origin, insertion and action of muscles: Pectoralis major and minor, Deltoid, Biceps, Triceps (Anterior and Posterior), Trapezius, Seratus, Sartorius Rectus femoris, Rectus Abdominous, Quadriceps, Hamstring, Gastronemius. Posture, Postural deformation and Corrections. Muscular analysis of Motor Movements.

UNIT III

Meaning and definition of Motion. Types of Motion: Linear motion, angular motion, circular motion, uniform motion. Law of acceleration, Principles related to the law of Inertia, Law of acceleration, Law of counter force. Meaning and definition of force - Sources of force - Force components - Force applied at an angle - pressure - friction – Buoyancy, Spin - Centripetal force - Centrifugal force.

UNIT IV

Freely falling bodies - Projectiles - Equation of projectiles stability. Principles of Equilibrium, and force, spin and elasticity. Factors influencing equilibrium - Guiding principles for stability - static and dynamic stability. Meaning of work, power, energy, kinetic energy and potential energy. Leverage – classes of lever - practical application. Water resistance - Air resistance- Aerodynamics.

UNIT V

Analysis of Movement: Types of analysis: Kinesiological, Biomechanical. Cinematographic. Methods of analysis – Visual, Instrument. Mechanical Analysis of various sports activities: Walking, Running, Jumping, Throwing, Pushing, Pulling Lifting, Catching, Hitting, Spiking, Kicking,. Analysis of skill/ techniques of games: Basketball, Cricket, Football, Hockey, Volleyball, Track and Field , Swimming and Gymnastics.

Learning outcomes

1. Identify biomechanical, health, physiological, and psychological limitations to and interventions for improving physical performance.
2. Analyse and explain the mechanisms underlying biomechanical, physiological, and psychological changes that occur during after acute and chronic exercise.
3. Develop physical conditioning programs based on scientific principles designed to develop physical fitness and improve athletic performance.
4. Understand mechanical principles can be applied to the analysis of human movement to assess and improve performance and reduce risk of injury.
5. Know effectiveness of human movement using mechanical principles.

Peer Group Teaching and Discussion Concept

Preparation of Models fro teaching origin, insertion and actions of Muscle. Discussion on Biomechanical Principles involved in fundamental movements and Game Skill Variables.

REFERENCE

Anthony Blazevich (2007) Sports Biomechanics the Basics: Optimising Human Performance London: A& C Black publishers ltd.

Bunn, J.G(1972) Scientific Principles of Coaching, (2nd Ed) New Jersey: Prentice Hall Inc.

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Hay, J. G. (1985) Biomechanics of Sports Techniques New Jersey: Prentice Hall,

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Rita Jain. (2006). Atlas of Human Body. New Delhi: Sports Publication.

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Steven Roy., & Richard Irvin. (1983). Sports Medicine. New Jersey: Prentice hall Inc.

Thomas. (2001). Manual of Sstructural Kinesiology. New York: Me GrawHill .

Uppal, A. (2004). Kinesiology in Physical Education and Exercise Science. Delhi: Friends publications.

Williams M (1982) Biomechanics of Human Motion, Philadeiphia: Saunders Co.

2. **COURSE OUTCOME students are able to**

CO-1	Understand the principles and process of Administration and Management
CO-2	Administer physical education and sports programs in schools.
CO-3	Develop appropriate physical education curriculum, tools and budget to manage school programs
CO-4	Appraise and manage physical education facilities and personnel in school
CO-5	Design tournament fixtures and structures to organize competitions

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3	1	1			3		2
2	2	3	1			1	2			
3	1		2				1		2	1

4.	**MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2	2	1
3	1	3

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CORE PAPER VII

SPORTS PSYCHOLOGY AND SOCIOLOGY

Learning Objectives

1. To know and to understand the sportsmen behaviour.
2. To know the various psychological factors affecting sport performance.
3. To know the relationship of the sports person with society in various sports settings.

UNIT I

Meaning, Definition, History, Need and Importance of Sports Psychology. Present Status of Sports Psychology in India. Motor Learning: Basic Considerations in Motor Learning

– Motor Perception - Factors Affecting Perception – Perceptual Mechanism. Personality: Meaning, Definition, Structure – Measuring Personality Traits. Effects of Personality on Sports Performance.

UNIT II

Meaning, Method of Measuring of Achievement Motivation. Anxiety: Meaning and Definition, Nature, Causes, Method of Measuring Anxiety. Competitive Anxiety and Sports Performance. Stress: Meaning and Definition, Causes. Stress and Sports Performance. Aggression: Meaning and Definition, Method of Measurement. Aggression and Sports Performance. Self Concept: Meaning and Definition, Method of Measurement. Personality: Dimensions, theories. Personality and performance.

UNIT III

Goal Setting: Meaning and Definition, Process of Gaol Setting in Physical Education and Sports. Relaxation : Meaning and Definition, types and methods of psychological relaxation. Psychological Tests: Types of Psychological Test: Instrument based tests: Pass-along test – Tachistoscope - Reaction timer - Finger dexterity board - Depth perception box - Kinesthesiometer board. Questionnaire: Sports Achievement Motivation, Sports Competition Anxiety. Psychological factors ,Stress, Anxiety, Tension and Aggression affecting Sports Performance.

UNIT IV

Sports Sociology: Meaning and Definition – Sports and Socialization of Individual Sports as Social Institution. National Integration through Sports. Sociological basis of Physical Education: Socialization process, Social nature of men and physical activity, sports

as cultural heritage of mankind, customs, traditions and sports, competition and cooperation. Leadership: Meaning, Definition, types. Leadership and Sports Performance.

UNIT V

Group: Definition and Meaning, Group Size, Groups on Composition, Group Cohesion, Group Interaction, Group Dynamics. Current Problems in Sports and Future Directions – Sports Social Crisis Management - Women in Sports: Sports Women in our Society, Participation pattern among Women, Gender inequalities in Sports. Sociometrics, economics and politics in sports

Learning outcomes

1. Explain group mechanisms and group psychology in a sports context
2. Reflect upon motivational psychology as applied to sports activities
3.Formulate relevant constructs of exercise psychology
4.Demonstrate the ability to discuss sociological theories, concepts, and ideas in large and small groups and to express empirically as well as theoretically-based opinions.

5. To apply core sociological theories to specific social problems in order to analyse social problems.

Peer Group Teaching and Discussion Concept

Group Discussion on Role of Sports Psychology. Role Play as Player, Coach, and Psychologist. Group Discussion on: Current Problems in Sports and Future Directions – Sports Social Crisis Management -Gender inequalities in Sports.

REFERENCE

Authors Guide (2013) National Library of Educational and Psychological Test (NLEPT) Catalogue of Tests, New Delhi: National Council of Educational Research and Training Publication.

Jay Coakley. (2001). Sports in Society - Issues and Controversies in International Education, Mc-Craw Seventh Ed.

John D Lauther (2000) Psychology of Coaching. NerJersy: Prenticce Hall Inc.

Jain. (2002), Sports Sociology, Heal SahetyKendre Publishers.

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Richard, J. Crisp. (2000). Essential Social Psychology. Sage Publications.

Robert N. Singer(2001). Motor Learning and Human Performance. New York: The Macmillan Co.

Robert N. Singer. (1989) The Psychology Domain Movement Behaviour. Philadelphia: Lea and Febiger.

Thelma Horn. (2002). Advances in Sports Psychology. Human Kinetic.

Whiting, K, Karman.,. Hendry L.B & Jones M.G..(1999) Personality and Performance in

2. **COURSE OUTCOME students are able to**

CO-1	Understand the principles and process of Administration and Management
CO-2	Administer physical education and sports programs in schools.
CO-3	Develop appropriate physical education curriculum, tools and budget to manage school programs
CO-4	Appraise and manage physical education facilities and personnel in school
CO-5	Design tournament fixtures and structures to organize competitions

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3	1	1			3		2
2	2	3	1			1	2			
3	1		2				1		2	1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2	2	1
3	1	3

***

CORE PAPER IX

SPORTS MEDICINE, ATHLETIC CARE AND REHABILITATION

Learning Objectives

1. By learning the subject the students will be aware of the various injury in sports.
2. The students after learning will gain knowledge about the treatment of various injury in sports.
3. After completion of this subject the students will learn how to give rehabilitation.
4. This subject will also make the student learn about prevention of injuries.

UNIT I

Sports Medicine: Meaning and Definition. History, Need and Importance. Types of Exercises: Therapeutic exercise, coordination exercises, balance exercises, strength exercise, gym ball exercise and gait training and exercises. Principles to be followed for prescribing exercises. Sports Injuries: Definition, Types of Injuries, signs and symptoms. RICER and PRICER: Advantages and disadvantages. Aquatic therapy: Definition, benefits and uses. Posture: Definition, types of Abnormal posture: Lordosis, Scoliosis and Kyphosis. Corrective Exercise for Lordosis, Scoliosis and Kyphosis.

UNIT II

Rehabilitation: Meaning and Definition. Stretching: Definition, Types of Stretching: Static Stretching, Passive Stretching, Dynamic Stretching, Ballistic Stretching, Active Isolated (AI) Stretching, Isometric Stretching and Proprioceptive Neuromuscular Facilitation. PNF techniques, Pattern, Methods - Advantages of Stretching and Disadvantages of Stretching. Manual Muscle Testing: Muscular strength, Muscular endurance, Range of muscle work.

UNIT III

Head Injury: Explanation, causes, Types, Symptoms, Treatment for unconscious and conscious persons. Neck and Spine Injuries- causes. Cervical Fracture: Symptoms and signs, Classification of cervical Spinal injuries - Emergency First aid Response, Emergency care of patient with suspected spinal cord injury. Prevention of Cervical Fracture. Supportive and aids

for Head neck and spine injuries and its prevention. Massage Therapy Treatments Classification- Exercise for Neck and Back.

UNIT IV

Common Shoulder Injuries: Instability, Impingement, Rotator Cuff Injuries.-Common Elbow Injuries, Common wrist Injuries- Acute Traumatic Injuries, Chronic Injury.-Fractured rib- Definition, Signs & symptoms, Treatment- Breathing exercises. Relaxation Exercises to Reduce Stress, Anxiety, and Depression. Rotator Cuff and Shoulder Conditioning Program. Wrist and Elbow Strengthening and Stretching Exercises. Hand and Fingers Strengthening and Stretching Exercises. Supports for Upper Limb and Chest

UNIT V

Lower Limb and Abdomen Injuries. Mechanism of Injury, Signs & Symptoms and, Treatment of Hip -Adductor Stain- Hip joint dislocations- Knee-Medial collateral ligament injury-Lateral collateral ligament injury - Anterior cruciate ligament rupture-. Ankle- Lateral ankle ligament injuries- Medial ankle ligaments injuries- Lateral ankle ligaments injuries- Abdominal Wall Injuries - Rehabilitation of Abdominal Wall Injuries. Exercises to lower limb. Supporting and protecting aids to Lower limb. Sports Shoe- types. Importance and role of physiotherapy in sports.

Learning outcomes

1. Understand the primary responsibilities the sports trainer has in preventing sports injuries and providing initial care for injured athletes.

2. Demonstrate the basics of sport first aid during and after game situation.

3. Recognise and appropriately treat common sports injuries and conditions from onset through rehabilitation.

4. Identify and apply knowledge of anatomy to the design and execution of research studies.

Peer Group Teaching and Discussion Concept

Discussion on primary responsibilities the sports trainer has in preventing sports injuries and providing initial care for injured athletes. Role Play as Injured Athlete and Rehabilitation Facilitator under the supervision of Teacher.

REFERENCE

Christopher M. Norris. (1993). Sports Injures Diagnosis and Management for Physiotherapists. East Kilbride: Thomson Litho Ltd.

James, A. Gould & George J. Davies. (1985). Physical Therapy. Toronto: C.V. Mosby ompany.

Morris, B. Mellin. (1989). Sports Injuries and Athletic Problems.New Delhi: Surjeet Publication.

Pande. (1998). Sports Medicine.New Delhi: KhelShitya Kendra

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2.	**COURSE OUTCOME students are able to**	
	CO-1	Understand the basics of Test, Measurement and Evaluation in physical education, Health and Fitness.
	CO-2	Know about the different types of test for different sports and games.
	CO-3	Apply the tests in minor research areas
	CO-4	Analyze the performance and movements in the field of sports.
	CO-5	Evaluate the battery test and others tests prescribed by the government efficiently
3.	**MAPPING'S OF CO'S AND PO'S**	

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3		1				1	3	2	
2	2	1		2			3	1		
3		2	3			1			2	3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	2	1
3	1	2

***

CORE PAPER X

PHYSIOLOGY OF EXERCISE

Learning Objectives

1. Understand basic knowledge of Physiology of Human body
2. Implement the knowledge in the field of physical Education
3. Demonstrate practical knowledge of basic scientific facts and principles underlying normal body structure and function

UNIT I

Skeletal Muscle and Exercise: Structure of the Skeletal Muscle, Chemical Composition. Sliding Filament Theory of Muscular Contraction . Types of Muscle Fiber. Muscle Tone, Chemistry of Muscular Contraction – Heat Production in the Muscle. Physiology of Muscular Activity, Neurotransmission and Movement mechanism, Effect of exercises and training on the muscular system.

UNIT II

Cardiovascular System and Exercise: Heart Valves and Direction of the Blood Flow - Conduction System of the Heart - Blood Supply to the Heart - Cardiac Cycle - Stroke Volume - Cardiac Output - Heart Rate - Factors Affecting Heart Rate - Cardiac Hypertrophy - Effect of exercises and training on the Cardio vascular system.

UNIT III

Respiratory System and Exercise: Physiology of Respiration, Mechanism of Breathing - Respiratory Muscles and Training. Minute Ventilation - Ventilation at Rest and During Exercise. Diffusion of Gases - Exchange of Gases in the Lungs - Exchange of Gases in the Tissues - Control of Ventilation - Ventilation and the Anaerobic Threshold. Oxygen Debt - Lung Volumes and Capacities - Effect of exercises and training on the respiratory system.

UNIT IV

Metabolism and Energy Transfer: Metabolism - ATP - PC or Phosphogen System - Anaerobic Metabolism - Aerobic Metabolism - Aerobic and Anaerobic Systems During Rest and Exercise. Short Duration High Intensity Exercises - High Intensity Exercise Lasting Several Minutes - Long Duration Exercises. Glycolysis. Bioenergetics and recovery process

UNIT V

Climatic conditions and sports performance: Variation in Temperature and Humidity - Thermoregulation – Sports performance in hot climate, Cool Climate, high altitude. Factors influencing performance in Sports, Ergogenic aids and doping. Influence of Anabolic steroids, Androstenedione ,Beta Blocker, Choline, Creatine, Human growth hormone on sports performance. Narcotic, Stimulants: Amphetamines, Caffeine, Ephedrine, Sympathomimetic amines. Stimulants and sports performance.

Learning outcomes

1. Understand the basic principles of physiology and Exercise Physiology
2. Apply the knowledge in the field of physical education and movement activity.
3. Analyze the practical knowledge during the practical situation.
4. Remember and recall the definition of physiology and co-relate the principles of physiology.
5. Appraise the effects during the training and practical sessions

Peer Group Teaching and Discussion Concept

Discussion on physiological adaption on various systems of the body due to exercises. Discussion on Energy Transfer - Stimulants and sports performance.

REFERENCE

Amritkumar, R, Moses. (1995). Introduction to Exercise Physiology. Madras: PoompugarPathipagam.

Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.

David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics.

SandhyaTiwaji. (1999). Exercise Physiology. Sports Publishers.

Fox, E.L., and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.

Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co.

Richard, W. Bowers. (1989). Sports Physiology. WMC: Brown Publishers.

Shaver, L. (1981). Essentials of Exercise Physiology. New Delhi: Subject Publications.

Vincent, T. Murche. (2007). Elementary Physiology . Hyderabad: Sports Publication.

William, D. McAradle. (1996). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams and Wilkins Company.

2. **COURSE OUTCOME students are able to**

CO-1	Identify the research problem in the field of physical Education and sports
CO-2	Know to Summarize the various research literature
CO-3	Understand and apply the basics of statistics in research.
CO-4	Organize the samples and sampling techniques which is relevant to the study
CO-5	Appraise the effects during the training and practical sessions

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		2	1			2	3		
2	2		2		1	2		3		2
3	1	2			1				2	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	1	2
3		

***

CORE PAPER XI

SCIENTIFIC PRINCIPLES OF SPORTS TRAINING

Learning Objectives

1. Understand the scientific principles of sports training.
2. Fix and adopt the training load
3. Prepare the sports person for the competition

UNIT I

Sports training:Definition. Aim, Characteristics, Principles of Sports Training. Over Load: Definition, Causes of Over Load, Symptoms of Overload. Remedial Measures - Super Compensation- Altitude Training-Cross Training. Technical and Tactical Preparation for Sports.

UNIT II

Physical Fitness Components: Strength:Methods to improve Strength: Weight Training, Isometric, Isotonic, Circuit Training. Speed:Methods to Develop Speed: Repetition Method, Downhill Run, Parachute Running, Wind Sprints. Endurance:Methods to Improve Endurance: Continuous Method, Interval Method, Repetition Method, CrossCountry, Fart lek Training.

UNIT III

Flexibility:Methods to improve the Flexibility- Stretch and Hold Method, Ballistic Method. Special Type Training: Plyometric Training. Training for Coordinative Abilities:Methods to improve Coordinative abilities: Sensory Method, Variation in Movement Execution Method, Variation in External Condition Method, Combination of Movement Method. Types of Stretching Exercises.

UNIT IV

Training Plan:Macro Cycle, Meso Cycle, MicroCycle. Short Term Plan and Long Term Plans. Periodisation:Meaning, Single, Double and Multiple Periodisation.

Preparatory Period, Competition Period and Transition Period. Principles of Motor- Skill Acquisition, Transfer of Training Effects. Sports Talent Identification- process and Procedures.

UNIT V

Definition of Doping – Side effects of drugs- Dietary supplements - IOC list of doping classes and methods. Blood doping - The use of erythropoietin in blood boosting - Blood doping control- The testing programmes - Problems in drug detection - Blood testing in doping control - Problems with the supply of medicines subject to IOC regulation : over-the-counter drugs (OTC) - prescription only medicines (POMs)- Controlled drugs (CDs).Reporting test results.

Learning outcomes

1. Understand training as performance based science
2. Explain different means and methods of various training
3. Prepare training schedule for various sports and games
4. Appraise types of periodization for performance development
5. Create various training facilities and plans for novice to advance performers

Peer Group Teaching and Discussion Concept

Group Discussion on Training Load of Elite Athletes - Preparation of Training Schedules for Game of their Choice. Preparation of Exercise for Demonstration with Training Gadgets.

REFERENCE

Bunn, J.N. (1998) Scientific Principles of Coaching. New Jersey: Engle Wood Cliffs.Prentice Hall Inc.

Cart, E. Klafs. & Daniel, D. Arnheim.(1999) Modern Principles of Athletic Training. St.Louis: C.V. Mosphy Company.

Daniel, D. Arnheim. (1991). Principles of Athletic Training. St.Louis: Mosby Year Book.

David R.Mottram (1996) Drugs in Sport, School of Pharmacy. Liverpool: John Moores University.

Gary, T. Moran. (1997). Cross Training for Sports. Canada: Human Kinetics.

Hardayal Singh. (1991). Science of Sports Training. New Delhi: DVS Publications.

Jensen, C.R.,&Fisher,A.G.(2000) Scientific Basic of Athletic Conditioning. Philadelphia.

Ronald, P. Pefiffer. (1998). Concepts of Athletic Training, 2nd Edition. London: Jones and Bartlett Publications.

YograjThani. (2003). Sport s Training . Delhi: Sports Publications.

2. **COURSE OUTCOME students are able to**

CO-1	Know sports management and employ principles of strategic planning, and financial and human resource management.
CO-2	Assess marketing needs and formulate short term and long term solutions.
CO-3	Develop critical thinking in analysing sport management issues and in managerial planning and decision making.
CO-4	Able to organize recreational camp and activities

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		3		1	1	2		2	
2	3			2			1	3	1	
3		2	3	1				2	1	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	
2	3	1
3	2	1

***

CORE PAPER XIII

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN PHYSICAL EDUCTION

Learning Objectives

1. To know the necessity of information and communication technology in physical education
2. Helps to improves the computer assisted works in sports
3. Able use the applications of computer in sports

UNIT I

Communication and Classroom Interaction: Concept, Elements, Process and Types of Communication, Communication Barriers and Facilitators of communication, Communicative skills of English - Listening, Speaking, Reading and Writing, Concept and Importance of ICT Need of ICT in Education and Physical Education. Scope of ICT: Teaching Learning Process, Publication Evaluation, Research and Administration Challenges in Integrating ICT in Physical Education

UNIT II

Fundamentals of Computers :Characteristics, Types and Applications of Computers Hardware of Computer: Input, Output & Storage Devices .MS Office Applications: MS Word: Main Features & its Uses in Physical Education. MS Excel: Main Features &its Applications in Physical Education. MS Power Point: Preparation of Slides with Multimedia Effects. MS Publisher: Newsletter & Brochure

UNIT III

ICT Integration in Teaching Learning Process. Approaches to Integrating ICT in Teaching Learning Process. Project Based Learning (PBL). Co-Operative Learning. Collaborative Learning. ICT and Constructivism: A Pedagogical Dimension. E-Learning & Web Based Learning. E-Learning. Web Based Learning. Visual Classroom.

UNIT IV

Using Computers in Physical Education**:** Research, Biomechanics, Exercise Physiology, Motor Learning, Sports Psychology. – Analyzing the data using statistics in Spread Sheet: Concept and Calculation of Mean, Standard Deviation, "t" test, Correlation.

UNIT V

SPSS Package:Introduction, Feeding Data, Naming the variables, Grouping the Data. Computation of Descriptive Statistics, Correlated and Uncorrelated "t" ratio, Analysis of Variance, Co-efficient of Correlation.

Course Outcome

1. Understand concept of information and communication technology in physical education field
2. Analyse sporting data of various types via astute use of statistical packages.
3. Practice mathematics, statistics, information technology in sport technology related problems.
4. Offer Hands on Knowledge in information and communication Technology

Peer Group Teaching and Discussion Concept

Teaching the selected area of subject using the ICT gadgets – Discussion on Merits and Demerits of various methods of Teaching. Encouraged to Prepare Teaching Aids from Waste Products. Hand on experience in the ICT lab.

REFERENCE

Ram B(2006), New Age International Publication, Computer Fundamental, Third Edition.

Brain under IDG Book. India (p) Ltd Teach Yourself Office 2000, Fourth Edition-2001

Douglas E. Comer (2005), The Internet Book, Purdue University, West Lafayette.

Heidi Steel Low price Edition, Microsoft Office Word 2003- 2004.

Research and Development Wing (2006) ITL Education Solution Ltd. Introduction to information Technology,

Pradeep K. Sinha &Priti; (2006) Sinha, Foundations computing BPB Publications .

Rebecca (1999)Bridges Altman Peach pit Press, Power point for window.

Sanjay Saxena, (2006) Vikas Publication House, Pvt. Ltd. Microsoft Office for everone, Second Edition.

2. **COURSE OUTCOME students are able to**

CO-1	Know the fundamental of all the games and sports
CO-2	Understand the rules of all the games and sports
CO-3	Preparing the students for the competition
CO-4	Classify the students accordingly for various games and sports
CO-5	Design and practice the new methods of technique and training.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3		1			2	1	2
2		2	1					1		3
3	1	3	1		1	1	2			2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2		
3	2	1

***

CORE PAPER XIV

SPORTS MANAGEMENT AND CURRICULUM DESIGN IN PHYSICAL EDUCATION

Learning Objectives

1. To identify the basic principles of Sports Management.
2. To know about organizational management and leadership.
3. To identify important issues and future trends in the field of sports management
4. Understand curriculum according to the needs of the students
5. Construct the curriculum for various levels
6. Update the present need which is mandatory

UNIT I

Management: Concept and Principles of Management. Sports Management: Definition, Importance. Basic Principles and Procedures of Sports Management. Functions of Sports Management. Personal Management: Objectives of Personal Management, Personal Policies.

UNIT II

Management of infrastructure, equipment, finance and personnel. Programme Management: Factors influencing programme development. Organisation and Functions of Sports bodies**.** Competitive Sports Programs, Benefits, Management Guidelines for School, College Sports Programs, Management Problems in instruction programme, Community Based Physical Education and Sports program. Maintenance of Records and Registers as per Department of School Education requirements.

UNIT III

Purchase and Care of Supplies of Equipment: Guidelines for selection of Equipments and Supplies, Purchase of equipments and supplies, Equipment Room, Equipment and supply Manager. Guidelines for checking, storing, issuing, care and maintenance of supplies and equipments. Public Relations in Sports: Planning the Public Relation Program - Principles of

Public Relation - Public Relations in School and Communities - Public Relation and the Media. Professional Ethics.

UNIT IV

Curriculum: Meaning and Definition of Curriculum. Principles of Curriculum Construction: Students centred, Activity centred, Community centred, Forward looking principle, Principles of integration. Approaches to Curriculum : Subject centred, Learner centred and Community centred, Curriculum Framework. Application of Idealism, Naturalism, Realism, Pragmatism, Existentialism, Humanism in Physical Education. Course content for academic and professional courses.

UNIT V

Factors affecting curriculum: Sources of Curriculum materials – text books – Journals – Dictionaries, Encyclopedias, Magazines, Internet. Integration of Physical Education with other Sports Sciences – Curriculum research, Objectives of Curriculum research – Importance of Curriculum research. Method of Evaluation of Curriculum.

Course Outcome

1. Know sports management and employ principles of strategic planning, and financial and human resource management.
2. Assess marketing needs and formulate short term and long term solutions.
3. Conceive, plan, execute, and evaluate a sports event.
4. Introduce the teaching and curriculum objectives and course module design
5. Analyse the planning strategies, teaching, learning and assessment
6. Develop strategies to promote quality learning, practice marking and consider methods of course and self-evaluation

7. Evaluating learning intentions and the process that is guided through explicit and manageable criteria

Peer Group Teaching and Discussion Concept:

Discussion on strategic planning, and financial and human resource management. Preparation of Curriculum and Syllabus for the modern Society. Discussion on Challenges and trends in Physical Education and Sports.

REFERENCE

Aggarwal, J.C (1990). Curriculum Reform in India- World overviews, Doaba World Education Series-3 Delhi: Doaba House, Book seller and Publisher.

Arora, G.L. (1984): Reflections on Curriculum , New Delhi: NCERT.

Bonnie, L. (1991). The Management of Sports. St.Louis: Mosby Publishing Company, Park House.th

Bucher A. Charles,(1993) Management of Physical Education and Sports (10 ed.,) St. Louis:

Carl, E, Willgoose. (1982.Curriculum in Physical Education, London: Prentice Hall.

Charles, A, Bucher & March, L, Krotee. (1993). Management of Physical Education and Sports. St.Louis: Mosby Publishing Company.

Chelladurai, P. (1999). Human Resources Management in Sports and Recreation. Human Kinetics.

McKernan, James (2007) Curriculum and Imagination: Process, Theory, Pedagogy and Action Research, . U.K: Routledge

NCERT (2005). National Curriculum Framework-2005, New Delhi: NCERT.

NCERT (2000). National Curriculum Framework for School Education, New Delhi: NCERT.

2.	**COURSE OUTCOME students are able to**	
	CO-1	Analyze and explain the mechanisms underlying biomechanical, physiological, and psychological changes that occur during after acute and chronic exercise.
	CO-2	Understand mechanical principles can be applied to the analysis of human movement to assess and improve performance and reduce risk of injury.
	CO-3	Know effectiveness of human movement using mechanical principles.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3		1	1	2		2	
2	2			2			1	3	1	
3		2	3	1				2	1	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2		1
3	1	2

****

CORE PAPER XV

DISSERTATION

1. The student shall have dissertation for M.P.Ed in IV Semester. The title and proposal shall be approved by the Guide and Head of Department/ Principal of the College.
2. The dissertation must be submitted on or before the last theory examination of the IV Semester duly signed by Guide and Head of Department / Principal of the College.

3. The format Prescribed by the University shall be followed.

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LIST OF DISCIPLINE SPECIFIC ELECTIVE

ODD SEMESTER

Physical Fitness and Wellness

Sports Technology

Sports Engineering

Professional Preparation for SLET/NET in Physical Education

EVEN SEMESTER

Sports Journalism and Mass Media (or)

Health Education and Sports Nutrition

Value and Environmental Education (or)

Educational Technology in Physical Education

DISCIPLINE SPECIFIC ELECTIVE

PHYSICAL FITNESS AND WELLNESS

Learning Objectives

1. Promote the knowledge of physical fitness and wellness
2. Create fitness awareness among youth, various health problems and its impacts
3. Able understand the importance of physical fitness and to create good health.

UNIT I

Physical Fitness: Meaning and Definition, Concepts, Techniques and Principles. Types and Components of Fitness : Health Related Fitness-Motor and Skill Related Fitness - Current trends in fitness and conditioning, components of total health fitness and the relationship between physical activity and lifelong wellness. Meaning and Definition of Wellness – Components of wellness.

UNIT II

Nutrients: Nutrition labeling information, Food Choices, Food Guide Pyramid, Influences on food choices-social, economic, cultural, food sources, Comparison of food values. Weight Management-proper practices to maintain, lose and gain. Eating Disorders, Proper hydration. Body Image- Factors influencing body Image.

UNIT III

Aerobic Exercise :Cardio respiratory Endurance Training; proper movement forms, : correct stride, arm movements, body alignment; proper warm-up, cool down, and stretching, monitoring heart rates during activity. Assessment of cardio respiratory fitness and set goals to maintain or improve fitness levels. Cardio respiratory activities including: power walking, pacer test, interval training, incline running, distance running, aerobics and circuits.

UNIT IV

Anaerobic Exercise: Resistance Training for Muscular Strength and Endurance; principles of resistance training, Safety techniques (spotting, proper body alignment, lifting techniques, spatial, awareness. and proper breathing techniques). Weight training principles and concepts; basic resistance exercises (including free hand exercise, free weight exercise, weight machines, exercise bands and tubing. medicine balls, fit balls) Advanced techniques of weight training

UNIT V

Flexibility Exercise: Flexibility Training, Relaxation Techniques and Core Training. Safety techniques (stretching protocol; breathing and relaxation techniques) types of flexibility exercises dynamic, static), Develop basic competency in relaxation and breathing techniques. Pilates, Yoga.

Course Outcome

1. Explain the history and philosophy of public physical fitness as well as its core values, concepts, and functions across the globe and in society.

2. Identify the methods, and tools of public health data collection, use, and analysis

3. Relate the underlying science of wellness and disease to opportunities for promoting and protecting health across the life course.

4. Identify the socio-economic, behavioural, biological, environmental, and other factors that impact physical fitness and contribute to health disparities.

5. Apply the principles of training and maintain a physical fitness.

Peer Group Teaching and Discussion Concept

Group Discussion on . Modern concept of Physical fitness and Wellness. . Role Play as Trainer and Client to calculate Exercise Intensity. Discussion on Diet for sports competition, eating pattern, Foods to avoid.

REFERENCE

David K. Miller & T. Earl Allen(1989), Fitness, A life time commitment, Surjeet Publication Delhi.

Dificore Judy, the complete guide to the postnatal fitness, A & C Black Publishers Ltd. Bedford row, London 1998

Uppal A.K (1992), Physical Fitness, Friends Publications (India),

Warner W.K. Oeger& Sharon A. Hoeger(1990) Fitness and Wellness, Morton Publishing Company.

Elizabeth & Ken day (1986), Sports fitness for women, B.T. Batsford Ltd, London.

Emily R. Foster, KarynHartiger& Katherine A. Smith (2002), Fitness Fun, Human Kinetics Publishers.

Lawrence, Debbie (1999), Exercise to Music. A & C Black Publishers Ltd. 37, Sohe Square, London.

Robert Malt(2001), 90 day fitness plan, D.K. publishing, Inc. 95, Madison Avenue, New York .

2.	**COURSE OUTCOME students are able to**	
	CO-1	Explain group mechanisms and group psychology in a sports context
	CO-2	Reflect upon motivational psychology as applied to sports activities
	CO-3	Formulate relevant constructs of exercise psychology
	CO-4	Demonstrate the ability to discuss sociological theories, concepts, and ideas in large and small groups and to express empirically as well as theoretically-based opinions.
	CO-5	To apply core sociological theories to specific social problems in order to analyze social problems.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		3		1			2	1	2
2		2	1					1		3
3	1	3	1		1	1	2			2

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2		2
3	1	

*****

DISCIPLINE SPECIFIC ELECTIVE

SPORTS TECHNOLOGY

Learning Objectives

1. To understand the procedure of selection and use of various sports technologies.
2. To learn the method of construction and installation of sports surface
3. Help to improve knowledge about modern playing equipment

UNIT I

Sports Technology: Meaning, definition, purpose, advantages and applications. General principles and purpose of instrumentation in sports, Workflow of instrumentation and business aspects, Technological impacts on sports.

UNIT II

Science of Sports Materials: Adhesives- Nano glue, nanomoulding technology, Nano turf. Foot wear production, Factors and application in sports, constraints. Foams-Polyurethane, Polystyrene, Styrofoam, closed-cell and open-cell foams, Neoprene, Foam. Smart Materials - Shape Memory Alloy (SMA), Thermo chromic film, High-density modeling foam.

UNIT III

Modern surfaces for playfields, construction and installation of *sports surfaces. T*ypes of materials – synthetic, wood, polyurethene. Artificial turf. Modern technology in the construction of indoor and outdoor facilities. Technology in manufacture of modern play equipments- electronic equipments. Use of computer and software in Match Analysis and Coaching.

UNIT IV

Modern equipments: Playing Equipments: Balls : Types, Materials and Advantages. Bat/Stick/ Racquets: Types, Materials and Advantages. Clothing and shoes: Types, Materials and Advantages. Measuring equipments: Throwing and Jumping Events. Protective equipments: Types, Materials and Advantages. Sports equipment withnano technology, Advantages.

UNIT V

Training gadgets: Basketball: Ball Feeder, Mechanism and Advantages. Cricket : Bowling Machine, Mechanism and Advantages. Tennis: Serving Machine, Mechanism and Advantages, Volleyball: Serving Machine Mechanism and Advantages. Lighting Facilities: Method of erecting Flood Light and measuring luminous. Video Coverage: Types, Size, Capacity, Place and Position of Camera in Live coverage of sporting events.

Learning outcomes

1. Plan, develop, communicate, implement, and evaluate technology-infused strategic plans.
2. Maintain and manage a variety of digital tools and resources for use in technology-rich sports environment

3. Design, develop, and implement technology-rich sports program that model of sports field and promote digital age best practices in teaching, playing and assessment.
4. Find out how successful were the teachers' efforts in contributing to the realization of the fundamental objectives of sports.
5. Assessments which learning experiences were effective in promoting and enhancing learning, which teaching methods and techniques are effective in the realization of the sports objectives.

Peer Group Teaching and Discussion Concept

Group Discussion on need and Importance of Sports Technology in Physical Education.

Modern Training Equipments. Discussion on Playing Surfaces and its merits and demerits.

REFERENCE

Books

Charles J.A. Crane, F.A.A. and Furness , J.A.G. (1987) " Selection of Engineering Materials" UK : Butterworth Heiremann.

Finn, R.A. and Trojan P.K.(1999) " Engineering Materials and their Applications" UK: Jaico Publisher .

John Mongillo,(2001), "Nano Technology 101 " New York : Green wood publishing group.

Web Reference

www. Astm.org/ labs/ pages/131350 .htm www. Applied sports materials.com
www.dvice.com/archives/2008/08/10-new-technolo.php
www. Sti-sports.com

www.sports Engineering .com
Www.topendsports.com/resources/technology.htm
Www.ulster.ac.uk/science in society/technologyinsport.html

2. **COURSE OUTCOME students are able to**

CO-1	Understand the Educational and cultural values of Olympic movement**.**
CO-2	Analyze the Modern Olympic Games and Rules of Eligibility for Competition.
CO-3	Know about The organizational structure and functions of Para Olympic Games
CO-4	Analyze the Achievement of India in Team Games and Individual Sports.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2	1	3
3	1	2

***

DISCIPLINE SPECIFIC ELECTIVE

SPORTS JOURNALISM AND MASS MEDIA

Learning Objectives

1. To promote the awareness of sports through journalism
2. To learn the techniques to sports organization through media
3. To know about Sports journalism and mass media contribution in sports field

UNIT I

Meaning and Definition of Journalism. Ethics of Journalism - Canons of journalism- Sports Ethics and Sportsmanship - Reporting Sports Events. National and International Sports News Agencies.

UNIT II

Sports Bulletin :Journalism and sports education - Structure of sports bulletin - Compiling a bulletin- Types of bulletin . Role of Journalism in the Field of Physical Education: Sports as an integral part of Physical Education - Sports organization and sports journalism- General news reporting and sports reporting.

UNIT III

Mass Media in Journalism : Radio and T.V. Commentary - Running commentary on the radio - Sports experts comments. Role of Advertisement in Journalism. Sports Photography: Equipment- Editing –Publishing. Media and Sports.

UNIT IV

Brief review of Olympic Games, Asian Games, Common Wealth Games World Cup, National Games and Indian Traditional Games. Preparing report of an Annual Sports Meet for Publication in News paper. Organization of Press Meet.

UNIT V

Sports organization and Sports Journalism – General news reporting and sports reporting. Methods of editing a Sports report. Evaluation of Reported News. Interview with an elite Player and Coach.

Learning outcomes

1. Understand the basic Journalism and Mass Media in Journalism.
2. Apply the media in sports field for promotion.
3. Promote the awareness of Sports organization and Sports Journalism.
4. Develop the knowledge through Journalism and Mass Media, participate and organize.

Peer Group Teaching and Discussion Concept

Group Discussion on Role of Journalism and Mass Media in Physical Education. Role Play as Journalist Player and Coach. Group Discussion on: Current Problems in Sports

REFERENCE

Ahiya B.N. (1988) Theory and Practice of Journalism: Set to Indian context Ed3. Delhi :Surjeet Publications

Ahiya B.N. &Chobra S.S.A. (1990) Concise Course in Reporting, New Delhi: Surjeet Publications

Bhatt S.C. (1993) Broadcast Journalism Basic Principles, New Delhi. Haranand publication

Varma A.K. (1993) Advanced Journalism New Delhi: Haranand publication.

Rangasam, Parthasarathy (1991) Journalism in India from the Earliest Times to the President Sterling publication Pvt. Ltd.

2.	**COURSE OUTCOME students are able to**	
	CO-1	Able to explain and understand the concepts of gender studies
	CO-2	Able to interpret and identify the gender issues and problems

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1				2		1	3
2			3					2	1	3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2		2
3	1	

***

DISCIPLINE SPECIFIC ELECTIVE

HEALTH EDUCATION AND SPORTS NUTRITION

Learning Objectives

1. Identify dietary carbohydrate and protein sources, Identify proper hydration principles and discuss the importance of hydration for physical performance

2. Demonstrate knowledge of a healthy diet for physical performance and demonstrate an ability to utilize this knowledge to complete a self-diet critique.

3. Demonstrate an understanding of health and to develop determination and values of desirable body weight

UNIT I

Health Education**:** Concept, Dimensions, Spectrum and Determinants of Health Definition of Health, Health Education, Health Instruction, Health Supervision Aim and objective of Physical Education, Health Education and Recreation. Guiding Principles of Health and Health Education. Health Service and guidance instruction in personal hygiene.

UNIT II

Health Problems in India: Communicable and Non Communicable Diseases Obesity, Malnutrition, Adulteration in food, Environmental sanitation, Explosive, Population, Personal and Environmental Hygiene for schools, Objective of school health service, Role of health education in school Health Services - Care of Skin, Nails, Eye Health Service, Nutritional Service, Health Appraisal, Health Record, Healthful School Environment, first- aid and emergency care. Signs, Symptoms and prevention of communicable Diseases: Malaria, Small Pox, Dysentery, Mumps, Typhoid and AIDS.

UNIT III

Hygiene and Health: Meaning of Hygiene, Type of Hygiene, Dental Hygiene, Effect of Alcohol on Health, Effect of Tobacco on Health, Life Style Management, Management of Hypertension, Management of Obesity, Management of Stress. Balanced Diet

UNIT IV

Introduction to Sports Nutrition: Meaning and Definition of Sports Nutrition, Role of nutrition in sports, Basic Nutrition guidelines. Misuse of Drugs in Sports. Nutrients: Ingestion to energy metabolism: Carbohydrate, Protein and Fat, Role of carbohydrates, Fat and protein during exercise. Nutrition and Dietary Manipulations. Chief Minister’s Mid day meals Scheme.

UNIT V

Nutrition and Weight Management :Concept of Body mass index (BMI), Obesity and its hazard, Dieting versus exercise for weight control Maintaining a Healthy Lifestyle**,** Weight management program for sporty child**,** Role of diet and exercise in weight management**,** Design diet plan and exercise schedule for weight gain and loss.

Learning outcomes

1. Restate the role of nutrients and caloric requirements
2. Sketch the basic classification, functions and utilization of nutrients.
3. Point out diet for various competitions and nutrient supplements for performance.
4. Evaluate the factors affects health and solutions for wellness.
5. Design caloric requirements for various sports and age groups.

Peer Group Teaching and Discussion Concept

Discussion on role of nutrients and caloric requirements ,Classification, functions and utilization of nutrients. Discussion and Teaching on various competitions and nutrient supplements for performance.

REFERENCE:

Bucher, Charles A. "Administration of Health and Physical Education Programme".

Hanlon, John J. "Principles of Public Health Administration" 2003.

Turner, C.E. "The School Health and Health Education".

Moss and et. At. "Health Education" (National Education Association of U.T.A.)

Nemir A. 'The School Health Education" (Harber and Brothers, New York).

Nutrition Encyclopedia, edited by Delores C.S. James, The Gale Group, Inc. Boyd-Eaton S. et al (1989) The Stone Age Health Programme: Diet and Exercise as Nature Intended. Angus and Robertson.

Terras S. (1994) Stress, How Your Diet can Help: The Practical Guide to Positive Health Using Diet, Vitamins, Minerals, Herbs and Amino Acids, Thorons.

2. **COURSE OUTCOME students are able to**

CO-1	Understand the primary responsibilities the sports trainer has in preventing sports injuries and providing initial care for injured athletes.
CO-2	Demonstrate the basics of sport first aid during and after game situation.
CO-3	Recognise and appropriately treat common sports injuries and conditions from onset through rehabilitation.
CO-4	Identify and apply knowledge of anatomy to the design and execution of research studies.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3		1				1	3	2	
2	2	1		2			3	1		
3		2	3			1			2	3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	3	2
2	1	
3		3

***

DISCIPLINE SPECIFIC ELECTIVE

SPORTS ENGINEERING

Learning Objectives

1. To understand the procedure of selection and use of various sports engineering and technologies.
2. To learn the mechanics of engineering materials in sports field
3. Help to improve knowledge about building and maintain playing surface.

UNIT I

Introduction to sports engineering and Technology: Meaning of sports engineering, human motion detection and recording, human performance, assessment, equipment and facility designing and sports related instrumentation and measurement.

UNIT II

Mechanics of engineering materials: Concept of internal force, axial force, shear force, bending movement, torsion, energy method to find displacement of structure, strain energy. Biomechanics of daily and common activities –Gait, Posture, Body levers, ergonomics. Sports Dynamics: Introduction to Dynamics, Kinematics to particles – rectilinear and plane curvilinear motion coordinate system. Kinetics of particles.

UNIT III

Building and Maintenance: Sports Infrastructure- Gymnasium, Pavilion, Swimming Pool, Indoor Stadium, Out-door Stadium, Play Park, Academic Block, Administrative Block, Research Block, Library, Sports Hostels

UNIT IV

. Requirements: Air ventilation, Day light, Lighting arrangement, Galleries, Store rooms, Office, Sound System (echo-free), Internal arrangement according to need and nature of activity to be performed, Corridors and Gates for free movement of people. Emergency provisions of lighting, fire and exits, Eco-friendly outer surrounding. Maintenance staff, financial consideration.

UNIT V

Building process:- design phase (including brief documentation), construction phase functional (occupational) life, Re-evaluation, refurnish, demolish. Maintenance policy, preventive maintenance, corrective maintenance. Facility life cycle costing: Basics of theoretical analysis of cost, total life cost concepts, maintenance costs, energy cost, capital cost and taxation.

Learning outcomes

1. Plan, develop, communicate, implement, and evaluate technology-infused strategic plans.
2. Maintain and manage a variety of digital tools and resources for use in technology-rich sports environment
3. Design, develop, and implement technology-rich sports program that model of sports field and promote digital age best practices playing and assessment.
4. Find out how successful were the teachers' efforts in contributing to the realization of the fundamental objectives of sports.

Peer Group Teaching and Discussion Concept

Group Discussion on need and Importance of Sports Engineering in Physical Education. Modern Training Equipments. Discussion on Playing Structure and its merits and demerits.

REFERENCE

Franz K. F. (2013) Editor, Routledge Handbook of Sports Technology and Engineering :Routledge.

Steve Hake, Editor, The Engineering of Sport (CRC Press, 1996) Franz K. F(2007) Editor The Impact of Technology on Sports II, CRC. Helge N (2009) Sports Aerodynamics (Springer Science & Business Media.

Youlin Hong, (2013) Editor Routledge Handbook of Ergonomics in Sport and Exercise: Routledge.

Jenkins M.,(2003) Editor Materials in Sports Equipment, Volume I :Elsevier.

Colin White, Projectile Dynamics in Sport: Principles and Applications Eric C. (2010) Editor Sports Facility Operations Management :Routledge.

2. **COURSE OUTCOME students are able to**

CO-1	Perform and report on the exploratory analysis of data collected using sports technology
CO-2	Analyze sporting data of various types via astute use of statistical packages.
CO-3	Practice mathematics, statistics, information technology in sport technology related problems
CO-4	Support a conclusion based upon quantitative prediction, performance and analysis of a sporting team, code, or gaming environment
CO-5	Offer Hands on Knowledge in sports Technology

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2	1						3	1	3
2		2	3		1				1	3
3			1			2	3			2

4. **MAPPING'S OF CO'S AND PSO'S**

	COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)		
		1	2	
	1	3	2	
	2	1	3	
	3	2	1	

***

DISCIPLINE SPECIFIC ELECTIVE

VALUE AND ENVIRONMENTAL EDUCATION

Learning Objectives

1. Promote the knowledge of value and environmental education.
2. Create health awareness among youth, various health problems and its impacts
3. Able understand the importance of environment and to create good environment

UNIT I

Values: Meaning, Definition, Concepts of Values. Value Education: Need, Importance and Objectives. Moral Values: Need and Theories of Values. Value Systems: Meaning and Definition, Personal and Communal values, Corporate values, Consistency, Internally consistent, Internally inconsistent , Judging Value System, Commitment, Commitment to values.

UNIT II

Concept and development of Self Confidence, Positive Thinking, Goal Setting, Interpersonal relationship, Love and Truthfulness, Integrity and Character, Peace and Nonviolence, Universal Brotherhood and Social harmony, Learning from Nature.National Integration and Value Education.

UNIT III

Value Education in the Present Scenario. Attitude: Meaning and Importance of Attitude. Self Esteem: Meaning and Importance of Self Esteem. Interpersonal Skills: Meaning and Importance of Interpersonal Skills. Subconscious Mind and Habits: Forming Positive Habits, Preparing Sub conscious Mind .

UNIT IV

Definition, Scope, Need and Importance of environmental studies., Concept of environmental education, Historical background of environmental education, Celebration of various days in relation with environment, Plastic recycling and prohibition of plastic bag /

cover, Role of school in environmental conservation and sustainable development, Pollution free ecosystem.

UNIT V

People and Environment: People and environment interaction.Sources of pollution. Pollutants and their impact on human life. Exploitation of natural and energy resources. Natural hazards and mitigation. Occupational Hazards.

Learning Outcome

1. Explain the role of values, concepts, and functions across the globe and in society.
2. Able to explain Value Education- Goal Setting- Self Efficacy and Self Esteem
3 Apply the principles of project implementation, including planning, assessment, and evaluation in organizational and community initiatives.

Peer Group Teaching and Discussion Concept

Group Discussion on Waste Management . Preparation for Wealth out of Waste (WoW) Initiatives. Awareness Camping on Pollution control, Say No to Plastic and similar concepts.

REFERENCE

Dhananjay Joshi (2010) Value Education in Global Prespective. New Delhi : Lotus Press .

Kannan.K (2009) Soft Skills, Madurai: Yadava College Publication

MohitChakrabarti (2008): Value Education: Changing Perspective, New Delhi : Kanishka Publication.

Padmanabhan. A &Perumal .A (2009), Science and Art of Living, Madurai: Pakavathi Publication

Shiv Khera (2002), You Can Win, NewDelhi: Macmillan India Limited.

Venkataiah. N (2009)Value Education. - New Delhi: APH Publishing Corporation.

Miller T.G. Jr., Environmental Science (Wadsworth Publishing Co.)

Odum, E.P. (1971) Fundamentals of Ecology (U.S.A.: W.B. Saunders Co.

Rao, M.N. &Datta, A.K. (1987)Waste Water Treatment (Oxford & IBH Publication Co. Pvt. Ltd.).

Townsend C(1995), Essentials of Ecology (Black well Science)

Heywood, V.H. and Watson V.M., Global biodiversity Assessment (U.K.: Cambridge University Press).

Jadhav, H. and Bhosale, V.M. (1995) Environmental Protection and Laws (Delhi: Himalaya Pub. House).

Mc Kinney, M.L. and Schoel, R.M (1996). Environmental Science System and Solution (Web enhanced Ed.).

Miller T.G. Jr., Environmental Science (Wadsworth Publishing Co.)

2. **COURSE OUTCOME students are able to**

CO-1	Understand about classification of Disabilities.
CO-2	Understand adopted games for disability persons.
CO-3	Known the benefits of exercise for disability persons.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2		
3	1	2

***

DISCIPLINE SPECIFIC ELECTIVE

EDUCATIONAL TECHNOLOGY IN PHYSICAL EDUCATION

Learning Objectives

1. To understand the procedure of selection and use of various educational technologies.
2. To learn the method ofInstructional Design
3. Help to improve new horizons of educational technology

UNIT I

Nature and Scope: Educational technology-concept, Nature and Scope. Forms of educational technology: teaching technology, instructional technology, and behaviour technology; Transactional usage of educational technology: integrated, complementary,

supplementary stand-alone (independent); programmed learning stage; media application stage and computer application stage.

UNIT II

Systems Approach to Physical Education and Communication: Systems Approach to Education and its Components: Goal Setting, Task Analysis, Content Analysis, Context Analysis and Evaluation Strategies; Instructional Strategies and Media for Instruction. Effectiveness of Communication in instructional system; Communication - Modes, Barriers and Process of Communication.

UNIT III

Instructional Design :Instructional Design: Concept, Views. Process and stages of Development of Instructional Design. Overview of Models of Instructional Design; Instructional Design for Competency Based Teaching: Models for Development of Self Learning Material.

UNIT IV

Audio Visual Media in Physical Education: Audio-visual media - meaning, importance and various forms Audio/Radio: Broadcast and audio recordings - strengths and Limitations, criteria for selection of instructional units, script writing, pre-production, post-production process and practices, Audio Conferencing and Interactive Radio Conference. Video/Educational Television. Use of Television and CCTV in instruction and Training, Video Conferencing, SITE experiment, Use of animation films in Teaching Physical Activities.

UNIT V

New Horizons of Educational Technology: Recent innovations in the area of ET interactive video - Hypertext, video-texts, optical fiber technology - laser disk, computer conferencing. Procedure and organization of Teleconferencing/ Interactive video-experiences of institutions, schools and universities. Computer Assisted Instruction/ Teaching in Physical Education and Sports.

Learning outcomes

1. Plan, develop, communicate, implement, and evaluate technology-infused strategic plans.
2. Maintain and manage a variety of digital tools and resources for use in technology-rich learning environment
3. Design, develop, and implement technology-rich learning program that model principles of learning and promote digital age best practices in teaching, learning and assessment.

Peer Group Teaching and Discussion Concept

Teaching the selected area of subject using the ICT gadgets – Discussion on Merits and Demerits of various methods of Teaching. Encouraged to Prepare Teaching Aids from Waste Products. Hand on experience in the ICT lab.

REFERENCE

Amita Bhardwaj (2003), New Media of Educational Planning".Sarup of Sons, New Delhi.

Bhatia and Bhatia (1959). The Principles and Methods of Teaching (New Delhi : Doaba House.

.Dasgupta D.N, Communication and Education, Pointer Publishers Education and Communication for development, O. P. Dahama, O. P. Bhatnagar, Oxford (Page 68 of 71) IBH Publishing company, New Delhi

Sampath K, Pannirselvam A and S. Santhanam (1981) Introduction to Educational Technology New Delhi: Sterling Publishers Pvt. Ltd..

Kochar, S.K. (1982)Methods and Techniques of Teaching (New Delhi, Jalandhar, Sterling Publishers Pvt. Ltd.

Kozman, Cassidy and k Jackson, (1952). Methods in Physical Education (W.B. Saunders Company,Philadelphia and London.

2. **COURSE OUTCOME students are able to**

CO-1	Restate the role of nutrients and caloric requirements
CO-2	Sketch the basic classification, functions and utilization of nutrients.
CO-3	Point out diet for various competitions and nutrient supplements for performance.
CO-4	Evaluate the factors affects weight management and solutions for obesity and Design caloric requirements for various sports and age groups.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2	1	3			2		3	1	1
2	2			1				3	2	1
3		1	1		2			3		

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	2	1
3	1	2

***

ABILITY ENHANCEMENT COMPULSORY COURSES (AECC) HUMAN RIGHTS

Learning Objective

1. To impart the basic ideas about human rights at post-graduation level.
2. To provide different aspects of human rights which includes children and women.
3. To learn not only the basic rights but also can understand the duties to be carried out in the days to come.

UNIT I

Introduction to Human Rights: Human rights: Meaning-Definition-origin and growth of human rights in the world- need and types of human rights- UNHRC (united nations human rights commission)- human rights in India.

UNIT II

Classification of Human Rights: Right to liberty – Right to life Right to equality – Right to Dignity – Right against Exploitation – Educational Rights – Cultural Rights – Educational Rights – Economic Rights – Political Rights – Social Rights.

UNIT III

Women and Children: Rights of Women – Female feticide and Infanticide and selective abortion – Physical assault and Sexual harassment – Domestic Violence – Violence at work place – Remedial Measures. Rights of Children – Protection rights, survival rights – Participation rights – development rights – Role of UN on conversation on rights of children.

UNIT IV

Multi-Dimensional Aspects of Human Rights:Labour rights – Bodend labour-

Child labour – Contract labour –Migrant labour – Domestic Women labour – Gender equity – Rights of Ethnic refugees– Problems and remedies – Role of trade union in protecting the unorganized labourers

UNIT V

Grievance and Redressal Mechanism: Redressal mechanism at national and international levels – Structure and functions of National and State level Human Rights Commission – constitutional remedies and directive principles of state policy.

REFERENCE

Baradat Sergio and SwaronjaliGlosh. Teaching of human rights. Dominant Publishers and distributers, New Delhji, 2009.

Roy A. N. Human Rights Achievements and challenges: Vista international Publishing house, Delhi, 2005.

Asish Kumar das and Prasant Kumar Mohanty. Human Rights in India: Sarup and Sons. New Delhi, 2007.

BaniBorgihain. Human Rights Social Justice and Political Challenge. Kansika Publishers and distributers New Delhi, 2007.

Velan, G. Human Rights and Development Issues: The associated publishers, Ambalacantt, 2008.

Meena , P.K. human Rights theroryand practice: MuraliLal and Sons, New Delhi, 2008.

Bhavani Prasad Panda. Human rights Development and environmental law: Academic excellence, Delhi, 2007.

Viswanathan, V.N Human Rights – Twenty First Century Challenges: Kalpaz Publications, New Delhi, 2008.

Ansari, M.R. Protecting Human Rights: Max Ford Books, New Delhi, 2006.

Rao, M.S.A. Social Movements in India – Social Movements and Social Transformation in India Vol.1 & 2: Manohar Publications, New Delhi, 1978.

2.	**COURSE OUTCOME students are able to**	
	CO-1	Discuss research from a multidisciplinary perspective relative to current issues in physical activity and health.
	CO-2	Apply qualitative research methods to explore and critically examine a variety of curricular topics.
	CO-3	Demonstrate application of relevant research and theory to a contemporary issue in physical activity and exercise science.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	3		2		1			2		2
2	1		2	1			2		3	1
3		2		1		1		1		3

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2	2	1
3		

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ABILITY ENHANCEMENT COMPULSORY COURSES (AECC)

PERSONALITY DEVELOPMENT AND LIFE COPING SKILLS

Learning Objective

1. To impart the basic ideas about personality development.
2. To impart the basic ideas about life coping skills
3. To frame the concepts of Goal Setting

UNIT I

Personality – Definition and Meaning - Dimensions of Personality Stress Management The Nature of Stress – A wellness Lifestyle – Distress symptoms: emotional distress, cognitive distress, Behavioural distress, physical distress symptoms – managing stress : exercise, nutrition, sleep, healthy pleasures – self talk and stress.

UNIT II

Relaxation Definition and Meaning. Methods: breathing techniques, meditation techniques, visualization techniques – self hypnosis- muscle relaxation techniques – Physical Activity and Sports Participation- Using social support. Maintaining Trust Developing and maintaining trust – being trusting and trustworthy – building interpersonal trust – re-establishing trust after it has been broken – trusting appropriately – trust and friendship.

UNIT III

Emotional Intelligence Definition and Meaning. Components of Emotional Intelligence and emotional competence - components of emotional intelligence Importance of Attitude: Meaning and Definition. Attitude and Success – Factors Determining Attitude . Benefits of Positive Attitude . Steps in Building Positive attitude.

UNIT IV

Goal Setting: Importance of Goal- SMART- Goals: Balanced- Quality not Quantity- Health- Social Responsibilities- Consistent with values- Activity and accomplishment- Meaningless Goals. Managing Time The basis of effective goals – steps to be followed to obtain optimum results from goal setting – Identifying the reasons for procrastination – guidelines to overcome procrastination – priority management at home and college

UNIT V

Life-coping Skills: Life-coping skills: Communication, Computer, Accounts and Arithmetic/Statistics, Analyzing Skills : Rational Thinking, Decision Making, Problem Solving and Reasoning) Personal Skills: Responsibility, Integrity/Honesty, Self-Management & Social Engagement. The dearth of personal skills: Corruption, Violence and Social conflicts. Resolving Interpersonal Conflicts Understanding conflicts of Interests- conflict strategies – negotiating to win – negotiating to solve the problems – steps for effective problem solving negotiating – refusal skills.

Learning Outcomes

1. Understand and develop the individuals' personality development.
2. Empower the individuals in life coping skills
3. Able to frame the concepts of Goal Setting

REFERENCE

Johnson, D.W. (1997). Reaching out – Interpersonal Effectiveness and Self Actualization. 6th ed. Boston: Allyn and Bacon.

Robbins, S. P. and Hunsaker, Phillip, L. (2009). Training in Interpersonal skills. Tips for managing people at work. 5th ed. New Delhi: PHI Learning.

Sherfield, R. M. ; Montgomery, R.J. and Moody, P, G. (2010). Developing Soft Skills. 4th ed. New Delhi: Pearson.

Shiv Khera (2006), You Can Win, Macmillan ; New Delhi.

2.	**COURSE OUTCOME students are able to**	
	CO-1	Plan, develop, communicate, implement, and evaluate technology-infused strategic plans.
	CO-2	Maintain and manage a variety of digital tools and resources for use in technology-rich learning environment
	CO-3	Design, develop, and implement technology-rich sports program that model

		of sports field and promote digital age best practices playing and assessment.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2	2	1
3		

***

SKILL ENHANCEMENT COURSES

SPORTS TOURISM IN INDIA

Learning Objective

1. To impart the basic ideas about Sports Tourism in India
2. To impart the basic ideas the avenues in the area of Sports Tourism in India

UNIT I

Definition of tourism, types of tourism, basic components of tourism, motivation of tourism international tourist domestic tourist various kinds of tourism.

UNIT II

Cultural tourism in India, Indian handicrafts, Customs of India, Fairs and festivals of Indian Music and dance of India.

UNIT III

Definition of sports tourism, Classification of sports tourism, types of sports tourism, benefits of sports tourism.

UNIT IV

Adventure Sports Tourism, Definition, types of adventure sports tourism adventure sports tourism destinations in India. Institutional Structure of Indian Sports.

UNIT V

Impacts of sports tourism, Economic impacts, social cultural impacts, role of government in promoting sports tourism in India. Opportunities and Challenge

Learning Outcomes:

1. The student able to understand challenges and trends in Sports Tourism in India
2. The student able to understand avenues and job opening in Sports Tourism in India

REFERENCE

Authors Guide (2014), India China Economic and Cultural Council , Sports Tourism in India, China National Tourist Office, China

Bhatia A.K.,(2003) International-Tourism, Sterling Publishers Pvt Ltd, New-Delhi

Bhatia A.K.,(2003) Tourism Development Principles and Practices, Sterling Publishers Pvt Ltd, New-Delhi

Prannath Seth, (1997) Successful tourism management, Sterling Publishers Pvt Ltd, New Delhi

Satyender Singh Malik, (2006), Potential of Adventure Tourism in India, Akam Kala Prakashan Publisher

Simon Hudson (2006) ,Sports and Adventure Tourism, Viva Book Private Ltd New Delhi.

Thandavan and revathy,(2005) Grish Tourism Poduct,Volume-1,Dominant-Publishers,Delhi.

2. **COURSE OUTCOME students are able to**

CO-1	Able to Mark and Maintain Track and Field
CO-2	Able to Mark and Maintain Play Field Marking
CO-3	Able to Understand the concept of surfaces of Play Fields

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1					3		
2	1	2		2					3	
3	1	1	2	1		1		3		1

4.	**MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		1
2	1	2
3	1	3

***

SKILL ENHANCEMENT COURSES

SOFTWARE BASED APPLIED STATISTICS

UNIT I

Introduction to Software in Statistics- Benefits of Software in Statistics- Introduction and Basic Arithmetical Operation in MS Excel- Introduction to the basics of SPSS.

UNIT II

Measures of Central Tendency : Mean, Median and Mode . Computation of Mean, Median and Mode through MS Excel. Computation of Mean, Median and Mode through SPSS.

UNIT III

Measures of Dispersion : Range – Mean Deviation- Quartile Deviation- Standard Deviation . Computation of Standard Deviation through MS Excel. Computation of Standard Deviation through SPSS.

UNIT IV

Correlation: Pearson Product Moment Correlation –Spearman Rank order Correlation. Computation of Pearson Product Moment Correlation –Spearman Rank order Correlation. Computation of Bi-vitiate Correlation through SPSS .

UNIT V

Comparison of Mean: Independent 't' Test - Dependent 't' Test - ANOVA. Computation of Independent 't' Test - Dependent 't' Test - ANOVA Deviation through MS Excel. Computation of Independent 't' Test - Dependent 't' Test - ANOVA through SPSS

REFERENCE

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.,

Clarke, H. Harrison and Clarke David H. (1972) Advanced Statistics, New Jercy: Prentice Hall Inc.

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press

Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.

Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

2.	**COURSE OUTCOME students are able to**	
	CO-1	Able to understand the Geographical units of India.
	CO-2	Able to understand the International and Domestic Tourism
	CO-3	Able to understand and identify the UNESCO world heritage sites in India

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		1				1	3		
2		2	3			2		1		2
3				1	2			3	1	

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		
2	1	2
3	2	1

*****

GENERIC ELECTIVE COURSE

RECREATIONAL AND INCLUSIVE GAMES

UNIT I

Recreation: Meaning, Definition and Need. Recreational Games: Types of Recreational Games: Methods for Conducting Relays: Simple File Relay Method. Relay Races: Simple Running Relay - Backward Running Relay- Hopping Relay- One Leg Relay - Jumping on Both Feet Relay - Jump the "Ditch" Relay- Sore-Toe Relay- Lame-Dog Relay

9. Elephant Walk Relay- Crab Relay- Frog-Jumping Relay - Leap Frog Relay- Leap Frog Spoke Relay- Kangaroo - Jumping Relay - Zig - zag Relay - Tunnel Relay - All-up Relay (Change the Club Relay) -. All-up and All-down Relay - Giddy Giddy Relay - Jump-the Stick Relay- Pony-Express Relay Ball Pass Vs Team Running Relay .

UNIT II

Tag Games : Meaning of Tag Games. Tag Games : Simple Tag (Ordinary Tag)- Whip Tag - Hopping Tag (Nondi Tag) - Sore-Spot Tag - Squat Tag- OstrichTag - Namaskar Tag- Chain Tag- Three Deep - Two Deep- Crows and Cranes - Streets and Alleys - Cat and Mice -Policeman and Thief- Mid-night- Magic Wand.

UNIT III

Goal Games : Good Morning - Squirrels In Trees- Snatch a Club - Come with Me- . Get Your Partner - Merry-Go-Round- Form Twos, Threes, Fours - Fire in the Mountain, Run, Run, Run (Fire Warden) -. Fruit Basket - Postman - Circle Snatch (Circle Rush)- . Musical Rush - Guard the Treasure- Circle Attention- Snatch the Handkerchief- Miscellaneous Games: Spud - Poison Circle- Dodge ball - Luggage Van - . Find the Leader-In the Pond on the Bank.

UNIT IV

Inclusive Games: Meaning, Definition and Need. Preschool Inclusive Activities: Airplane Fly- Body Bowling- Doughnut Delivery- Sticky Marshmallow- Turrey Pluck-Apple Picking- Mystery Search- Ice Cream Cone Creators- Beams and Ladders- Bulldozer Blast- Feed the Animals- Flying High.

UNIT V

Primary Inclusive Activities: Car Rally- Skittle ball- Toy Soldier- Octopus Tag-Puppy Dog Tails- Rolling Red Light- Duck Hunt- Fill the Basket- Marbles- Ponies in the Barn- Roll Over. Advanced Activities: Centipede- Pin Ball - The Giants Gum Ball- Happy Landings- Strike Back- Across the Great Divide - Gym Invaders- The Tortoise and The Hare . Adapted Sports Activities: Baseball –Football.

REFERENCE

Baneroft, Jessie H. Games New York: The Macmillan Company, 1959

Edmundson, Joseph. The Best Party Games. London Pan Books Ltd. 1968

Geri, Frank H. Illustrated Games Rhythms and Stunts for children New Jersey: Engle-Wood Clifts, Printice- Hall, 1957

Hindman, Drawin A. Hand Book of Indoor Games and contest, London: Nicholas Kaye Ltd, 1957

Lichtman, B. (1993). Innovative games. Champaign, IL: Human Kinetics.

Mason, Bernard S. And Michell Elmer D. Social Games for Recreation New York A. S. Barnes and company. 1935

Mason, Bernard S. And Mitchell Elmer D. Active Games and contests, New York: A. S Barnes and company, 1946

Morris, G. S., & Stiehl, J. (1989). Changing kids games. Champaign, IL: Human Kinetics.

Pangrazi, R. P. & Dauer, V. P., (1994). Dynamic physical education for elementary school children (11th ed). New York: Macmillan.

Poppen, J. D., & Jacobson, S. A. (1982). Games that come alive. Puyallup, WA: Action Productions.

Smith, Charles F. Games and Games Leadership New York: Dodd Mead and Company, 1953

Susan L. Kasser.( ) Inclusive Games. Champaign, IL: Human Kinetics.

The National Fitness Corps Hand Book Ministry of Education Government of India, 1965

Thomas Mathew, (1984) 150 Selected Minor Games, Alagappa University College of Physical Education, Karaikudi. Thomas, J. P. Physical Education Lessons. Madras, Gnanodaya Press, 1967

2. **COURSE OUTCOME students are able to**

CO-1	Able to communicate better
CO-2	Able to create awareness among youth the need and importance of communication skills.
CO-3	Understands the need and importance of communication skills.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2							3	1	
2		2	3		1		2	1		
3	2		1	1		2				

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	1	3
3	2	3

***

GENERIC ELECTIVE COURSE

SPECIAL OLYMPICS

UNIT I

Foundation of Special Olympics: mission of special Olympics - Special Olympics philosophy- Special Olympics vision - Special Olympics athlete's oath - official logo - goal of Special Olympics - founding principles of special Olympics - history and growth of special Olympics - worldwide structure of Special Olympics - accredited program structure – special Olympics Bharat (India) structure.

UNIT II

Definition of intellectual disability - General statement of eligibility - Eligibility for participation in special Olympics : General statement of eligibility - Age requirements - degree of disability. Identifying persons with intellectual disabilities. registration of athletes. participation by individuals with down syndrome who have Atlanto-Axial instability.

UNIT III

Selection procedure in special Olympics : Individual sports- team sports. divisioning in special Olympics. Rresponsibility of the competitor – coaches code of conduct. honest effort rule.

UNIT IV

Special Olympics and volunteers. orientation to volunteer. volunteer opportunities . official sports : official summer sports- official winter sports – recognised sports. Medical and safety standards. Coaching Special Athletes. organising training session : warm- up-main part-cool-down.

UNIT V

Sports Specific Coaching : Coaching and teaching basic sport skills - Fundamental skill development. Levels of instruction - General rule and modification of rules: Track events –Field events – Basketball - Cricket – Football – Volleyball.

REFERENCE

Authors Guide (2008) Special Olympics Bharat , Trainer Manual, First Edition, New Delhi India.Pp-No: 1-392.

Authors Guide (2012) Special Olympics Bharat, Master Trainer Handbook , Ministry of Youth Affairs & Sports Government of India, Scheme of Sports and Games for the Disabled, Fourth Edition. New Delhi- India. Pp.-No: 1-487.

Authors Guide (1937) American Association of Intellectually and Development Disabilities (AAIDD), New York, America.

Authors Guide (2007) World Health Organization, Global Resources for Persons with Intellectual,**ISBN:** 978 92 4 156350 5.

Siperstein, G. N., Harada, C. M., Parker, R. C., Hardman, M. L., & McGuire, (2005).Comprehensive National Study of Special Olympics Programs in the United States. A special report. University of Massachusetts Boston. Washington, DC: Special Olympics, Inc.

Saperstein, G.N., Norins, J., Corbin, S., & Shriver, T. (2003).Multinational Study of attitudes toward individuals with intellectual disabilities. Washington, DC: Special Olympics, Inc.

Trainer Manual (2009), Special Olympics, Bharat. India: Published by Special Olympic National Office, New Delhi India.

2. **COURSE OUTCOME students are able to**

CO-1	Able to promote good practice to promote and preserve environment
CO-2	Able to create awareness on health problems due to environmental pollution
CO-3	Able to explain importance of environment and to create good environment.

3. **MAPPING'S OF CO'S AND PO'S**

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2							3	1	
2		2	3		1		2	1		
3	2		1	1		2				

4. **MAPPING'S OF CO'S AND PSO'S**

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	1	3
3	2	3

****

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI
Department of Physical Education
M.Phil in Physical Education (Regular)

Choice Based Credit System (CBCS)
Subject matter and Evaluating System
Norms, Rules and Regulations

1. PREAMBLE :

The Master of philosophy in Physical Education (M.Phil) programme in meant for candidates desirous of pursuing Research programme in Physical Education and Sports and for preparing a professional cadre of Physical Education Teacher/ Educators and Directors in colleges and university departments.

2.REGULATIONS

The syllabus is for one year M.Phil Degree programme under CBCS system - Regular) will be implemented from the academic year 2009 – 10 onwards.

3. ELIGIBITLITY FOR ADMISSION:

A Candidate shall be admitted to the M.Phil degree in Physical Education if he / she produces satisfactory evidence to the effect that he/she has successfully completed Master's Degree in Physical Education, M.P.Ed., or its equalant Degree approved by the syndicate of the Tamil Nadu Physical Education and Sports University, Chennai.

For securing admission to the M.Phil Programme, candidates must have secured 55 % of marks in the respective PG Degree programme or any equivalent programme in the case of inter – disciplinary subjects. However, the minimum marks for the SC/ ST candidates would be 50 % . For all the candidates, who have completed their PG Degree on or before 1991. The minimum eligible marks for admission to M.Phil would be 50 % .

4. SCHEME OF SELECTION :

As Entrance test and interview would be administered for all the applicants, the performance in that would be taken into account along the marks scored in the PG programme. The written Test would comprise objective Questions for 75 marks and the interview would carry 25 marks. The Rank list will be prepared accordingly.

5. COURSE OF STUDY:

M.Phil, Programme shall be of a duration of one Academic year with two semesters. A student should complete the M.Phil Programme within three years after registration. The Total working days of each semester shall be 90 days exclusive of the period of the admission and examination etc., The medium of Instruction and examination shall be English.

6. SEMESTERS:

An Academic year is of two semesters.
First Semester – July to November
Second Semester - December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days.

7. CHOICE BASED CREDIT SYSTEM (CBCS):

The CBCS in M.Phil, programme would have the following components and the minimum credit requirements for each component to be completed in one year are:

Core Courses	- 20 Credits
Dissertation	- 8 Credits
VPP	- 2 Credits
Total	30 Credits

8. COURSE WEIGHT:

Courses will be designed with weightage depending upon the content, duration and specialization.

9. CREDIT DISTRIBUTION

SEMESTER – I (First Year)					
Subject Code	Title of the Paper	L	T	P	C
03101	Research Methodology and statistics in Physical Education	5	0	0	5
03102	Area of specialization	5	0	0	5
(Any One of the Following)					
03102 A	Science of Sports Training & Coaching				
03102 B	Applied Yoga				
03102 C	Sports Medicine				
03102 D	Exercise Physiology &Nutrition				
03102 E	Sports Psychology				
03102 F	Sports Sociology				
03102 G	Sports Management				
03102 H	Sports Biomechanics				

03102 I	Sports Technology				
03102 J	Test, Measurement and Evaluation *				
03102 K	Fitness and Wellness*				
	Total	10	0	0	10
SEMESTER II (Second Year)					
Subject Code	Title of the Paper	L	T	P	C
03201	Area of Dissertation	5	0	0	5
03202	Computer Operations Communication & Educational skills (pedagogical skill includes practical Training in teaching)	5	0	0	5
03203	Dissertation	0	6	6	6
03204	Viva - Voce		2	2	2
03204	Village Placement Programme	0	2	2	2
	Total	10	10	10	20
	Grand Total(Semester I & II)	20	10	10	30

L- Lecture Hour T- Tutorial Hour P – Practical Hour C- Credits

10. ASSESSMENT

Assessment of the students is consisting of continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 40 : 60.

11. CONTINUOUS INTERNAL ASSESSMENT (CIA)

a) The CIA marks shall be awarded based on the following:

Theory	Marks
Best Scores of two tests out of three tests	20
Model Exam	10
Seminar	10
Total	40

12. END SEMESTER EXAMINATION (ESE)

Except in the case of project-work and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 60. Standard practical examination for 60 marks will be conducted with external examiner.

13. EVALUATION

The following procedure will be followed for evaluation

a) The answer scripts are evaluated by both internal and external examiners (Double valuation)

b) If there is 10% difference between the two examiners, a third revaluation is conducted, which will be final.

c) Theory papers : Duration Three Hours – External

Part A (10 x 1) - 10 (Question type)
Part B (5 x 4) - 20 (either or type)
Part C (3 x 10) - 30 (Essay type – 5 questions)
---
60 marks
---

d) For a pass in each paper, the candidate is required to secure at least 50% in the semester Examinations .

14. THE AWARD OF GRADES IS AS FOLLOWS.

Marks	Grade	Description	Grade Points
90 and above	S	Superior	9.0 – 10.0
80 to 89	A	Very Good	8.0 – 8.9
70 to 79	B	Good	7.0 – 7.9
60 to 69	C	Very Fair	6.0 – 6.9
50 to 59	D	Satisfactory	5.0 - 5.9
Less than 50	F	Failure	

If a student has any grievance relating to his/her CIA, he/She may, within seven working days of the declaration of the Scores/thereof, prefer an appeal through his/her class Advisor to appear committee, which will consists of the HOD, class Advisor and course teacher. The Appeals committee will review/peruse the student's records work. Any appeal should be made along with an appeal fee of Rs.200/- per course /paper. The decision of the appeals committee shall be final.

Double valuation system will be adopted for ESE valuation and therefore revaluation is not permitted whereas retotaling can be done by paying a fee of Rs.300/- per paper. Within in 15 days from the publication of results.

15. SCHEME OF EXAMINATIONS :
MARKS DISTRIBUTION

SEMESTER – I (First Year)				
Subject Code	Title of the Paper	Internal	External	Total
03101	Research Methodology and Statistics in Physical Education	40	60	100
03102	Area paper of specialization	40	60	100
(Any One of the Following)				
03102 A	Science of Sports Training & Coaching			
03102 B	Applied Yoga			
03102 C	Sports Medicine			
03102 D	Exercise Physiology &Nutrition			
03102 E	Sports Psychology			
03102 F	Sports Sociology			
03102 G	Sports Management			
03102 H	Sports Biomechanics			
03102 I	Sports Technology			
03102 J	Test, Measurement and Evaluation *			
03102 K	Fitness and Wellness*			
	Total	80	120	200
SEMESTER- II (Second Year)				
Subject Code	Title of the Paper	Internal	External	Total
03201	Area of Dissertation	40	60	100
03202	Computer Operations Communication & Educational skills (pedagogical skill includes practical Training in teaching)	40	60	100
03203	Dissertation	40	60	100
03204	Viva – Voce	---	50	50
03205	Village Placement Programme	50	---	50
	Total	170	230	400
	Grand Total(Semester I & II)	250	350	600

SYLLABUS, COURSE OUTCOMES AND MAPPING (CO's and PO's)

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
DEPARTMENT OF PHYSICAL EDUCATION
M. Phil DEGREE PROGRAMME

MASTER OF PHILOSOPHY (M.Phil)

PROGRAM EDUCTIONAL OUTCOMES (PEOS)

PEO-1) The Master of philosophy in Physical Education (M.Phil) programme in meant for candidates desirous of pursuing Research programme in Physical Education and Sports and for preparing a professional cadre of Physical Education Teacher/ Educators and Directors in colleges and university departments.

PEO-2) The curriculum and syllabus have been structured in such a way that each of the course meets one or more of the outcomes related to the skills, knowledge, and behaviors that students acquire as they progress through the program. Further, each course in the program spells out clear instructional objectives, which are mapped to the student outcomes.

PROGRAMME OUTCOMES

PO-1) Domain knowledge: Apply the knowledge of basic sciences that may be relevant and appropriate to physical education and sports sciences leading to solution of complex sports related issues and problems.

PO-2) Problem analysis: Ability to Identify, define the actual requirements, formulate, research literature, and analyze complex physical education and sports sciences related
Problems to reaching substantiated conclusions.

PO-3) Design/Development of Solutions: Ability to design, implement, and evaluate process or program to meet desired needs in the field of physical education and sport sciences.

PO-4) Individual and team work: Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings to accomplish a common goal.

PO-5) Ethics: Understanding of professional, ethical, legal, security, social issues and responsibilities in teaching, learning and evaluation.

PO-6) Communication: Ability to communicate effectively among a range of audiences/ stakeholders

PO-7) Impact: Ability to analyze the local and global impact of physical activities and sports and games on individuals, organizations and society.

PO-8) Professional Development: Recognition of the need for and an ability to engage in continuing professional development.

PO-9) Identification of Needs: Ability to identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of physical education and sport sciences programs.

PO-10) Integration: Ability to incorporate effectively integrate Science/Technology/ IT-based solutions to applications

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X	X	X	X	X	X	X	X	X	X
PE0-2	X		X	X	X			X	X	X

03101

RESEARCH METHODOLOGY AND STATISTICS IN PHYSICAL EDUATON

UNIT I Research: Criteria of locating and selecting a research problem. Hypothesis meaning, types, formulation, and research hypothesis. Variables and its types. Fixing the level of significance and degrees of freedom for a research problem. Construction and standardization of questionnaire. Recent research trends in Physical Education.

UNIT II Research Design: Meaning, types, significance and criteria for selecting a suitable research design: Quasi experiment – Cross sectional design – longitudinal design – Double blind placebo design – repeated measures design – rotated group design – Independent factorial design – mixed factorial design. Descriptive Research: Case study, survey method.

UNIT III Mechanism of writing research proposal**:** report and synopsis. Method of writing abstract and full paper for presenting in a conference and to publish in journals. Chapterization and thesis format. Criteria for establishing research laboratories for specialized subjects

UNIT IV Statistical concepts : Data – Normality of Data - Normal curve , Meaning, purpose, calculation Type I, II,III & IV errors and advantages of " t "ratio – simple analysis of variance (one way ANOVA) – Factorial design – two way and three way factorial design – repeated measures ANOVA- Two way ANOVA with one factor repeated ANOVA – post hoc tests. Application of MS Excel and SPSS for statistical calculations.

UNIT V Analysis of Covariance**:** Meaning, purpose, calculation and advantages. Pearson Product Moment Correlation, Rank order correlation – Biserial Correlation – Partial and Multiple Correlation prediction and wherry do little method – Phi Correlation - Chi square, Contingency coefficient. Concept and calculations of Mann Whitney U test, Kruskal Wallis H test - Concepts of multivariate ANOVA and ANCOVA (MANOVA, MANOCOVA) - concept of Factor Analysis.

Reference:

1) Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.,

2) Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

3) Clarke, H. Harrison and Clarke David H. (1972) Advanced Statistics, New Jercy: Prentice Hall Inc.

4) Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

5) Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

6) Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

7) Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

8) Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

9) Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

COURSE OUTCOME students are able to	
CO-1	Apply the knowledge in the field of physical education and movement activity
CO-2	Knowing design about physical education.
CO-3	Giving research report about Physical education.
CO-4	Learning about ANOVA
CO-5	Learning about ANOVA and ANCOVA (MANOVA, MANOCOVA)

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1		1	1	1		1		2	3	2
2	2		3		2		1		2	
3		2		2	3	2		3		1

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2	2	1
3	1	3

* * * * * * *

03102
Area of Specialization
03102 A
SCIENCE OF SPORTS TRAINING AND COACHING

UNIT – I Training **:** Definition – Aims – Principles of Sports Training – Training load – Principle of load – Components of load – Over load – Symptoms – causes – remedy – means of recovery .Techniques – Aim – Phases – Methods of technical training. Tactics : - Aim – Tactical Action – Principles of Tactical preparation.

UNIT – II Periodization:– Definition types – top form – Aim and content of different periods. Planning:– Definition – importance – types – principles - Formulation of yearly plan – training session .Talent Identification:– Definition principles – sports pedagogic– scientific approach on task analysis method of instruction – test – physical parameters fitness – skills – performance – reason for testing – Doping - Definition – Classes – Methods – WADA – Side affects.

UNIT - III Motor Abilities Strength: – Definition – Types – factors determining strength – methods of improvement of strength – organization of strength training - Exercise for specific strength – preventive measure in strength training .
Speed – Definition – Types – factors determining speed – methods of improvement of speed – speed Barrier. Flexibility : - Definition – Types – Importance – factors determining flexibility.

UNIT - IV Endurance : Definition – Importance – Types – Classifications – factors determining endurance – Methods of Improvement of Endurance - Carbohydrates loading.Co-ordinative abilities : Nature – Definition – Descriptions – Methods of improvement of Co-ordinative abilities .

UNIT - V Coaching : Principles Philosophy – Process. Management: Preparation for the competition – Pre, during and post competitions. Performance Analysis : Aim – Objectives – Methods . Psychological preparation : Stress management. Diet and performance.

Reference :

1. Frank.W.Dick(2006), " Sports Training Principles". New Delhi : Friends publications.
2. Harre.D (1988) " Principle of sports training" , Berlin Sports verlag.
3. Matreyev L.. (1981) "Fundamentals of Sports Training", Moscow :Sports verlag.
4. Singh H.:(1991), "Science of Sports Training" , New Delhi :D.V.S. Publication.
5. Scholisch, M.:(1988) "Circuit Training", Berlin : Sports verlag,.
6. Hiroshi Toyoda (2000) " Coaching course level II " ,Lausanne : Federation Internation De Volleyball.
7. S.Subramanian, Richard Bate (1993) , " Coaching manual" Football Confederation , Malaysia.

COURSE OUTCOME students are able to	
CO-1	Training about Practice, Ground activities, Physical education
CO-2	Periodization of planning WADA
CO-3	Motor Abilities Strength about exercise
CO-4	Endurance of Methods of improvement of Co-ordinative abilities
CO-5	Coaching Methods Psychological preparation

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1		1	3	1		2	3		2
2	2			1		2	3		1	3
3	2		2		2		1	1	2	

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	3	1
2	1	2
3	2	3

03102 B

APPLIED YOGA

UNIT I Yoga : Aim, philosophy and scope of yoga –contributions of Bhagavad Gita, Yoga sutras and Thirumanthiram to yoga - The synthesis of schools of yoga for integrated personality and transcendence – Astanga yoga for total Education – Misconceptions and clarifications about yoga.

UNIT II Benefits of yogic practices: – Physical , physiological, mental, moral, emotional , social and spiritual benefits of yogic practices:- Kriyas, Asanas, Pranayamas,Mudras, Bandhas, Meditation - suitable yogic practices for children , Adolescents, Adulthood, old people, differentially abled people, yoga for women, yoga and sports.

UNIT III Yoga and Mind – Role of yoga on personality, Learning, perception, motivation, emotion, Intelligence, memory. Psychological qualities - yoga and psychological disorders – Existence of Nadis, Chakras and the nervous system, yogic practices for awakening chakras, curing diseases and imbalances in the nadis and chakras.

UNIT IV Principles of yogic diet :– yogic diet and Gunas Integrated approach of yoga therapy . Integrated yoga module for the promotion of positive health – yoga for wellness- - Shastra – Yoga and physiology and pathology in the yoga Shastras – Yoga and diseases – yoga and various systems of medicine – Therapeutic yoga – Alternative therapies.

UNIT V Yoga and spirituality : Yoga – Religions – spirituality - Role of yoga and Religion on spirituality – ethical, moral and social values in Religions and yoga - Divine virtues and powers – ways to inspire the values – yoga for pure consciousness.

References :

1. Iyengar (1989) Light on Yoga, London :" unwin paper backs.
2. Shivanantha Saraswati (1975) Yogic therapy, Ganhati : Brahmacharya yogeswar umachal yogashram
3. Rishi Vivekananda (2006) practical yoga psychology, munger : Yoga publications Trust.
4. Satyananda Saraswati Swami (2007) Kundalini Tantra, Munger : Yoga publication Trust

5. Mengal S.K. (1991) Psychological Foundations of Education, ludhana : Prakash brothers.

6. Visharadananda Swami (2007) , Human values, Bangalore : Swami Vivekanda yoga prakashana.

7. Dhyananda Saraswati swamy (2008), The value of vaues. Chennai : Arsha vidya centre.

8. Vivekananda Swami (2005) Hinduism Chennai : Sri Ramakrishna Math.

9. Mahajan Vidya Dhar (1976) History of India New Delhi : S.Chand & Co.,

10. Satyananda Saraswati Swami (2008)Asana, Pranayama Mudra Bandha Munger : Yoga publications Trust.

11. Chandrasekaran K (1999) sound health through yoga sedapatti : Prem kalyan publications.

COURSE OUTCOME students are able to	
CO-1	Learning about history of yoga
CO-2	About Kriyas, Asanas, Pranayamas,Mudras, Bandhas, Meditation
CO-3	Existence of Nadis, Chakras and the nervous system, yogic practices for awakening chakras
CO-4	Benefits of yoga diet, wellness, basics
CO-5	Yoga and spirituality

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1		2	3	1		2	1		1	
2	1		1	3	2	1	2		3	2
3	2	3		2	1	3		2		1

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
1		
2	2	2
3	3	1

* * * * * * *

03102 C

SPORTS MEDICINE

UNIT I Sports Injuries of Upper Limb : Fracture Clavicle, Humerus – Shoulder Dislocation – Impingement Syndrome - Rotator Cuff tendonitis – Supraspinatus tendonitis – Subacromion bursitis – Bicipital tendinits – Adhesive Campsulitis – Tennis Elbow – Golfer's Elbow – Thrower's Elbow – Wrist ganglion cyst – Thumb Sprain – Mallet Finger – Finger sprain.

UNIT II Sports Injuries of Lower Limb : Groin Strain – Piriformis syndrome – Ostietis pubis – Quadriceps strain – Hamstring strain – Iliotibial band syndrome – MCL & LCL sprain – Menisus tear – Jumper's knee – Runner Knee – Tennis leg – Calf strain – Shin splint – Achilles tendinitis – Retrocalcaneal bursitis - Ankle sprain – Pott's fracture – March fracture – Bunion – Hammer toe – Turf toe – plantar Fastcitis – Ingrown Toe nail.

UNIT III Sports Injuries of Head and Neck and Trunk : Head Injuries :Concussion – Contusion – Hemorrhage – Fracture. Neck Injuries : Strain – Fracture – Contusion- Cervical nerve stretch syndrome – Whiplast injury – Wry neck – Slipped Disc.

UNIT IV General Medical conditions**:** ,Definition ,causes, Clinical features, prevention and management of the following conditions : Coronary Heart Disease : Angina Pectoris – Myocardial Infarction . Diabetes Mellitus – Hypertension – Dyslipidemia – Obesity –COPD.

UNIT V Females Specific Sports Injuries – Sports Amenorrhea – Injury to female reproductive tract – Menstrual Synchrony – determination – Exercise and pregnancy – Eating disorders in atheletes.

References:

1. Lars Peterson and Per Renstron (2001) Sports Injuries – Their prevention and treatment Florida ,United States , Human Kinetics.

2. Richard B.Birrer (2004) ,Sports medicine for the primary care physician, Florida ,United States , Human Kinetics.

3. Ronald Bahr & Sverne Macullum (2004).Clinical Guid to Sports Injuries, Florida ,United States , Human Kinetics

4. Christoper M Norris (2004) , Sports injuries Diagnosis and Management.London butterworth - Heinemann.

5. Bruckner and Karim Khan (2006), Clinical Sports medicine, Australia Mcgraw Hill.

6. David C Reid (2000) Sports injuries- Assessment and Rehabilitation,Allahabad Churcill livingstone..

COURSE OUTCOME students are able to	
CO-1	Learning about Sports Injuries of Upper Limb
CO-2	Learning about Sports Injuries of Lower Limb
CO-3	Sports Injuries of Head and Neck and Trunk
CO-4	General Medical conditions
CO-5	Females Specific Sports Injuries

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2	2		3		3	1		1	
2	1	1		2	1	1		3		2
3		3	1		2	1	2	1	2	

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	
2		1
3	3	2

* * * * * * *

03102 D

EXERCISE PHYSIOLOGY AND NUTRITION

UNIT I Energy **:** Definition, Biological energy cycle, ATP – aerobic and anaerobic energy systems – during rest and exercise – Recovery from exercise - the oxygen debt – replenishment of energy stores during recovery. Muscle glycogen synthesis – liver glycogen replenishment – restortation of own stores – Measurement of energy, work and power definition of efficiency – cycle ergo meter – mechanical and electrical treadmill – step bench.

UNIT II Structure and functions of skeletal muscle – Sliding filament theory of muscular contraction – Nervous control of muscular movement – Basic structure and functions of the nerve. Neuro muscular junction different types of nervous system.

UNIT III Pulmonary Ventilation – Minute ventilation – ventilator mechanics – pressure change – gas exchange and transport – Blook flow and gas transports – cardiac output during exercise – circulating mechanics – changes in pressure and resistance during exercise – Cardio – respiratory control at rest and during exercise.

UNIT IV Physiological Effects of physical training – Training effects – factors influencing training effects – Exercise and training for health and fitness – causes and risk factors of cardio – vascular diseases – the exercise prescription – performance of altitude – Athletic performance at attitude – training and altitude – Heat balance and climatic condition – Temperature regulation and heat disorder – physiological responses to cold.

UNIT V Nutrition and exercise performance – Diet before activity, during activity, following activity exercise and weight control – Exercise and acid balance – acid base balance following heavy exercise – Exercise and endocrine system – Characters and mechanism of hormonal action, Hormonal responses to exercise and training – Effects of age and gender – Age and athletic performance, age and menstruation – exercise during pregnancy.

References:

1. Fox, Edward L and Mathews Donald K (1982) , " The Physiological basis of physical education and athletics , New York : Sander College publishing.

2. Macrdle. Williams D et al : (1986), " Exercise Physiology – Energy Nutrition and Human performance", ed.2.Phildelphia, Lea and Febiger.

3. Karpovich and Sinning ,(1999) , " Physiology of Muscular Activity", Philadelphia London : W.B. Seunders company.

4. William D. Mcardle, Frack I Katch, Victor L Katch (1980), " Exercise Physiology" Lea and Febigen Phildelphia.

5. David H Clarke ,(1995) , " Exercise Physiology",Englewood cliffs New Jersey: Printice Hall Inc.,

6. Morehouse and Miller " Physiology and Nutrition" The C.V.. Mosby company.

7. Larry G Shaver, (1988), " Essentials of Exercise Physiology", Surjeet publications.

COURSE OUTCOME students are able to	
CO-1	Energy work and power definition of efficiency
CO-2	Structure and functions of skeletal muscle
CO-3	About Ventilation
CO-4	Exercise and training for health and fitness, Athletic performance at attitude
CO-5	Nutrition and exercise performance and diet activities for fitness

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1	3		3	1		1	3	2	
2		2	1		2	3		2	3	2
3	2			2		1	2		1	

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2	3	
3	1	2

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03102 E

SPORTS PSYCHOLOGY

UNIT I Introduction: Meaning, Definition, Nature, Development and Scope of Sports Psychology – Facets of Sports Psychology: Developmental, Personality, Learning and Training, Social and Psychometrics.

UNIT II Motor Learning: Definition, Closed Vs Open Skills, Stages of Learning: Cognitive, Associative And Autonomous Skills – Practice – Feedback – Servo Mechanism, Memory: Stages and Types of Memory, Forgetting – Types and Theories of Forgetting.

UNIT III Cognitive Process in Sports: Cognition: Definition, Characteristics of Cognitive Process in Sports, Sensation: Definition, Role of Sensation, Characteristics of Sensation, Attention & Concentration: Definition, Dimensions, Perception: Definition, Characteristics of Perception, Importance of Perception in Sports.

UNIT IV Motivation **:** Confidence and Goal-Setting : Motivation: Definition , Types – Extrinsic, Intrinsic, Direct and Indirect, Athlete Need and Motivation - Need for stimulation , Need for Affiliation , Need for feel worthy, Theories of Motivation - Instinct theory, Drive Reduction, Need Hierarchy , Need for achievement theory , Confidence – Definition, Types and Theories: Self- Efficacy and Vealey's Theory of Confidence, Goal Setting – Types – Out come & performance , Goal Setting Training Program.

Unit V: Psychological Factors and Performance Excellence: Anxiety, Anger, Arousal, Aggression, Emotion, Frustration, Locus of Control, Personality and Stress , Psychological Skills Training (PST) - Definition, Importance of PST , Myths about PST.

References:

1. Rainer Martens (1987) - Coaches Guide to Sports Psychology , Illinois, United States,Human Kinetics.

2. Jack H. Llewellyn & Judy A. Blucker (1989) - Psychology of Coaching : Theory and Application, 2nd Edition, , United States , Burgess Publishing Company.

3. Robert S Weinberg & Daniel Gould (2003) – Foundations of Sport 3rd edition , Illinois, United States , human Kinetics .

4. Shaw D F, Gorely T. and Corban R M (2005) – Sports and Exercise Psychology, UK,

BIOS Scientific Publishers.

5. Gangopadhyay S R (2008) – Sports Psychology , New Delhi, India, Sports Psychology Publications.

6. Kamelsh M.L.(1988) Psychology in Physical Education and Sports,New Delhi: Metropolitan

7. Alderman A.B. (1974), Psychology Behavior in Sports Sounder : W.B. Saunders company.

8. Suninn, R.N.(1982) Psychology in Sports, Delhi : Surjit Publication, 1982.

9.Elangovan R (2001) Utarkalvi Ulaviyal , Tirunelveli : Aswin Publications.

10. Gita Mathew W. (1997) , Sports Psychology , Karaikudi : Shijin and Shijin Brothers.

COURSE OUTCOME students are able to	
CO-1	Introduction about Sports Psychology
CO-2	Motor Learning
CO-3	Cognitive Process in Sports
CO-4	Motivation Goal Setting Training Program
CO-5	Psychological Factors and Performance Excellence

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1		2	2		1	
2	1		2	3	2	1	1	3		1
3		3		2	3		1		2	2

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	
2	3	1
3	1	2

03102 F

SPORTS SOCIOLOGY

UNIT- I Sociology and Sports : Definition - Origin and development - Nature and scope of sociology -Sociology as a science - Importance of sociology - what is sports sociology - Relationship between sports and sociology.

UNIT - II Society , Culture and Sports : Definition - characteristics of a society - types of sociology individual and society. Community : Definition of community - Elements of a community -Types of community .Culture : Definition of culture - characteristics of culture - Relationship between culture and sports.

UNIT – III Socialization and Sports : Definition - Need for socialization – process of socialization – stages of socialization – Agencies of socialization – sports and socialization.

UNIT - IV Social stratification and Sports : Meaning, characteristics - The process of stratification - caste and class - Difference between caste and class- Relationship between caste and sports.

UNIT - V Women and sports : Status of women in India – Historical Role of Women – Social issues in women's sports – Global status of women in sport – Barriers for women in sports.

References :

1. Pascal, G : (1979) FUNDAMENTAL OF SOCIOLOGY 3rd Rev.Ed. Bombay, Orient Longman,

2. Ogburn – W.F and Nimkoff,(1964), A Hand book of SOCIOLOGY London, Routledge and Keganpual Ltd., 1964.

3. Giddens A.,(1989), SOCIOLOGY , Cambridge , Polity Press 1989.

4. Yadvinder Singh, (2005), SOCIOLOGY IN SPORTS,New Delhi,Sports Publication.

5. Nixon : (2006)OUTLINES AND HIGHLIGHTS FOR A SOCIOLOGY, USA,Academic Internet publishers.

6. Ronald B. Woods, (2006) " SOCIAL ISSUES IN SPORT" , USA, Human Kinetics

7. Jain . (2007) " SPORTS SOCIOLOGY".New Delhi, Khel Sahitya Kenra

8. Howard L.Nixon, James H. Frey (1995)" SOCIOLOGY OF SPORT". UK, Wadsowth publishing company

9. Laker Anthory : (2003) SOCIOLOGY OF SPORT AND PHYSICAL EDUCATION,USA , Routledgfalmer

COURSE OUTCOME students are able to	
CO-1	Sociology and Sports
CO-2	Society , Culture and Sports
CO-3	Socialization and Sports
CO-4	Social stratification and Sports
CO-5	Women and sports

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		2			2	3	2		3
2		1	3	2	3		1	3	2	
3	1		1	1		1		1	1	1

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	3
2	1	
3		2

03102 G

SPORTS MANAGEMENT

UNIT I Social Context for modern sports : Need for New Structure in Sports Today – International Sports Enviornment : IOC and International Federations – National Sports Environment : National Olympic Committees – National Federations – Governmental and Quasi – Governmental Organizations – Sports Conflicts – Assumptions about Conflict in Sports – Internal disputes within Federations – Conflicts concerning Individual Rights and obligations – conflicts arising form anti – doping Tests.

UNIT II Managing Sports in the 21st century : Defining Sports and Sports Management - Nature and scope of the sports industry – Unique aspects of the sports management – sports management competencies – Future challenges and opportunities for sports managers – future of sports industry/ organizations.

UNIT III The Sports Manager : Basics of Sports Management – Managing in the Sports Environment – Managing People and Administrative Units – Management functions in sports – motivating people – understanding leadership – enhancement of management Abilities : Fundamentals – Sports Budget – Guidelines for mobilization and utilization of funds.

UNIT IV Sports organizations and Technology : Technology – Research on technology and organizations – Critiques of the technology imperative – Micro – Electronic Technologies – Relationship between Technology and Organizational Structure.

UNIT V The future of sports management : Why sports managers need to understand research – commercial and academic researches in sports management – sports management Research : Key concepts – Research process – current challenges in sports management Research – The future of sports management Research.

Reference:

1. Ruben Acosta Hernandez (2007) Managing Sports Organizations, Illinois Human Kinetics.
2. Trevor Slack, et.al (2007) Understanding Sports Organizations, Illinois Human Kinetics.
3. Jean – Loup chappelet and Emmanuel Bayle (2006) Strategic and performance management of Olympic sports organization.
4. Bernard J Mullin (2007) Stephen Hardy, William A Sutton, " Sports Marketing", Human Kinetics.
5. Gil Fried. (2007) Managing Sports facilities," Human Kinetics

6. Trevor slack , Milena M Parent, Understanding Sports Organisations, Human Kinetics.
7. Buchu A charles (1993) Management of Physical Education and Sports , St. Louis , Mosby Year Book
8. Prasad L.M.(1995) Principles and practice of Management, New Delhi: Sultan Chand & Sons.

COURSE OUTCOME students are able to	
CO-1	Social Context for modern sports
CO-2	Managing Sports in the 21st century
CO-3	The Sports Manager - Managing in the Sports Environment
CO-4	Sports organizations and Technology
CO-5	The future of sports management

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1		2	1		3		1	2	1	1
2	1		3	1	1	2			2	
3	2	1		2	2	3	3	1		3

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2		2
3	3	

03102 H

SPORTS BIOMECHANICS

UNIT-I Definition of Sports Biomechanics- Branches-Dimensions & Units-Anatomical and mathematical review- Movement constraints- Forces: Maintaining Equilibrium or Changing Motion-definition of forces-Classification of forces-Force composition- Force resolution-Static equilibrium.

UNIT-II Linear Kinematics: Describing Objects in Linear Motion-Vectors and scalars- Motion descriptors (position, velocity, acceleration)-Uniformly accelerated motion Linear Kinetics: Explaining the Causes of Linear Motion-Newton's laws-Friction-Impulse-Momentum-Conservation of Momentum-Collisions.

UNIT-III Explaining the Causes of Motion without Newton- Work, Energy, Power-Work-Energy relationship-Torques and Moments of Force: Maintaining Equilibrium or Changing Angular Motion-Torques/Moments-Equilibrium-Center of Gravity

UNIT-IV Angular Kinetics: Describing Objects in Angular Motion-Angular position, velocity, acceleration-Anatomical reference descriptors-Fluid Mechanics: Effects of Air and Water-Lift, drag, buoyancy-Fluid resistance-Relative motion

UNIT-V Biomechanical characteristics of walking-running-Biomechanics of jumping-Mechanical characteristics of throwing-Qualitative Analysis Techniques-Technique Enhancement-Training Enhancement-Injury Prevention-Quantitative Analysis Techniques-Kinematic tools-Kinetic tools-Tissue-related tools.

Reference:

1. McGinnis, Peter M.(2005) Biomechanics of Sport and Exercise. Human Kinetics.

2. Hay, J. (1993). The Biomechanics of Sports Techniques. Benjamin Cummings.

3. Knudson, Duane V.(2002) Qualitative Analysis of Human Movement. Human Kinetics.

4. Robertson, Coldwell et .al.(2004)Applications of research methods in biomechanics, Human Kinetics. ISBN: 073603966X

5. Zatsiorsky Vladimir M., Zatsiorsky Vladimir M., (2002) Kinetics of human motion, Human Kinetics, ISBN: 0736037780.

6.Roger Bartlett,(2007), Introduction to Sports Biomechanics: Analyzing Human Movement Patterns, publisher: Routledge, ISBN 0415339936.

7. Susan J Hall, Susan Hall, (2002) Basic Biomechanics with Dynamic Human, McGraw-Hill Humanities/Social Sciences/Languages, ISBN:0072552417.

8.Carl J. Payton and Roger M. Bartlett, (2008) Biomechanical Evaluation of Movement in Sport and Exercise, The British Association of Sport and Exercise Sciences Guidelines, Routledge.

COURSE OUTCOME students are able to	
CO-1	Definition of Sports Biomechanics
CO-2	Linear Kinematics: Describing Objects in Linear Motion
CO-3	Explaining the Causes of Motion without Newton
CO-4	Describing Objects in Angular Motion-Angular position, velocity, acceleration-Anatomical
CO-5	Biomechanical characteristics of walking-running-Biomechanics of jumping

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1	3	3		1	3	2	1		3
2		2	2	1		1		3	2	
3	2		1	2	3		1		1	2

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	
2		1
3	2	2

03102 I

SPORTS TECHNOLOGY

UNIT I INTRODUCTION Sports engineering definition, purpose, advantages and applications; General principles and purpose of instrumentation in sports, Workflow of instrumentation and business aspects; Technological and social impacts on sports.

UNIT II SPORTS MATERIALS Adhesives- Nano glue, nano moulding technology, Nano turf, Foot wear production, Factors and application in sports, constraints. Foams- Polyurethane, Polystyrene, Styrofoam, closed-cell and open-cell foams, Neoprene, Foam Product Case Study. Engineering Polymers- Classification, application in sports, Smart Materials - Shape Memory Alloy (SMA), Thermo chromic film , High-density modeling foam, Motorcycle Gloves materials.

UNIT III THERMOPLASTICS

Polycarbonate(PC), Polyhydroxyalkanoates (PHAs), Polyketone (PK), Polyester Polyethylene (PE), Polyetheretherketone (PEEK), Polyetherimide (PEI), Polyethersulfone (PES), Polyethylenechlorinates (PEC), Polyimide (PI), Polylactic acid (PLA), Polymethylpentene (PMP), Polyphenylene oxide (PPO)

UNIT IV FIBRES, FERROUS METALS

High Tech Fibres- Carbon Fibre & Aramids, Uses and applications of Carbon Fibre in Sports. Resins- types , Composite resins and Thermoset resins, Most common and less common resins, Resin Reinforcement, case study, future uses. Ferrous Metals - Mild Steel, Cast Iron, Stainless Steel, application in sports. Alloys - Sheet form, Plate form and Extrusions.

UNIT V APPLICATION OF NANO TECHNOLOGY

Applications in Medicine, Electronics, Space, Food, Fuel Cell, Solar Cells, Batteries, Fuels, Better Air Quality, Cleaner Water, Chemical Sensors, Sporting Goods with nano technology- Nanocomposite barrier film, Bicycle components strengthened with carbon nanotubes, Golf shafts with nanoparticles filling any voids in the shaft material, Golf balls using nano-enhanced polymer,. Carrier areas and risks of nano technology.

References :

1. John Mongillo,(2001), "Nano Technology 101 " New York : Green wood publishing group.

2. Finn, R.A. and Trojan P.K.(1999) " Engineering Materials and their Applications" UK: Jaico Publisher .

3. Charles J.A. Crane, F.A.A. and Furness , J.A.G. (1987) " Selection of Engineering
Materials" UK : Butterworth Heiremann.

Web References

1. www. Astm.org/ labs/ pages/131350 .htm
2. www. Applied sports materials.com
3. www.sports Engineering .com

COURSE OUTCOME students are able to	
CO-1	Introduction about Sports engineering definition, purpose, advantages and applications
CO-2	SPORTS MATERIALS Adhesives- Nano glue, nano moulding technology, Nano turf, Foot wear production
CO-3	Learning about THERMOPLASTICS in PC,PHA's, PK, PE, PEEK, PEI, PES,PEC, PI, PLA, PMP, PPO
CO-4	About FIBRES, FERROUS METALS
CO-5	Applications in Medicine, Electronics, Space, Food, Fuel Cell, Solar Cells, Batteries, Fuels, Better Air Quality, Cleaner Water, Chemical Sensors, Sporting Goods with nano technology

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1		2	3		3	3		2		1
2	1		2	1	2		1	3	2	
3		1		3		2	3		1	2

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	3	2
3	1	3

03201

AREA OF DISSERTATION

The Syllabus for the University Examination may be prepared by the Guide himself based on the following guidelines and the topic.

The relevant Questions may also be prepared accordingly.

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing and training procedures – Statistical Technique.

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design.

UNIT – IV Data Collection : Data Collection – Methods of Data Collection – Processing and Analysis of data – Statistical Technique – Testing Hypothesis – Interpretation – Technique of interpretation – Computer Analysis of data.

UNIT – V Significance of Research Writing – Steps in Research Writing – Lay out – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports – Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

1) Best W John and James V Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

2) Kothari C.R. (1985) Research Methodology NewDelhi: Wiley Eastern Limited.

3) Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.,

4) Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

5)Clarke, H. Harrison and Clarke David H. (1972) Advanced Statistics, New Jercy: Prentice Hall Inc.

6) Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

7) Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

8) Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

9) Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

10) Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

11) Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

COURSE OUTCOME students are able to	
CO-1	Fundamental Concepts
CO-2	Methodology
CO-3	Research Design
CO-4	Data Collection
CO-5	Significance of Research Writing

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1		3		2		2	3			2
2		2	2		1	1		2	3	
3	1		1	3	2	2	1		1	

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	2
2	3	
3		1

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03202

COMPUTER OPERATIONS, COMMUNICATIONS AND EDUCATIONAL SKILLS

UNIT : I Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT : II Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create insert – update – delete – select – commit – front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB.

UNIT: III What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face to face interactions (situations) – Written – Letter Writing – Report Writing – Memo's – Note making - Agenda preparation.

UNIT :IV Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking , Pronunciation , structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT: V Pedagogy : Meaning, Theories of pedagogy (Benjamin Bloom, Jean Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills, sex education – Integrating skill development, modernizing education and skill development – Basic and higher education : Issues and challenges.

COMPUTER OPERATIONS – SYLLABUS - PRACTICALS

1. MS – WORD

1. Create advertisement is MS WORD
2. To illustrate the concept of mail merging in word.
3. Document creation with scientific notation
4. Test manipulation with scientific notation
5. Table creation, table formatting and conversion.
6. Mail Merger and letter preparation
7. Drawing and Flow Chart.
8. Show the different effect for the given text in the document.
9. Create a table of employee and calculate the next salary.
10. Design a table with merge cells and split cells technique.

2. SPREAD SHEET

11. To create a Spread Sheet to analyze the marks of the students in a class and to create appropriate charts.
12. Charts in Spread Sheets
13. Formula and Formula Editor
14. Inclusion of objects, pictures and graphics protecting the document and sheet.
15. Sorting and import/ export features.
16. Create suitable chart to show the census data in Indian Sports.
17. Create a suitable chart to show the students average in the class.
18. Create an electronic spread sheet of student marks, and find the total, average and respective class secured by each student.
19.
20. Generate the numbers vertically starting from 10 to 100 with step value 5.

3. POWER POINT

21. To create the presentation for the department using the power point.
22. Animation in Power point Presentation
23. Designing the Power point Presentation
24. Timing for the slides in Power point Presentation
25. Back ground designing in Power point Presentation
26. Designing the Power point Presentation using audio and Video.

4. INTERNET LAB

27. Browsing a Web Site.
28. Composing and Sending a Mail
29. Forwarding and replying to mails.
30. Downloading Articles / Web content.
31. Literature survey using search enquires

5. DBMS LAB

32. Creation of database table with constaints
33. Modification of data in a table.
34. 28 GUI applications using VB (Single calculator, dollar conversion etc.,)
35. Database Applications using VB (insert, update, delete).

References :

1. Peter Norton, " Introduction to Computers", 6th Edition , Tata Mcgraw Hill.
2. Ashok N. Kamthane, " Computer Programming", Pearson Education India.
3. Groff Weinberg, " The complete Reference SQL", 2nd Edition, Tata Mcgraw Hill.
4. Bott Special Edition using Microsoft Office 2007, Pearson Education India.
5. Gray W. Harsen and James V Harsen (1996) Data Base Management and Design, Prentice Hall
6. Jeffrey A Hotter, Mary B Prescolt, Fred R. Medadden (2002), Modern database Management, Prentice Hall.
7. Robert I T Futrell, Donald F. shafer Linda, (2002) Quality software project management Pearson Education, Asia.
8. ' Soft Skills' University of Madras, Chennai
9. ' Communication Skills," University of Madras, Chennai
10. Mangal .S.K. (2002) , Advanced Educational Psychology, Prentice Hall of India, New Delhi.
11. Sampath, K. et.al (1998) Introduction to educational technology, Sterling Publishers, New Delhi..
12. Keemar.K. (1997) Educational Technology, New Age International Publishers, New Delhi.
13. Chauhan S.S.(1985) Innovations in Teaching Learning Process , New Delhi : Vikas Publishing House.
14. Rajasekar . S. (2005) Computer Education and Educational Computing , Hyderabad : Neel Kamal Publications.
15. Jyohanty Jagannath (2004) , Modern Trends in Educational Technology, " Hyderabad : Neel Kamal Publications.
16. Vedanayagam E.G. (1988) Teaching Technology for College Teachers, New Delhi, Sterling Publishers.
17. Kumar K. (1997) Educational Technology, New Delhi : New Age International Publishers.

COURSE OUTCOME students are able to	
CO-1	Basics of Computers
CO-2	Word document
CO-3	Role of communication in the present scenario
CO-4	Soft Skills for interviews
CO-5	Pedagogy

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2	1	3		2	3	2	2		1
2		3	2	1		2		3	2	
3	1		1	3	3		1	1		1

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	1
2	3	1
3	1	2

* * * * * *

03203
DISSERTATION

Dissertation should be submitted and Viva Voce will be held after that.

The dissertation should be written in simple language. The text should be in short, clear and concise. Careless construction of sentences and incorrect grammar should be avoided. Spelling and grammar check can be done with the help of expert and computer. The dissertation material should be neatly computerized in double space, on one side in A4 size bond paper with Times New Roman, 12 font size only.

Margin

The left margin of the dissertation should be typed in 1.5 inch and the other three margins of top, bottom and right should 1 inch on all the pages.

Pagination

There is two separate series of pagination. The first is for preliminary materials which are from title page to list of appendices. For this page, number is placed in lowercase(small) Roman numbers at the centre bottom of the page.

The page number for body of the dissertation/ thesis should be in Arabic numbers placed at the top right corner of the page but for first page of each chapter there is no number. It continues for all chapters including bibliography and appendices.

Each chapter should be started on a new page.

Numbers and Symbols

In the text, the number below 10 should be spelt out in words for eg.one, nine etc, Further, the number 10 and above should be expressed in figurers et.10, 11 etc. However, sentences beginning with numbers should be always spelt out in words.

The symbol of percent that is % should be used when a number is used for eg.21% . When a number is not given, the word percentage should be used, for e.g twenty one percent.

Informed Consent Form

It is essential that the subjects, their parents and concerned institutional authorities should be informed in writing by the scholar about the nature of the study and risks involved if any during testing and training. It is a must for a study which involves collection of blood and other samples from the subjects. Further, for supplementation studies clearance from concerned ethical committee is essential.

Reference :

Footnote system is not followed for M.Phil dissertation.

As footnote is not used, in the text, the author's name and the year of publication should be given in parentheses for chapter I,III, IV & V. But only the year of publication should be given in parentheses next to author's name for chapter II. For example : Shaver (1972).

Binding :

The dissertation must be card-board bound with laminated wrapped sheet. Spiral binding will not be accepted. Wrapper colour is yellow for M.Phil.

Submission :

Number of copies of dissertation and abstract to be submitted for M.Phil is 2 to the University (Excluding Guide, College and Candidate Copies).

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03204

VIVA – VOCE

Viva – Voce will be conducted after the submission of dissertation as well as after the valuation of theory papers. The internal marks for viva- Voce is maximum of 40 and for the external . it is for the maximum of 60 . Altogether for the maximum of 100 marks. Questions will be asked in the Viva – Voce examination based on the dissertation of the student.

03205

VILLAGE PLACEMENT PROGRAMME

Village Placement Programme will be organized for five days during II Semester. The assessment of the students is internal for 100 marks. Students should design programme in Physical Education and are to teach and train villagers for five days.

03201 A

AREA OF DISSERTATION
(EXPERIMENTAL STUDY)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing and training procedures .

UNIT – III Research Design – Meaning, need , Importance – Features – Types. Principles of Sampling – Population – Size – Steps in Sampling. Criteria for selecting a sampling design – characteristics – Types– Random Sampling – Complex Random Sampling design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean, Median, Mode and Standard Deviation. Test for difference between mean: Independent't' test- Dependent 't' test- - Repeated Measures ANOVA -Analysis of Covariance (ANCOVA). Post-hoc test: Scheffe's and Least Significant difference test (LSD).

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

Best John W and James Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

Kothari C.R. (1985) Research Methodology, NewDelhi: Wiley Eastern Limited.

Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

COURSE OUTCOME students are able to	
CO-1	Fundamental Concepts
CO-2	Methodology Selection of subjects
CO-3	Research Design
CO-4	Testing Hypothesis
CO-5	Significance of Research Report Writing

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2		3			2		1	3	
2				2			3		2	
3	1	1	2		1		1	2		1

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	1	3
2	2	
3		2

03201 B

AREA OF DISSERTATION
(COMPARATIVE STUDY)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing .

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design- Static group comparison design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean, Median, Mode and Standard Deviation. Test for difference between mean: Independent's' test- One way Analysis of Variance(ANOVA), Factorial Design (ANOVA)- Two way, Three way- Repeated Measurers ANOVA- Post-hoc test: Scheffe's and Least Significant difference test (LSD).

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

Best John W and James Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

Kothari C.R. (1985) Research Methodology, NewDelhi: Wiley Eastern Limited.

Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

COURSE OUTCOME students are able to	
CO-1	Meaning, need ,nature , Aim, objectives and Scope of the topic
CO-2	Justification, Apparatus and materials
CO-3	Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design
CO-4	Mean, Median, Mode and Standard Deviation. Test for difference between mean: Independent's' test
CO-5	Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1		1	1		2	2	3		2	3
2	2		2	1	3	1		3	1	
3	1	3		3	1		2			2

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	
2		2
3	3	1

03201 C

AREA OF DISSERTATION
(RELATIONSHIP AND PREDICTION STUDIES)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing .

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean, Median, Mode and Standard Deviation. Correlation: Pearson Product moment Correlation – Spearman Rank order correlation- Partial and Multiple Correlation - Regression Analysis.

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

Best John W and James Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

Kothari C.R. (1985) Research Methodology, NewDelhi: Wiley Eastern Limited.

Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

Thirumalaisamy. R(1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

COURSE OUTCOME students are able to	
CO-1	Meaning, need ,nature , Aim, objectives and Scope of the topic
CO-2	Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing
CO-3	Meaning, need , Importance – Features – Types – Principles of Sampling
CO-4	Pearson Product moment Correlation
CO-5	Significance of Research Report Writing

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	2			1		3		2		3
2		1	2		1		2	1	2	
3	1	3		3	2		3		1	2

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1		2
2	1	1
3	2	3

03201 D

AREA OF DISSERTATION
(CASE STUDY)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology: Case Study methods: Meaning- Definition- Assumptions- Major steps- characteristics and sources- precaution in selecting an object of case studies. Advantages and limitations. Procedure to select the Case. Collection of data from the case- parents- spouse- children- physical education teacher- coaches-co players- Spectators & fans- society members Schedules and Questionnaire: Meaning of a schedule- types of schedule and steps in framing schedule- types of questionnaire: Meaning- forms- process- validity and reliability- advantages and limitations.

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean Median, Mode and Standard Deviation. Independent t Test - Correlation: Pearson Product moment Correlation – Spearman Rank order correlation- Chi- Square- Factor Analysis .

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

Best John W and James Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

Kothari C.R. (1985) Research Methodology, NewDelhi: Wiley Eastern Limited.

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Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

COURSE OUTCOME students are able to	
CO-1	Fundamental Concepts
CO-2	Methodology
CO-3	Research Design
CO-4	Testing Hypothesis
CO-5	Significance of Research Report Writing

MAPPING'S OF CO'S AND PO'S

Course Outcomes	Programme Outcome									
	1	2	3	4	5	6	7	8	9	10
1	1	3			2	1	2			
2	3	1	2	3		3		2	1	
3		2	1		1		3			3

MAPPING'S OF CO'S AND PSO'S

COURSE OUTCOMES (CO)	PROGRAM SPECIFIC OUTCOMES (PSO)	
	1	2
1	2	2
2	3	
3	1	1

03201 E

AREA OF DISSERTATION
(Survey Study)

03201 F

AREA OF DISSERTATION

(Descriptive Study)



TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

DEPARTMENT OF

YOGA

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
MELAKKOTTAIYUR POST CHENNAI - 600 127

DEPARTMENT OF YOGA
M.Sc., YOGA
(Two years Regular Programme)
CHOICE BASED CREDIT SYSTEM (CBCS)

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO – 1 : To equip the participants to run their own Yoga Centres.

PEO – 2 : To train them to introduce yoga in Schools, Colleges and Universities.

PEO – 3 : After successful completion of this programme, graduates will able to: Integrate and apply knowledge of yoga and spiritual evolution for the practice of yoga as healthcare therapy.

PEO – 4 : Design advanced yoga based therapies to meet identified needs within economic, environmental and social constraints.

Educational Program Outcomes (POs):

After completion of the program graduates will be able to

- PO- 1 Knowledge of the teachings and philosophy of the yoga tradition, with diverse yogic perspectives on the structure, states, functions, and conditions of the body and the mind in balance (and out of balance), based on teachings of the Yoga Sutras, the Bhagavad Gita, and other relevant texts.
- PO- 2 Ability to teach or deliver the appropriate practices for individuals and/or groups, using multimodal strategies of education such as auditory, visual, and kinaesthetic learning tools, and tools that foster client engagement.
- PO- 3 Advanced knowledge of generally accepted ethical principles of health care and yoga codes of conduct; in depth knowledge of legal and regulatory issues (including current relevant local, state, and national laws).
- PO- 4 Knowledge of the fundamental value of ongoing personal practice, long-term mentorship, and skills maintenance/development through continuing education, including knowledge of

when and how to seek advice and support for case consultation, educational advancement, and personal practice

- PO- 5 Ability to apply knowledge learned in this curriculum to assess the needs of the individuals, to design and implement effective programs, and to assess the effectiveness of these programs.

MAPPING OF PEOs WITH POs

	PO-1	PO-2	PO-3	PO-4	PO-5
PEO-1	X	X	X	X	X
PEO-2	X	X	X	X	X
PEO-3	X	X	X	X	X
PEO-4	X	X	X	X	X

PROGRAM SPECIFIC OUTCOMES (PSO)

The post graduates are able to

PSO 1 Gain knowledge and skills necessary to meet the demand of the growing needs of experts in yoga and related fields.

PSO-2 Eligible to do Research on National & International Level.

PYO18CT101	**FUNDAMENTALS OF YOGA**
	UNIT I: Yoga: Meaning- Definitions-Need- Nature- Aim and Objectives, Principles, Philosophy and Scope of Yoga. Philosophy: Scope of Philosophy, Shad Darshanas: Nyaya, Vaishesika, Samkhya, Yoga, Mimamsa, Vedanta. Misconceptions and clarifications of Yoga- Yoga and Education. **UNIT II:** History of yoga-Modem Developments- Contribution to yoga by Vedas,

	Upanishads, Prasthanatrayes, Tantra, Bhagavad Gita, Yoga Vasishtha, Yoga Sutras, Thimmandiram, Yoga Yajnavalkya Samahitha, Goraksataka, Hatha Yoga Pradipika, GherandaSamhitha, Siva, Samahitha, Hatha Ratnavali, Siddha Siddhanta Paddihati, Narada Bhakthi Sutras, Yoga Rahasya. **UNIT III:** Contributions to yoga by Ramakrishna. Swami Vivekananda, Sivananda, Sn Arobinoda , Maharishi Mahesh yogi, Swami Rama, Krishnamacharya, SwamiKuvalayananda, Ramana Maharishi, Vethathiri Maharishi, Swami Dayanand Saraswathi- sriYogendraji- ParamahamsaYogananda-B.K.S Iyengar. **UNIT IV:** Contributions of yoga to Religions: Hinduism, Jainism, Buddhism, Christianity, Islam, Sufism- Spirituality -Role of yoga & Religions on Spirituality- Methods to promote Spirituality **UNIT V:** Paths of Yoga: Hatha Yoga, Bhakti Yoga, Jnana Yoga, Karma Yoga, Raja Yoga, Mantra Yoga, Laya Yoga, Yantra Yoga, Astanga Yoga: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana, Samadhi, Schools of yoga- Sivananda yoga, Integral yoga, Bihar school of yoga, Kundalini yoga, Ashtanga yoga, Viniyoga, Iyengar yoga, Hatha yoga, Swara yoga and Mantra yoga.

COURSE OUTCOME:

- CO1 - Gain knowledge about the Indian philosophy.
- CO2 - Learn about the history of yoga, classical yoga texts, yogic gurus, and contributions of yoga to religions
- CO3 - Understand the various paths of yoga, schools of yoga, and Ashtanga yoga

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	3		1	2	1
CO2	3		2	2	1
CO3	3		2	2	3

1- **Low** **2- Medium** **3- High**

MAPPING (CO's and PSOs)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

PYO18CT102

ANATOMY AND PHYSIOLOGY

UNIT-1

Tissue cell: Cell structure – group of Tissue – Epithelial tissue, muscular tissue. Connective tissue their functions. The skeletal system – Bones, Joints and

	Muscles of the skeleton – Tendons and ligaments – their functions. **UNIT-2** The circulatory system – structure of the heart – the cardiac cycle – composition of blood – Blood pressure – Blood vessels – Haematological system – their functions – arteries, veins & capillaries. The Digestive system – alimentary canal – mouth – pharynx – oesophagus – stomach – small and large intestine – the peritoneum- Liver – gall bladder – Pancreas – their functions – metabolism – physiology of digestion. The Respiratory system – The respiratory passages – nose, pharynx, larynx, bronchi, lungs, their functions- oxygen consumption. Physiology of Respiration The Endocrine system – Hypothalamus, Pituitary gland – thyroid gland, Parathyroid glands- thymus gland – adrenal gland – Pineal gland – their functions. **UNIT-3** The Nervous system – The central nervous system – autonomic nervous system – atomic nervous system – Brain – spinal cord – Sympathetic and parasympathetic systems – their functions – sensory organs. Skin – eyes – ear – tongue – nose – their functions Posture – active posture - inactive posture – ideal posture – control of posture **UNIT-4** The urinary system – Kidneys, ureters, bladder, urethra, renal function. The reproductive system – puberty – menopause – testes, uterus, ovaries – their functions. **UNIT-5** Impact of yogic practices on the anatomy and physiology of different systems of human body – cells. Bones, joints and muscles, skin. Haematological and immune system, glands, nervous system, body metabolism.

	Special senses, locomotors system.
	COURSE OUTCOMES: • CO1 - Learn about the anatomy of the human body from the cell structure to the major systems of the body • CO2 - Understand the physiology, unique anatomical features, and the functions of the major systems of the body • CO3 - Insight into the effect of yogic practices on each individual systems of the body **MAPPING (CO's and PO's)**

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1				2	3
CO2				2	3
CO3				2	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3
2	2	3
3	2	3

PYO18CT103	METHODS OF YOGIC PRACTICE-I
	Unit 1: Essentials of yogic practices, cleanliness and food, bath, time, sun, closing eyes, place, mirror, breathing, awareness, age limitations, sequence, blanket, clothes, position, emptying the bowels and stomach counter pose, pregnancy, contra-indications, duration, straining, special provisions for women and patients, fitness, posture, side effects. Loosening the joints Joint freeing series Suryanamaskar: Vinyasa Suryanamaskar (kneeling, lunge, jumping) **Unit 2:** Asanas: Tadasana, Trikonasana, ArdhaChandrasana, Utthita Parshvakonasana, Urdhva Dhanurasana, Utkatasana, Moordhasana, Dandasana, Pavanamuktasana, Hamsasana, ArdhaSirsasana, Ardha Kati Chakrasana, Ardhachakrasana, Veerasana, Namaskarasana, Vakrasana, Malasana, Merudandasana, Janusirsasana, Bharadvajasana, Suptavajrasana, Makarasana, ArdhaPadmasana, Sukhasana, Natarajasana, Savasana **Unit 3:** Pranayama: Sectional breathing, Viloma (Surya, Chandra), Anuloma (Surya, Chandra), Pratiloma, Surya Bhedana, Chandra Bhedana **Unit 4:** Kriya: Shankhaprakshalana, LaghooShankhaprakshalana, Agnisar Kriya Bandhas: Jalandhara Banda, Moola Bandha, Uddiyana Bandha Mudras: Chin mudra, Chinmaya mudra,, Adhi mudra, Bhrama mudra, Bairava mudra, Nasiga mudra, Ganesha mudra, Bhudi mudra, varuna mudra, Mukula mudra, Khechari mudra, Tadagi mudra, Shanmuki mudra, **Unit 5**: Meditation: Japa, Soham & pranav Japa, Ajapajapa, antarmouna, Om meditation, Nadanusandhana

COURSE OUTCOMES:

- CO1 - Learn about the essentials of the yogic practices
- CO2 - Exposed to techniques of loosening the joints and Surya Namaskar
- CO3 - Oriented to some of the preliminary asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1		3		2	3
CO2		3		2	3
CO3		3		2	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

DSE PYO18DE001	YOGA AND HEALTH
	Unit: I Health: Goals of life – adhi and vyadhi, Kleshas, Doshas, factors affecting Health – panchamaha bhudas, stages of development of disease- mental and emotional ill –health – yogic – rules for good health, Dimension of health, causes of ill – health, pillars of health .Role of yogic positive attitudes (maître, karuna, Mudita and Upeksha) for health living, concept of Bhavas and Bhavanas with it's relevance in Health and well –being. **Unit: ll** Communicable diseases: Malaria, Typhoid, Cholera, Whooping cough, Tuberculosis, measles, Venereal diseases, dysentery, Leprosy. **Unit: lll** Life style Diseases and yoga: HBP, diabetes, obesity, cancer, Stoke, Diet and Nutrition. **Unit: lV** Health and environment – mental health – Concepts of health: Air, Water, food clothing, exercise- rules OF health – sanitary laws- Personal hygiene of human systems- population explosion and it's control. **Unit: V**

Yogic rule for good health

Positive yogic principles of health living, ashtanga yoga of patanjali for healthy living, yogic practices for healthy living, relationship of health, fitness, wellness, total – wellbeing and yoga.

COURSE OUTCOMES:

- CO1 - Understand the Indian concept of health, development and causes of disease, mental and emotional well-being, and role of yogic attitudes toward health
- CO2 - In-depth knowledge about communicable diseases
- CO3 - Gain knowledge about the lifestyle diseases, the role of yoga in combating them, and impact of diet and nutrition in disease prevention and curing
- CO4 - Exposure on current trends in health and environment, concepts of hygiene and health, and population explosion and its control
- CO5 - Learn about the yogic principles and practices for health, fitness, and wellness

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	2	1		1	1
CO2			2	2	2
CO3			2	2	2
CO4			1	1	1
CO5		3		3	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	2
2	1	1
3	3	3
4	2	3
5	3	3

PY018AE101

COMMUNICATION SKILLS

UNIT – 1

Communication: Meaning, definitions, goals, need, scope – Basic of communication – characteristics of communication- one to one- one to group – Real Communication – Role of Communication in the present scenario.

UNIT – 2

Barriers to Communication – Do`s and Don'ts of Communication skills – Types of Communication.

Verbal Communication: Reading listening, writing, speaking skills telephonic Communication, face to face interactions, Non-verbal Communication: Gestures, Body posture, facial expression, eye contact, poise, body movements, and dress.

UNIT – 3

Letter writing – Report writing – Memo`s – Note Making – Agenda preparation

UNIT – 4

Soft skills – Interview skills – preparing for an interview – presentation skills- body language – speaking – pronunciation – voice – Modulation of speech – structure of presentation

UNIT – 5

Group discussion - art of listening and expressing – Role of Yoga on communication skills.

COURSE OUTCOMES:

- CO1 - Understand the basic characteristics of communication and its role in society
- CO2 - Learn about the types of verbal and non-verbal communication
- CO3 - Training on written communication
- CO4 - Orientation on the soft skills to excel in the interview
- CO5 - Learn the skills of group discussion.

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1					
CO2		2			
CO3					
CO4				2	
CO5					2

1 - Low 2- Medium 3- High

	<table><tr><td rowspan="2">Course Outcomes (CO)</td><td colspan="2">Program Specific Outcomes (PSO)</td></tr><tr><td>1</td><td>2</td></tr><tr><td>1</td><td>2</td><td>2</td></tr><tr><td>2</td><td>2</td><td>2</td></tr><tr><td>3</td><td>1</td><td>3</td></tr><tr><td>4</td><td>1</td><td>1</td></tr><tr><td>5</td><td>1</td><td>1</td></tr></table>
PYO18EC101	**VILLAGE PLACEMENT PROGRAMME** Duration : Five days Date : During 1st Year Mode of evaluation : Internal Assessment Maximum Marks : 100 Subject : Yoga Therapy Nature of Program : To teach and train villagers
	COURSE OUTCOMES: • CO1 - Apply knowledge of yogic counselling and case-history taking of participants of the programme • CO2 - Gain competence in practical training and teaching of public members of a village in yogic practices • CO3 - Apply techniques of yogic therapy, alternative medicine, naturopathy, and yogic diet to the common public **MAPPING (CO's and PO's)**

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1		2	2	2	3
CO2		3	2	2	3
CO3		3		3	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3
2	3	3
3	1	1

PRACTICAL PYO18CL101

YOGIC PRACTICES-I

UNIT – 1

Loosening the joints

Joint freeing series

Suryanamasakr : Vinyasa Suryanamaskar (Kneeling, Lunge, Jumping)

UNIT – 2

Asanas: Tadasansa, Trikonasana, Ardha Chandrasana, Utthita Parshvakonasana, Urdhava Dhnurasana, Utkatasana, Moordhasana, Dhandasana, Pavanamuktasana, Hamsasana, ArdhaSirasana, Ardha Kati Chakrasana, Ardhachakrasana, Veerasana, Namaskarasana, Vakrasana, Malasana, Merudandasana, Janusirasansa, Bharadvajasana, Suptavajrasana, Makrasana, ArdhaPadmasana, Sukhasana, Natrajasana, Savasana.

UNIT – 3

Pranayama: Sectional breathing, Viloma (Surya, Chandra), Anuloma(Surya, Chandra), Pratiloma, Surya Bhedana, Chandra Bhedana

UNIT – 4

Kriya: Shankhaprakshalana, Laghoo Shankhaprakshalana, Agnisar kriya

Bhandas: Jalandhara Bandha, Moola Bandha, Uddiyana Bandha

Mudras: Chin mudra, Chinmaya mudra, Adhi mudra, Bhrma mudra, Bairava mudra, Nasiga mudra, Ganesha mudra, Bhudi mudra, Varuna mudra, Mukula mudra, Khechari mudra, Tadagi mudra, Shanmuki mudra.

UNIT – 5

Meditation: Japa, Soham & pranava, JapaAjapajapa, Anatarmouna, OM meditation, Nadanusandhana

COURSE OUTCOMES:

- CO1 - Exposed to techniques of loosening the joints and Surya Namaskar
- CO2 - Oriented to some of the preliminary asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1		2		2	3
CO2		2		2	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3

Practical PYO18CL102

APPLIED PHYSIOLOGY

UNIT – 1

Measurement of Temperature, Pulse rate, Respiratory rate

UNIT – 2

Measurement of Blood Pressure

UNIT – 3

Sensory functions – Examinations

UNIT – 4

Muscle Examinations

UNIT – 5

Identification of a specimen organ and explain its functions

COURSE OUTCOMES:

- CO1 - Learn about the measurement of physiological variables such as temperature, pulse rate, respiratory rate and blood pressure
- CO2 - Physical examination of sensory function and muscles is learned
- CO3 - Oriented to identify an organ specimen and explain its functions

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1				2	2
CO2				2	2
CO3				2	2

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3
2	2	3
3	2	3

PYO18CT201 **YOGA AND PSYCHOLOGY**

UNIT – 1

Psychology: Meaning, definitions, Nature, Need, scope of Psychology –

	Psychology and Yoga, role of Yoga on Heredity and Environment, learning, Emotions**,** memory, Cognition, Intelligence, Attention, Attitude, Personality. **UNIT – 2** Growth and Development: Life span periods, Yoga for different stages of life: infancy, early childhood, later childhood, Adolescence, adulthood, old age, women, Yoga for Professional people. **UNIT – 3** 25 elements, Koshas, Doshas, Gunas, nadis and chakras, Mind, Types of mind, folded, mental faculties, stages, States, sources and powers of mind, unfolding powers of Mind, Yoga for super-consciousness. **UNIT – 4** Spirituality: meaning, definition, Role of Yoga Religion on Spirituality values, type of values, divine virtues. Methods of developing spirituality. **UNIT – 5** Role of Yoga on psychology qualities and psychological disorders Neurosis: Anxiety, Phobias, obsessions, Compulsion, stress, hysteria, Depression, suicide, Eating disorders, Suicide. Psychosis: schizophrenia, Autism, Dementia, Bipolar disorder, Mental retardation Personality disorder: paranoid, Histrionic, drug addicts, gambling, Alcoholism, smoking, anti-social personality disorders.

COURSE OUTCOMES:

- CO1 - Learn about the scope of psychology in yoga and the concept of developmental psychology
- CO2 - Gain an understanding in yogic psychology and spirituality
- CO3 - Understand the impact of yoga on various psychological disorders

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	2	2		2	3
CO2	2	2		3	3
CO3				3	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	2
2	2	2
3	3	3

PYO18CT202

METHODOLOGY OF TEACHING YOGA

Unit I:

Education: Yoga Education, Goal, Scope and importance, Principles of Teaching Yoga- Yogic psychological, Physiological, Pedagogical, sociological. Meaning of methodology of teaching - factors influencing Methodology, Presentation technique. Role of language, Voice, fluency, clarity and body

	language in Teaching. Factors of Yoga Education: Teacher, Student and Teaching- Guru- Shishya Parampara. Types of students and teachers – promotion of leadership qualities. Yogic levels of learning, Vidyarthi, Shishya, mumukshu, yoga Guru **Unit II:** **Methods of Yoga Teaching:** Lecture method, Response to instruction method (method), Individualized Instructional Method, Group discussion Method, Directed Practice Method, Project method, Demonstration Method, Lecture cum Demonstration Method, Imitation Method, Dramatization Method, Sources of teaching methods **Unit III**: **Teaching aids:** Audiovisual aids, Visual aids, Audio aids, Models, Props: Wooden brick and foot rest belt, ropes, slanting plank, chair, stool, bench, box, the heart rate, ladder stool and drum, bolster and pillow, bandage, weight, the horse, big and small. **Unit IV**: **Preparing lesson plan- Essentials of a good lesson plan:** Advantages of preparing a lesson plan, Contents of a lesson plan, Class management-formation of the class, Conducting yoga practical lessons: Precautions and contra-indications of practices. Lesson plan: Assembly and roll call, Relaxation & prayer, Loosening the joints. Introduction of the practice, Demonstration, Individual practice, Group practice. Yoga game (if lime permits), Question and answer session, Relaxation, End prayer. **Unit V**: Organizing yoga class, Yoga camp, workshop in yoga, Yoga tours, Yoga games and competitions, classification of age groups for competitions, Evaluation, Advantages, Devices of evaluation

COURSE OUTCOMES:

- CO1 - Understand the principles and methodology of teaching yoga
- CO2 - Learn about the presentation techniques and teaching aids to yoga learning
- CO3 - Exposed to preparing and executing a lesson plan
- CO4 - Understand the processes in organizing and conducting workshops, camps, games and competition are learned.

MAPPING (CO's and PO's)

Course Outcomes	**Programme Outcomes**				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1	1	3		3	3
CO2		3			
CO3		2		2	3
CO4				3	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	2
2	3	2
3	3	1
4	3	1

PYO18CT203	**Course Outcomes**
PYO18DE002	**CO1**
	CO2
Generic PYO18GE201	**CO3**
	CO4
Skill enhancement course PYO18SE201	**CO1**
	CO2
Co-curricular PYO18EC201	**CO3**
	CO4
Practical PYO18CL201	**PSYCHOLOGICAL TESTING IN YOGA** 1. Anxiety 2. Assertiveness 3. Study skill 4. Job satisfaction 5. Emotional maturity 6. General mental alertness 7. Attitude 8. Adjustment 9. Division of attention 10. Steadiness 11. Learning 12. Reaction time
	COURSE OUTCOMES: • CO1 - Understand various cognitive and emotional states and gain competency in measuring these variables through different psychological tools **MAPPING (CO's and PO's)**

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1		1	1	3	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	3

Practical PYO18CL202

YOGIC PRACTICE -II

Unit 1:

Loosening the joints

Surya Namaskara : for children(10 steps)

Bihar school of yoga Model

Viveka nanda Model

Unit 2:

Asanas: Vrkshasna, parivrirthatrikonasana, virbhadrasana, garudasana, padahastasana, ushatrasana, sirshasana, halasana, sarvangasana, matsyasana, bhujangasana, Salabhasana,Dhunarasana, Navasana,naukasana, siddhasana, siddhayoniasana, ardhamatsyasana, paschimouttanasana, Baddhkonasana, kukutasana, padmasana, vjrasana, siddhasana, savasna

Unit 3:

Pranayama**:** Yogic Breathing, Kapalabhati, Bharmri, Ujjayi, Sheetali, sheetkari, Bhastrika, Nadisodhna

Unit 4:

Kriya: Jalneti, sutraneti

Bandha: Jalandhara Bandha, Moola Bandha, Uddiyana Bandha

Mudra: Chin mudra, chimya mudra, Adi Mudra, Brahma Mudra, Bhirava Mudra, Bhairvi Mudra, shanmukhi Mudra, Vipareetakarni Mudra, Yoga Mudra, Ashwani Mudra, Nasiga mudra

Unit: 5

Meditation**:** Yoga nidra, Rajyoga Meditation, Tratka Memeditation, Chakra Meditation, Nine Centerd meditetion, Preksha Meditetion, Mindfulness Based Strees Reduction technique

COURSE OUTCOMES:

- CO1 - Exposed to techniques of loosening the joints and Surya Namaskar

- CO2 – Oriented to some of the moderate-level to advanced asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	2	1		2	3
CO2	2	1		2	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

PYO18CT301

YOGA THERAPY

Unit I:

History of yoga therapy- Essence and Principles of Yoga therapy- Physiology and pathology in the yoga- Shatra- koshas- doshas- Granthis - Pancha prana- Application of Yoga and its types- Methodology in Yoga Therapy - Factors (Heyam, Hetu, Hanam and Upayam) - Methods (Darshanam, Sparsanam, Prasnam, Nadi Pariksa) Examination of Vertebra, joints, Muscles, Abdomen and Nervous System and

Therapeutic applications - Modification of yogic practices - yogic practices forHuman Systems - Yogic diet

Unit II:

Application of Indian traditional systems of medicine and therapies: Ayurveda - Ashtanga Ayurveda - Doshas, Dinacarya, Ayurvedic diet, Panchakarma therapy - Siddha - Five elements theory, physical constituents, pathology (Kayakalpa, Kitchen, Herbal and other types of medicine) - Naturopathy - Principles of naturopathy - Modalities of Naturopathy - Varmam and Thokkanam, Physiotherapy, Acupressure, Acupuncture, Chromo therapy, Music therapy, Pranic Healing.

	Unit III: Therapeutic application of yoga: High blood pressure, Obesity, Diabetes, Mellitus, Asthma, ulcer, Migraine, Arthritis, Back pain, Thyroid problems, constipation, impotency, infertility, stroke, Epilepsy, Parkinson's disease, sleep disorders. **Unit IV:** Therapeutic application of yoga for psychological disorders: Neurosis: stress, depression, eating disorders - Psychosis: Schizophrenia, autism, Bipolar disorders, dementia - Personality disorders: Paranoid, histrionic, drug addicts- Smoking, Alcoholism, Gambling - Anti-Social Activities **Unit V:** Therapeutic application of yoga for the problems of women- Amenorrhea, Dysmenorrhea, menorrhagia, metrorrhagia, Hypomenorrhoea, oligomenorrhoea, polymenorrhoea, leucorrhoea, uterus related problems, miscarriage, pregnancy- Pre and post natal care, PCOS.
	COURSE OUTCOMES: • CO1 - Gain the ability to visually and physically examine, interview and suggest suitable yogic practices to subjects based on the principles of yoga therapy • CO2 – Understand the concepts of Ayurveda, Siddha, Naturopathy and other allied therapies and their application • CO3 - Ability to frame therapeutic modules of yogic practices for lifestyle disorders, psychological disorders and disorders specific to women

	• **MAPPING (CO's and PO's)** **1 - Low 2- Medium 3- High** **MAPPING (CO's and PSO's)**

Course Outcomes	Programme Outcomes				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1		2		2	3
CO2		1		2	2
CO3		2		2	3

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3
2	2	2
3	3	3

PYO18CT302	**HATHA YOGA TEXTS** **UNIT-1** Goraksataka, Hatha yoga Pradeepika, Gheranda Samhita, Siva Samhita, Hatha Ratnavali, Siddha Siddhanda Padadi, **UNIT-2** Thirumanthiram, Yoga Yajnavalkya Samhita, Yoga Rahasya, Yoga maharanda, Vini yoga, Light on yoga, Yoga mala. **UNIT-3** Asanas in Hatha Texts,

Definitions, Pre-requisites, special features,

UNIT-4

Pranayama in Hatha Texts, Concept, phases and Stages, Pre –requisites, Benefits, precautions, contraindications

UNIT-5

Kriyas, Bandhas, Mudras, Meditations, & other practices in Hatha Yoga Texts, Concept definitions, precautions, contraindications, stages, benefits.

COURSE OUTCOMES:

- CO1 - Exposed to various Hatha yoga texts, their unique features and their contribution
- CO2 – In-depth study on the asanas, pranayama, mudras, bandhas, and meditation in classical Hatha Yoga texts

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	3	2		2	2
CO2	3	2		2	2

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	2
2	3	3

PYO18CT303

TRADITIONAL SYSTEMS OF MEDICINE & THERAPIES

UNIT-1

Origin of Ayurveda – Aim and importance of Ayurveda , Philosophy and goals of Ayurveda, Unique Approach of Ayurveda – Ayurveda texts, chakra samhita, Sushruta Samhita, Kashyapa Samhita, Rasatantra, Unique features of Ayurveda – Hygienic principles of Ayurveda (Dhinacharya)- Five elements of Ayurveda Doshas, Gunas, Dhatus, Upa Dhatus, Eight Categories or branches of treatment – Nadis vijnana – Nadis and Chakras,- Characteristics of different prakritis- causes of disease- method of disease examination – Ayurveda diet.

UNIT-2

Ayurveda effects of yogic principles & therapies – Ayurvedic purification practices – Panchakarma- vamanam, virechanam, basti, Anuvasana, Nasya, Rakta Moksana- Abhyanga, Swedanam, Nasayam, Njavarakizhi, Pizhichil.

UNIT-3

History and concepts of Siddha medicine: Principles of Siddha Medicine System, Five Elements Theory, Three Biological Humors, Seven Physical Constituents, Pancha Bhudas , Pancha Koshas, Types of Siddha Medicine, Importance of Kayakalpa, Kitchen and herbal medicine, Diet Regulations, Varmam and Thokkanam, Treatment of siddha Medicine for life style diseases.

UNIT-4

Concept of Naturopathy – Principles of Naturopathy – Methods of Naturopathy: Diet, Fasting, Treatment by earth, water treatment, Treatment by rays, Massage.

UNIT-5

Acupuncture, Acupressure, Exercise therapy, Physiotherapy, Music therapy, Color therapy, Magneto Therapy, Reiki.

COURSE OUTCOMES:

- CO1 - Understand the principles and philosophy of important Ayurveda texts
- CO2 - Gain knowledge about the Ayurvedic purification practices and Ayurvedic diet
- CO3 – Understand the principles of Siddha medicine and treatment for lifestyle disorders
- CO4 - Various alternative therapies and nature cure treatment approaches are learned

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1				2	2
CO2				2	2
CO3				2	2
CO4				2	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	1
2	1	1
3	1	1
4	2	3

Discipline Specific Elective PYO18DE005

METHODS OF NATUROPATHY

Unit I:

Meaning - Definitions - Scope - Principles and Philosophy of Naturopathy- Modalities of Naturopathy: Diet therapy, fasting therapy, mud therapy, hydro therapy, colon hydrotherapy, Massage therapy, air therapy, chromo therapy, Magento therapy, Sun rays

Unit II:

Mud therapy: Mud pack, Chest pack, Mud Bath, Mud pack for face, Knee mud pack, Wet-sheet pack for the whole body, Banana leaf bath

Unit III:

Hydro therapy: Enema, Hip Bath, alternative hip bath, Sitz Bath, Spinal Bath, Spinal spray bath, Foot and arm bath, Hot foot bath, Arm bath.

Unit IV:

Steam bath, Sauna bath, Sponge bath, immersion bath, Friction bath, Under water massage, Wet sheet pack, chest pack, knee pack, Local steam, steam inhalation, Jet spray massages, Color Hydrotherapy, Whirlpool bath.

Unit V:

Naturopathy Diet (Eliminative, soothing, constructive), Fasting, Sunbath, Air bath, massage.

COURSE OUTCOMES:

- CO1 - Gain an understanding of the principles, philosophy and modalities of naturopathy

- CO2 – Learn about the therapeutic naturopathy treatments such as mud therapy, hydrotherapy, steam bath and diet and their application for common disorders

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1				2	2
CO2				2	2

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	2
2	2	3

Generic

PYO18GE301

STRESS MANAGEMENT

Unit I:

Meaning , Concepts, levels, types, reaction, causes, symptoms, complications, remedies, stress and yoga

Unit II:

Sources of stress: internal and external, release of stress

Unit III:

Texts on stress, Kleshas and stress, Stress and koshas

Unit IV:

Effective stress management- Diet, yogic practices- systems of medicine and therapies

Unit V:

Frustration, conflicts and psychosomatic disorders, relationship between body and mind, mental health.

COURSE OUTCOMES:

- CO1 - Understand the concepts, types and remedies of stress
- CO2 – Learn about the yogic approach to stress management
- CO3 - Gain an insight on the impact of stress management on psychosomatic disorders and mental health

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	1		1	3	3
CO2				3	3
CO3		2		3	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3
2	2	3
3	2	3

Ability enhancement compulsory course

PYO18AE301

PERSONALITY DEVELOPMENT

Unit-1

Personality: Personality in psychology – Meaning, Definition, concept, need, nature and scope of personality development- structure of personality.

Unit-2

Stage of human development- determinants of human development of personality- developmental processes: physical, mental, moral, social, emotional and spiritual.

Unit-3

Guidelines on personality – values and spirituality- developing good personality based on yoga- anger and stress management- role of diet on personality.

Unit-4

Personality development with special emphasis on pancha kosha- Ashtanga yoga- Factors of personality- Theories of personality- Attitude- Self-esteem, -Memory-Concentration-creativity-intelligence- Assessment of personality.

Unit-5

Leadership- Qualities of leaders- Positive thinking- powers and effects of

thoughts- career planning– career rules- Better human relations- time management.

COURSE OUTCOMES:

- CO1 - Learn about the concepts and developmental processes of personality
- CO2 - Understand the role of yoga, diet and stress management in developing the personality.
- CO3 - Gain insight into the development of leadership qualities and career development

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1				3	3
CO2				3	3
CO3				3	

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	1
2	2	2
3	2	1

Co-curricular PYO18EC301	**INTERNSHIP** **(HOSPITALS OR HEALTH CENTERS OR YOGA OR NATUROPATHY CENTRES)** Internship will be organized for 15 days. The assessment of the students is internal for 100 marks. Students should design programme in yoga and are to practice and train in Hospitals or Yoga or Naturopathy Centres for 15 days.

COURSE OUTCOMES:

- CO1 - Experience in designing yogic programmes for various age groups and people with disorders
- CO2 – Practical teaching of yogic practices based on the needs and requirement of the subjects

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1		3		3	3
CO2		3		3	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

	Course Outcomes (CO)	Program Specific Outcomes (PSO)	
		1	2
	1	3	3
	2	3	3

PRACTICAL PYO18CL301

YOGIC PRACTICES-III

Unit-1:

Loosening the joints

Pawanmuktasana series

Suryanamaskar: Sivananda Model, Chandranamaskar

Unit-2:

Asanas**:** Virabhadrasana, Parsavottanasana, UthithaTrikonasana, AdhomukaSavasana, Karnapidasana, Kandharasana, Titibhasana, Padma Sarvankasana, Salamba Sirasasana, gomukasana, Setubandhasana, Chakrasana, Trianga Mukhaipada paschimottanasana, Marichyasana, Virasana, Svastikasana, Shashangasana, Garudasana, Mayurasana, Padma Mayurasana, Bhadrasana, Simhasana, AkarnaDhanurasana, Parsvakonasana, Savasana.

Unit-3:

Pranayama**:** Moorchapranayama, Anulomaviloma, Sadanta Pranayama, Pranayama with Kumbhaka and bhandhas

Kriya**:** Dhanda dhauti, Vatsara dhauti, Nauli (Madhyama, Vama, Dakshina)

Unit-4

Mudras: Yoni Mudra, Lotus Mudra, Dhyani Mudra, Sakthi Mudra, Shambavi Mudra, Pashinee Mudra, MahaBheda Mudra, Ksepana Mudra.

Unit-5

Meditation : DRT, Walking Meditation, Vipasana Meditation, Nine centered

Meditation, Yogic Sukshmavyama, Sudharsiya, Zen Meditation, Savitakidhyan Dharana, Mind sound Resonance Technique.

COURSE OUTCOMES:

- CO1 – Learn the methods of loosening the joints and types of suryanamaskar
- CO2 – Learn techniques of some of the moderate-to advanced level asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	2	2		3	2
CO2	2	2		3	2

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3

Practicals PYO18CL302

CLINICAL APPLICATIONS IN YOGA THERAPY

Unit :l

Vyuham in yoga therapy: Heyam or the symptoms, Countering

	predisposing factors, Hetu or the cause, Aggravating factors, Hanam or the remedy, Relieving factors, Upayam or the tools, Importance of regular reviews. **Pariksa in yoga therapy:** In depth study of the diagnostic tools, Darsanam, Sparsanam, Prasanam, Neetakanta Model; The idel teacher student relationship **Nadi pariksa in yoga Therapy:** Group classes vs. Individual classes, Nadi system- Definition from texts, The diffcrent of nadi pariksa in yoga therapy, Methodology of nadi pariksa in yoga therapy, Differences between Nadi pariksa and pulse reading **Unit: II** **Application of Yoga Therapy** **Extensive theoretical and practical learning about these diagnostic tools.** **Specially with respect to:** ➢ The pre requisites for using these tools. ➢ The exact technique of using these tools ➢ The limitations of these tools ➢ The principles involved in inferring information by using these tools ➢ Application of these tools during therapeutic intervention. **Modification an applied to Therapy** ➢ Modification vs adaptation ➢ Simplification vs intensification ➢ From vs function ➢ Modification of asana

	➢ Modification of meditation ➢ Modification of chanting. **Unit: lll** **Therapeutic application of yoga in skeleton- muscular system** ➢ Low back pain ➢ Cervical spondylosis ➢ Spondylosis ➢ Ankyilosing spondilosis ➢ Osteoarthritis ➢ Rheumatoid arthritis. **Unit: IV** **Therapeutic application of yoga of in digestive system** ➢ Gastritis ➢ Peptic ulcer disease ➢ Hernia ➢ Constipation **Therapeutic application of yoga of in Respiratory system** ➢ Allergic sinusitis ➢ Asthma ➢ COPD **The Therapeutic application of yoga in cardiovascular system**

	➢ Hypertension ➢ Circulatory insufficiency ➢ Varicose veins **Unit: V** **The Therapeutic application of yoga in Nervous, Endocrine, Urinary, Lymphatic, Reproductive system and sensory Conditions.** ➢ Migraine ➢ Epilepsy and stokes ➢ Hypo and Hyperthyroidism ➢ Irregular periods ➢ Pregnancy – pre & post natal care ➢ Urinary insufficiency ➢ Lymphatic Edema ➢ Refractive errors in the eyes.
	COURSE OUTCOMES: • CO1 - Gain knowledge about the causes, symptoms, and predisposing factors of various diseases • CO2 - Learn about the principles and application of various diagnostic and therapeutic tools of yoga therapy • C03 - Understand the methodology and application of nadi pariksha for therapeutic intervention • CO4 - Learn techniques of modifying asanas, pranayama, meditation and

chanting in therapeutic intervention

- CO5 - Study the application of therapeutic yogic modules for disorders of the major systems of the body

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1	1	2		2	3
CO2				2	3
CO3		1		2	3
CO4		2		3	3
CO5	2	2		2	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3
2	3	3
3	2	3
4	3	3
5	3	3

1-Low **2- Medium** **3- High**

PYO18CT401	RESEARCH PROCESS IN YOGA

Unit-1:

Research –Meaning, Definitions, Need, Nature and scope of research in yoga, Types of research- Basic-Applied-Action – Qualities of a researcher-Criteria in locating and selecting a research problem- preparation of research proposal Mechanism of research proposal- formulation of hypothesis-variables and its types.

Unit-2:

Types of research design –Describe research –survey method, case study, method, Experimental Method- Categories: Longitudinal design, Quasi Experimental design, cross sectional design, Double blind placebo design, Experimental Design Types: Single group Design Reverse group design, Repeated measure design static group comparison design, Rotated group design, Random group design, Equated group design, Factorial design.

Unit-3:

Data- Population- Sample-Subject- Sampling: Characteristics, Principles, steps, Determining the sample size, criteria in selection, Types of sampling probability sampling methods- Random and complex, Non –Probability Sampling methods- Writing Synopsis and Research report-Front Materials, Main Chapters and Back materials- Recent trends in yoga research, yoga research centres and their works in India.

Unit-4:

Statistics: Meaning- Need and importance in research – non-parametric statistics- Treatment of F-test, ‘t’ test one way- two way – testing- chi square- statistical packages- SPSS-SAS- data process, data analysis-Graphical Representation, Data interpretation.

Unit-5:

Types of Statistics- Parametric and non-parametric-Normality of data-Normal Curve – Data Analysis-'t' Test, F-test Type I Type II error- ANOVA-ANCOVA, (one way & two way)- Post hoc test- Pearson product moment correlation- Partial and Multiple Correlation- Regression simple linear and multiple linear- Post hoc tests.

COURSE OUTCOMES:

- CO1 - Understand the nature and scope of research in yoga, various research methods and design, and areas of research
- CO2 – Learn to prepare a research proposal, formulate hypothesis, and implement research design and sampling
- C03 - Learn to write research report and synopsis
- CO4 - Gain practical competency in statistical concepts related to experimental research

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1		1			
CO2					
CO3			2	3	
CO4				3	3

1 - Low **2- Medium** **3- High**

	MAPPING (CO's and PSO's) Course Outcomes (CO) / Program Specific Outcomes (PSO) 1 | 2 1 | 2 | 3 2 | 2 | 3 3 | 1 | 3 4 | 1 | 3
PYO18CT402	**YOGA SUTRAS** **Unit : l** Basics and date of the yoga sutra –Raja yoga – notable commentaries- Ashtanga yoga; Yoga- mind – psychic powers. 1) Samadhi pada 2) Sadhana pada 3) Vibhuti pada 4) Kaivalyabpada **Unit: ll** 1:1-2, 1:5 to 7, 1:12, 1:17 to 18, 1:30 to 51. **Unit: lll** 2:1 to 11, 1:23 to 24, 2:28 to 55. **Unit: lV** 3: 1 to 9, 3:25 to 38, 3:41, 3:56. **Unit :V** 4:1, 4:7, 4:19, 4:34.

COURSE OUTCOMES:

- CO1 - Understand the philosophy, principles, concepts and commentaries of Yoga Sutra
- CO2 - In-depth study of Samadhi Pada, Sadhana Pada, Vibhuti Pada and Kaivalya Pada.

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	2	1		2	
CO2	2	1		2	

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	1
2	3	1

PYO18CT403

THESIS

1) To acquire practical knowledge.
2) To acquire skill in the administration of yoga practices in the real life.
3) To identify some common problems found among people.
4) To do a systematic investigation into such problems.
5) To suggest remedial measures to make life more meaningful and

purposeful.

6) To learn the clinical method, case history writing, measurement of clinical symptoms, psychological parameters. Application of statistics on the initial and final dada recorded.

COURSE OUTCOMES:

- CO1 - Acquire practical skills in a systematic investigation of a research problem
- CO2 - Organize the samples and sampling techniques which is relevant to the study
- CO3 – Apply the statistics in research thesis for evaluation
- CO4 – Learn measurement of clinical symptoms and psychological parameters
- CO5 – Organizing the data and presenting it as a thesis

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1					
CO2					
CO3			1	2	
CO4				3	
CO5				2	

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	3
2	1	3
3	1	3
4	2	3
5	1	3

PRACTICAL PYO18CL401

YOGA PRACTICES – IV

Unit : l

Loosening the joints.

Pavanmuktasana series.

Suryanamaskar : kriya Suryanamaskar , Advance Suryanamaskar,

Unit: ll

Asanas: Ardha baddha padmottaanasana. Utthita Hasta Padangusthasana. Vatayanasana. Hanumasana. Padangushthasana. Padma Sarvangasana, kama Pidasana, Vrischikasana , poorna Bhujangasana, poorna salabhasana, poorna Dhanurasana, poorna matsyendrasana, Eak pada Sirsasana, Koormasana, Padma Sirshasana, Ardha Baddha Pachimottanasana, Paryangasana, Bhekasana, Baddha Padmasana, Vamadevasana, Parivritti Janusirshasana, Savasana.

Unit: lll

Pranayama: Kewali Pranayama (Soham), Plawini Pranayama, Kumbhaka and Bandhas with ratios.

Unit: lV

Kriyas**:** Ghrta Neti, Dugdha Neti, Basti (Enema)

Bandhas: Maha Bandha.

Mudras**:** Kaki Mudra, Bhujangini Mudra, Vipareeta Karani Mudra, Kundalini Mudra, Mahavedha Mudra, Vajroli/Sahajili Mudra, Manduki Mudra, Ashwini Mudra.

Unit :V

Meditation: Transcendental, Cyclic (S- vyasa), Guided Meditation, Dynamic Meditation, Tibetan Meditation.

COURSE OUTCOMES:

- CO1 - Learn about the essentials of the yogic practices
- CO2 - Exposed to techniques of loosening the joints and advanced Surya Namaskar
- CO3 - Oriented to some of the advanced level of asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1	2	3		3	2
CO2	2	3		3	2
CO3	3	3		3	2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

1 - Low **2- Medium** **3- High**

PRACTICAL

PTO18CL402

CLINICAL APPLICATIONS IN TRADITIONAL SYSTEMS OF MEDICINES AND THERAPIES

UNIT-1

Methodology in yoga therapy- Factors (Heyam, Hatu, Hanam and Upayam), Methods (Darshanam, Sparsanam, Prasnam and Nadipariksa) Examination of Vertebra, Joints, muscles, Abdomen and Nervous System and therapeutic yoga practices- Modification of Yogic practices.

UNIT-2

Application of traditional Indian medical systems and therapies: Ayurveda- Doshas, Dinacharya , Ayurvedic Diet, panchakarma therapy, Siddha – Five elements theory, Physical constituents pathology (Kayakalpa, kitchen herbal and other types of medicine) Varmam and Thokkanam: Exercise therapy Music therapy, Pranic Healing, Magneto therapy, Naturopathy and Modalities of Naturopathy. Reflexology.

UNIT-3

Therapeutic Applications for High Blood Pressure, Obesity, Diabetes, Mellitus, Asthma, Sinusitis, Migraine, Arthritis, Back pain, Thyroid problems, Constipation, Impotency, Stroke, Epilepsy, Parkinson's disease, Sleep disorders, skin diseases, insomnia, Anaemia.

UNIT-4

Therapeutic applications for psychological disorders:

Neurosis: Stress, Depression, autism, eating disorders,
Psychosis: Schizophrenia, autism, bipolar disorders, dementia
Personality Disorders: Paranoid, histrionic, drug addicts-Smoking, Alcoholism, Gambling-Anti-social activities.

UNIT-5

Therapeutic applications for the problems of women- Amenorrhea, Dysmenorrhea, Menorrhagia, Hypomenorrhoea, Olimenorrhoea, Polymenorrhoea, Leucorrhea, uterus related problems, miscarriage, pregnancy-pre and post natal care, PCOS.

COURSE OUTCOMES:

- CO1 - Develop the ability to visually and physically examine, interview and perform nadi pariksha of the subjects
- CO2 - Gain knowledge about the concepts and principles of yoga therapy, Ayurveda, and siddha, naturopathy, acupuncture, acupressure, and physiotherapy
- CO3 - Understand the treatment modalities in yoga therapy, Ayurveda, and siddha for life-style disorders, psychological disorders, and disorders specific to women

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1				3	3
CO2	1	1		2	3
CO3		2		2	3

1 - Low **2- Medium** **3- High**

	MAPPING (CO's and PSO's) Course Outcomes (CO) / Program Specific Outcomes (PSO) 1 | 3 | 3 2 | 2 | 1 3 | 3 | 3
Discipline Specific Elective **PYO18DE008**	**STATISTICS IN YOGA** **UNIT-I** Statistics- Basic Concept- Need and Importance of Statistics; Data- Raw and Grouped, Types of data; Concept And Calculations of Measures of Central Tendency-Mean, Median And Mode; Measures of Variability- Range, Mean Deviation, Quartile Deviation And Standard Deviation. **UNIT-II** Introduction To Normal Distribution - Normal Curve - Characteristics of Normal Curve - Properties of Normal Curve - Standard Normal Curve - Problem Based On Normal Distribution - Uses of Normal Distribution. **UNIT-III** Testing Of Hypothesis - Procedure, Types of Hypothesis, Level of Significance, One Tailed and Two Tailed Test, Degrees of Freedom; Test of Significance for Difference of Means- t Test -Independence and Dependence Test, Z-Test ; One Way Analysis of Variance. **UNIT-IV** Correlation- Pearson Product Moment Correlation, Spearman Rank Order Correlation, Phi Correlation, Biserial Correlation, Partial and Multiple Correlation **UNIT-V** Non Parametric: Chi Square Test - Equal Occurrence Test, Independence of Attributes, Contingency Coefficient; Graphical Representation - Line Diagram,

Bar Diagram- Multiple Bar Diagram, Pie Diagram.

COURSE OUTCOMES:

- CO1 - Learn about the types of data and the measures of central tendency and variability
- CO2 - Understand normal distribution and testing of hypothesis through T test, ANOVA, correlation, and non-parametric tests
- CO3 - Gain ability to present data through graphical representations

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	PO2	PO3	PO4	PO5
CO1				2	
CO2				2	
CO3				2	2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	3
2	1	3
3	1	3

1 - Low
2- Medium
3- High

Skill-enhancement course

PYO18SE401

ENVIRONMENTAL STUDIES

Unit: l

	Definition - Scope and importance- need for public awareness. **Unit: ll** Resources – Water – Forest – Minerals- Food Energy- land. **Unit: lll** Environmental pollution- definition – causes- Effects and control measure of Air pollution – Water- Soil-Noise- Nuclear. **Unit: lV** Social issues and the environment- Urban problems related to energy – Water conservation – Rainwater harvesting- Water shed management- Environment ethics- Climate change – Global warning – Acid rain – Ozone layer deletion. **Unit: V** Human Population and the Environment – population growth variation among Nation population explosion – Family welfare program- Environment – and human wealth.
	COURSE OUTCOMES: • CO1 - Raises awareness about the environment, natural resources and social issues that affect environment • CO2 - Learn about the causes and effects of environmental pollution and

means to control it

- CO3 - Understand the impact of various social issues and population growth on the environment

MAPPING (CO's and PO's)

Course Outcomes	Programme Outcomes				
	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1			2	2	
CO2			2	2	
CO3			2	2	

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	1
2	1	2
3	2	2

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

MELAKKOTTAIYUR POST CHENNAI - 600 127

DEPARTMENT OF YOGA

M.Sc., YOGA THERAPY

(Two years Regular Programme)

CHOICE BASED CREDIT SYSTEM (CBCS)

Programme Educational Objectives (PEO)

- PEO-1 Graduate will have successful academic and research career.
- PEO-2 Graduates will have employment in public and private sectors and resolve health, economic, social and environmental issues.

PROGRAM EDUCATIONAL OBJECTIVES (POs)

PO – 1: Knowledge of classical and theoretical foundations of the field of Yoga Therapy

PO – 2: Knowledge of classical theories of health and disease relevant to the practice of Yoga Therapy

PO – 3: Knowledge of human anatomy, physiology and biomechanics, and the interrelationships between systems of the body

PO – 4: Knowledge of common pathologies and disorders of systems of the body, including familiarity with symptoms, condition management, illness trajectories, and related contraindications to yoga practices

PO – 5: Ability to communicate using common medical and psychological terminology,

PEO – 6: Knowledge of models of human development, with the influence of familial, social, religious and cultural conditioning on health and healing

PO – 7: Knowledge of the interconnections between the body, the breath, the mind, and the emotions in the context of maintaining resilience and well-being

PO – 8: Ability to communicate effectively, to establish healthy therapeutic and professional relationships, and to implement effective teaching methods by adapting to unique styles of learning, providing supportive and effective feedback while evaluating and acknowledging the progress of the client

PO – 9: The skill to conduct an intake and assessment of the client and elicit the priorities and goals of the client; to integrate information from the intake, evaluation, and observation to develop a working assessment of the client's condition, limitations, and possibilities;

PO – 10: The skill to determine which aspects of the client’s conditions, goals, and aspirations might be addressed through Yoga Therapy

PO – 11: Advanced knowledge of diverse Yoga Therapy tools and practices and their appropriate application, with practices that may include asana or postures, pranayama (or regulated breathing) meditation and relaxation techniques, and lifestyle modifications, including basic yogic dietary concepts; and the knowledge of when to apply these practices and when they are contraindicated

PO – 12: Critical thinking skills and science-based literacy to advance the evolution of Yoga Therapy as an integrative health practice

PO – 13: Integrate and apply knowledge of yoga and spiritual evolution for the practice of yoga as healthcare therapy.

PO – 14: Install the intellectual skills to analyze and solve healthcare disorders through designing specific yoga therapies.

MAPPING OF PEOs WITH POs

	PO -1	PO -2	PO -3	PO -4	PO -5	PO -6	PO -7	PO-8	PO -9	PO - 10	PO-11	PO-12	PO - 13	PO - 14
PEO -1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PEO -2		X	X	X		X		X	X	X	X		X	X

The post graduates are able to

PSO 1 Gain knowledge and skills necessary to meet the demand for Yoga Therapy Instructors as paramedical personal in hospitals and nursing homes under the guidance of doctors, and to equip the students to work as therapists at Naturopathy hospitals, health clubs, etc.

PSO-2 Eligible to do Research on National & International Level.

PYT18CT101	**FUNDAMENTALS OF YOGA THERAPY**
	UNIT-1 Therapy: Meaning – Classification-Benefits – Paths of Yoga Therapy – Goal – Principles – Essence – Nature of Yoga Therapy. **UNIT-2**

	Origin of Yoga Therapy – History of Yoga Therapy – Evolution of Yoga Therapy – Foundation of Yoga Therapy. **UNIT-3** Health: Goal of Life – Adhi and Vyadhi – Klesha – Factors affecting health – Stages of development of disease – Yogic rules for good health – Dimension of Health – Causes of ill – health – Pillars of heath. Ailments – Pillars of Yoga Therapy – How the Therapy works – Yogic practices and health – How Yogic practices heal. **UNIT-4** Fitness: Meaning, Components and Scope of Fitness – Metabolic Fitness – Role of yoga on Fitness. Wellness: Meaning & Scope – Components – Yogic Management **UNIT-5** Nutrition – Nutrients – Types of diet – Good and Bad diets – Sattvic diet. Relationship of health, Fitness, Wellness, Nutrition and Yoga.
	COURSE OUTCOME: • CO1 - Gain knowledge about the goals, principles and philosophy of yoga therapy. • CO2 - Learn about the history, evolution and foundations of yoga therapy • CO3 – Understand the meaning, definitions, dimensions, and scope of health, fitness and wellness • CO4 – Insight into the causes of illness and the management of those ill-health through yoga • CO5 – Gain knowledge about the nutrition, components of nutrition and their impact on health. Also the principles and characteristics of the yogic diet are expounded

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1	3					1						2		
CO2	3	2				2	2					1	1	
CO3			1	2	1	1	2		3	3	2			
CO4		3	2	3	1				3	3	3			
CO5		1				1								

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	2
2	3	1
3	3	3
4	3	3
5	3	2

1-
2-

1 - Low **2- Medium** **3- High**

PYT18CT102

FUNCTIONAL ANATOMY AND PHYSIOLOGY

UNIT-1

Tissue cell: Cell structure – group of Tissue – Epithelial tissue, muscular tissue. Connective tissue their functions. The skeletal system – Bones, Joints and Muscles of the skeleton – Tendons and ligaments – their functions.

UNIT-2

The circulatory system – structure of the heart – the cardiac cycle – composition of blood – Blood pressure – Blood vessels – Haematological system – their functions – arteries, veins & capillaries. The Digestive system – alimentary canal – mouth – pharynx – oesophagus – stomach – small and large intestine – the peritoneum- Liver – gall bladder

	– Pancreas – their functions – metabolism – physiology of digestion. The Respiratory system – The respiratory passages – nose, pharynx, larynx, bronchi, lungs, their functions- oxygen consumption, Physiology of Respiration. The Endocrine system – Hypothalamus, Pituitary gland – thyroid gland, Parathyroid glands- thymus gland – adrenal gland – Pineal gland – their functions. **UNIT-3** The Nervous system – The central nervous system – autonomic nervous system – atomic nervous system – Brain – spinal cord – Sympathetic and parasympathetic systems – their functions – sensory organs. Skin – eyes – ear – tongue – nose – their functions Posture – active posture - inactive posture – ideal posture – control of posture **UNIT-4** The urinary system – Kidneys, ureters, bladder, urethra, renal function. The reproductive system – puberty – menopause – testes, uterus, ovaries – their functions. **UNIT-5** Impact of yogic practices on the anatomy and physiology of different systems of human body – cells. Bones, joints and muscles, skin. Haematological and immune system, glands, nervous system, body metabolism. Special senses, locomotors system.

COURSE OUTCOMES:

- CO1 - Learn about the anatomy of the human body from the cell structure to the major systems of the body
- CO2 - Understand the physiology, unique anatomical features, and the functions of the major systems of the body
- CO3 - Insight into the effect of yogic practices on each individual systems of the body

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1			3						1	2	2	1	1	
CO2			3						2	1		1	1	
CO3		2	3	3						3		2	1	

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

PYT18CT103 **BASIC PRINCIPLES OF YOGA THERAPY**

UNIT-1 – Principles of ViniYoga

- Definition of ViniYoga
- Srsti Karma
- Siksana Krama

	➢ Rakshana Krama ➢ Cikitsa mode of application **UNIT-2** – Fundamental Principles of Yoga therapy ➢ Definition of cikitsa ➢ Medical System vs Health Management ➢ Its exact role in health management ➢ The focus of cikitsa ➢ Relationship ➢ Acharya **UNIT-3 –** Basic Concepts of Yoga therapy ➢ Physiology and Pathology in the Yoga – Shastra ➢ Ahimsa ➢ Union ➢ Work with the mind ➢ Important of breath ➢ Body – the power tool ➢ Technique vs effect **Unit-4 –** Progression and Individual focus in Yoga therapy ➢ Starting Point ➢ Fixing the goal ➢ Progression ➢ Coming out of practice ➢ Yogam and Ksemam ➢ Kala, desa, vaya, vrtti, sakti ➢ The nature of ailment

- Isvarapranidhana

UNIT-5 – Basic principle of other alternative medical systems

- Physiology and Pathology of Ayurveda
- Ayurveda – fundamental principles, Panca Mahabhuta & Tridosa.
- Ahara niyma; Dietary principles and guidelines for health
- Assement of Ayurvedic Constitution
- Dinacharya
- Siddha, Acupressure, Pranic healing, Naturopathy, Yogic diet, Physiotherapy, Massage, Acupuncture, Color therapy, Magneto therapy, Hydro therapy, Fasting therapy.

COURSE OUTCOMES:

- CO1 - Gain an insight into viniyoga and its application for people of different life-stages
- CO2 - Understand and develop an ability to apply principles and concepts of yoga cikitsa in health management
- CO3 - Develop the ability to frame course planning and progression
- CO4 - Gain knowledge about the concepts and principles of Ayurveda, siddha, naturopathy, acupuncture, acupressure, physiotherapy and other alternative medical systems

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1									2	2	2			1
CO2				1					3	3	3			2
CO3				2						3	3	3	1	3
CO4			1	2	1	2			2					

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	2
2	3	3
3	3	3
4	3	2

DSE

PYT18DE001

HEALTH AND YOGA THERAPY

Unit: I

Health: Goals of life – adhi and vyadhi, Kleshas, Doshas, factors affecting Health – panchamabhudas, stages of development of disease- mental and emotional ill –health – yogic – rules for good health, Dimension of health, causes of ill – health, pillars of health .Role of yogic positive attitudes (maître, karuna, Mudita and Upeksha) for health living, concept of Bhavas and Bhavanas with it's relevance in Health and well –being.

Unit: ll

Communicable diseases: Malaria, Typhoid, Cholera, Whooping cough, Tuberculosis, measles, Venereal diseases, dysentery, Leprosy.

Unit: lll

Life style Diseases and yoga: HBP, diabetes, obesity, cancer, Stoke, Diet and Nutrition.

Unit: lV

Health and environment – mental health – Concepts of health: Air, Water, food clothing, exercise- rules OF health – sanitary laws- Personal hygiene of human systems- population explosion and it's control.

Unit: V

Yogic rule for good health

Positive yogic principles of health living, ashtanga yoga of patanjali for healthy living, yogic practices for healthy living, relationship of health, fitness, wellness, total – wellbeing and yoga.

COURSE OUTCOMES:

- CO1 - Understand the Indian concept of health, development and causes of disease, mental and emotional well-being, and role of yogic attitudes toward health

- CO2 - In-depth knowledge about communicable diseases

- CO3 - Gain knowledge about the lifestyle diseases, the role of yoga in combating them, and impact of diet and nutrition in disease prevention and curing

- CO4 - Exposure on current trends in health and environment, concepts of hygiene and health, and population explosion and its control

- CO5 - Learn about the yogic principles and practices for health, fitness, and wellness

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1		3		2	1		3			1		2	2	2
CO2				3		2	1			1		1	2	1
CO3				2		2	1			3		2	2	2
CO4		2		2	1	2	1					1	1	1
CO5	1	2		2	1	1				2		3	2	2

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

	Course Outcomes (CO)	Program Specific Outcomes (PSO)	
		1	2
	1	3	2
	2	2	1
	3	3	3
	4	2	1
	5	3	3

PYT18AE101

COMMUNICATION SKILLS

UNIT – 1

Communication: Meaning, definitions, goals, need, scope – Basic of communication – characteristics of communication- one to one- one to group – Real Communication – Role of Communication in the present scenario.

UNIT – 2

Barriers to Communication – Do`s and Don’ts of Communication skills – Types of Communication.

Verbal Communication: Reading listening, writing, speaking skills telephonic Communication, face to face interactions, Non-verbal Communication: Gestures, Body posture, facial expression, eye contact, poise, body movements, and dress.

UNIT – 3

Letter writing – Report writing – Memo`s – Note Making – Agenda preparation

UNIT – 4

Soft skills – Interview skills – preparing for an interview – presentation skills- body language – speaking – pronunciation – voice – Modulation of speech – structure of presentation

UNIT – 5

Group discussion - art of listening and expressing – Role of Yoga on communication skills.

COURSE OUTCOMES:

- CO1 - Understand the basic characteristics of communication and its role in society
- CO2 - Learn about the types of verbal and non-verbal communication
- CO3 - Training on written communication
- CO4 - Orientation on the soft skills to excel in the interview
- CO5 - Learn the skills of group discussion.

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1					1			3						
CO2					1			3	2					
CO3								1						
CO4					1			2	1					
CO5					1			1	1					

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

1	1	1
2	2	2
3	1	3
4	1	1
5	1	1

PYT18EC101 **VILLAGE PLACEMENT PROGRAMME**

Duration : Five days

Date : During 1st Year

Mode of evaluation : Internal Assessment

Maximum Marks : 100

Subject : Yoga Therapy

Nature of Program : To teach and train villagers

COURSE OUTCOMES:

- CO1 - Apply knowledge of yogic counselling and case-history taking of participants of the programme
- CO2 - Gain competence in practical training and teaching of public members of a village in yogic practices
- CO3 - Apply techniques of yogic therapy, alternative medicine, naturopathy, and yogic diet to the common public

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1					1			2	3	3	1	1	2	3
CO2			2		1			2	1	3	1	1	2	3
CO3			3	3	1				1	3	1	1	2	3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

PRACTICAL

PYT18CL101

YOGIC PRACTICES AND MODIFICATIONS -I

UNIT – 1

Loosening the joints

Joint freeing series

Suryanamasakr : Vinyasa Suryanamaskar (Kneeling, Lunge, Jumping)

UNIT – 2

Tadasansa, Trikonasana, ArdhaChandrasana, UtthitaParshvakonasana, UrdhavaDhnurasana, Utkatasana, Moordhasana, Dhandasana, Pavanamuktasana, Hamsasana, ArdhaSirasana, Ardha Kati Chakrasana, Ardhachakrasana, Veerasana, Namaskarasana, Vakrasana, Malasana, Merudandasana, Janusirasansa, Bharadvajasana, Suptavajrasana, Makrasana, ArdhaPadmasana, Sukhasana, Natrajasana, Savasana.

UNIT – 3 Pranayama: Sectional brathing

Viloma (Surya, Chandra)

Anuloma(Surya, Chandra)

Pratiloma

Surya Bhedana

Chandra Bhedana

UNIT – 4 Kriya

Shankhaprakshalana, Laghoo Shankhaprakshalana, Agnisar kriya

Bhandhas: Jalandhara Bhandha, Moola Bhandha, Uddiyana Bhandha

Mudras: Chin mudra, Chinmaya mudra, Adhi mudra, Bhrma mudra, Bairava mudra, Nasiga mudra, Ganesha mudra, Bhudi mudra, Varuna mudra, Mukula mudra, Khechari mudra, Tadagi mudra, Shanmuki mudra.

UNIT – 5 Meditation

Japa, Soham & pranava Japa, Ajapajapa, Anatarmouna, OM meditation, Nadanusandhana

COURSE OUTCOMES:

- CO1 - Exposed to techniques of loosening the joints and Surya Namaskar
- CO2 - Oriented to some of the preliminary asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1											3	1	1	2
CO2											3	1	1	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3

1 - Low 2- Medium 3- High

Practical	**APPLIED PHYSIOLOGY**

PYT18CL102

UNIT – 1

Measurement of Temperature, Pulse rate, Respiratory rate

UNIT – 2

Measurement of Blood Pressure

UNIT – 3

Sensory functions – Examinations

UNIT – 4

Muscle Examinations

UNIT – 5

Identification of a specimen organ and explain its functions

COURSE OUTCOMES:

- CO1 - Learn about the measurement of physiological variables such as temperature, pulse rate, respiratory rate and blood pressure
- CO2 - Physical examination of sensory function and muscles is learned
- CO3 - Oriented to identify an organ specimen and explain its functions

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1			3	1	1				3	1				1
CO2			1	1	1				3	1				1
CO3			3	1	1				1	1				1

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

1	3	3
2	3	3
3	2	3

PYT18CT201

YOGA THERAPY AND PSYCHOLOGY

UNIT – 1

Psychology: Meaning, definitions, Nature, Need, scope of Psychology – Psychology and Yoga, role of Yoga on Heredity and Environment, learning, Emotions**,** memory, Cognition, Intelligence, Attention, Attitude, Personality.

UNIT – 2

Growth and Development: Life span periods, Yoga for different stages of life: infancy, early childhood, later childhood, Adolescence, adulthood, old age, women, Yoga for Professional people.

UNIT – 3

25 ELEMENTS, KOSHAS, Doshas, Gunas, nadis and chakras, Mind, Types of mind, folded, mental faculties, stages, States, sources and powers of mind, unfolding powers of Mind, Yoga for super-consciousness.

UNIT – 4

Spirituality: meaning, definition, Role of Yoga Religion on Spirituality values, type of values, divine virtues. Methods of developing spirituality.

UNIT – 5

Role of Yoga on psychology qualities and psychological disorders Neurosis: Anxiety, Phobias, obsessions, Compulsion, stress, hysteria, Depression, suicide, Eating disorders, Suicide.

Psychosis: schizophrenia, Autism, Dementia, Bipolar disorder, Mental retardation Personality disorder: paranoid, Histrionic, drug addicts, gambling, Alcoholism, smoking,

anti-social personality disorders.

COURSE OUTCOMES:

- CO1 - Learn about the scope of psychology in yoga and the concept of developmental psychology
- CO2 - Gain an understanding in yogic psychology and spirituality
- CO3 - Understand the impact of yoga on various psychological disorders

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1				1	2	1	2	2		1		1		2
CO2				1	2	1	2	2		1		1		2
CO3				1	2	1	2	2		1		1		2

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3
2	3	3
3	3	3

PYT18CT202

PHYSICAL EXAMINATION METHODS OF YOGA THERAPY

UNIT-1: EXAMINATION OF SPINE

1. spine with respect to kyphosis
2. spine with respect to lordosis
3. spine with respect to scoliosis
4. Axial twists
5. examination of low back
6. examination of neck

Unit- 2: EXAMINATION OF JOINTS

1. Kneejoint.
2. hip joint
3. shoulder joint
4. Ankle and foot

Unit-3: EXAMINATION OF MUSCLES

1. Various group of muscle
2. Muscles tone
3. Muscle bulk
4. Strength of various groups of muscles

Unit- 4: EXAMINATION OF ABDOMEN

1. Examination of abdominal organs
2. Interference of from examination
3. Examination of hernia sites

Unit-5: EXAMINATION OF NERVES

1. Examination of the neurological system.
2. examination of tremor
3. examination of find tremor

COURSE OUTCOMES:

- CO1 - Physical examination of spine, joints, abdomen, sensory function and muscles is learnt

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1			3	2	2				3	3		2		3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3

PYT18CT203	**METHODOLOGY IN YOGA THERAPY** **Unit 1 View in Yoga Therapy** 1. Hey I am on the symptoms 2. countering predisposing factors Hetu or the cause 3. aggravating factor 4. Hanam or the remedy 5. Relivering factors 6. Upayam or the tools Importance of regular reviews **Unit 2 Pariksha in Yoga therapy** 1. In depth study of the Diagnostic tool 2. darshanam 3. sparsnam 4. prasnam 5. group classes vs individual classes **Unit 3 Nadi Pariksha in Yoga therapy** 1. Nadi system-definition from text 2. The different type of Nadi and their significance 3. Methodology of Nadi Pariksha in Yoga therapy 4. Application of Nadi Pariksha in Yoga therapy 5. Differences between Nadi Pariksha and pulse reading **Unit 4 Application of Therapeutic tools** 1. Extensive theoretical and practical learning about these Diagnostic tools, especially with respect to. 2. The prerequisites for using this tools. 3. The exact technique of using these tools. 4. The limitations of the tools. 5. The principals involved in in inferring information by using these tools 6. Application of these tools during therapeutic intervention. **Unit 5 Modification as applied to yoga therapy** 1. Modification the adoption 2. Simplification vs intensification. 3. Form vs function. 4. Modification of asthma 5. Modification of Pranayama 6. Modification of meditation 7. modification of chanting
	COURSE OUTCOMES:

- CO1 - Gain the ability to identify the symptoms and causes of diseases
- CO2 - Learn the methodology of visually and physically examine, interview and perform nadi pariksha of the subjects
- CO3 - Ability to apply suitable therapeutic tools and modifications of yogic practices during therapeutic intervention is gained

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1				3	1	3			2	1	2	2		2
CO2				1	1	1			3	1	1	2		1
CO3				1	1				2	1	3	2		3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

PYT18DE002

NUTRITION AND YOGA THERAPY

Unit I:

Nutrition: Macronutrients, micro nutrients, carbohydrates, fats, proteins, vitamins, minerals, water, balanced diet, benefits of vegetarian diet, gluten free and lactose free diet - composition of the meal (Grains, dairy products, vegetables and fruits nut, pulses, oil and fat), Mediterranean diet, Vegan diet, Low glycaemic diet, DASH diet, yogic diet, principles of yogic diet, characteristics of sattvic, rajasic and tamasic diet, diet for yogic practitioners

Unit II:

Food stuffs - Qualities of food - ancient thoughts on food - Guidelines of eating

Yogic diet: General introduction of Ahara; concept of Mitahara; Classification in yogic diet according to traditional Yoga texts; diet according to the body constitution (Prakriti) - Vata, Pitta and Kapha Gunas

Concepts of Diet - Pathya and Apathya according to Gheranda Samhita, Hatha Pradeepika and Bhagavad gita; importance of yogic diet in Yoga Sadhana and its role in healthy living.

Unit III:

Nutrition during various stages of life childhood, adolescence, adult hood, Middle aged & aged - Nutrition during pregnancy & tips.

Principles of weight control & Management.

Unit IV:

Nutrition therapy for infectious diseases: Malaria, Typhoid, cholera, whooping cough, tuberculosis, measles, venereal diseases, dysentery, leprosy

Unit V:

Nutrition therapy for life style diseases: HBP, diabetes, obesity, cancer, stroke

COURSE OUTCOMES:

- CO1 - Learn about macro and micronutrients and various diets and their application
- CO2 - Gain an understanding of yogic diet as prescribed in classical texts
- CO3 - Understand nutritional requirements during various life stages
- CO4 - Nutrition therapy for infectious and lifestyle diseases is learned

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14

CO1				1	1	2						2		1
CO2				1	1	2						2		1
CO3				1	1	2						2		1
CO4				1	1	2						2		1

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3
4	3	3

Generic

PYT18GE201

YOGIC PRACTICES

Unit I:

Essentials of yogic practices, cleanliness and food, bath, time ,sun, closing eyes, place, mirror, breathing, awareness, age limitation, sequence, blanket, clothes, position, emptying the bowels and stomach counter pose, pregnancy , contra –indication, duration, straining, special provisions for women and patients, fitness, posture , side effects.

Loosening the joints

Surya Namaskar: for children (10 steps)

Bihar School of yoga model

Vivekananda Kendra model

Unit II: Asanas: Vrkshsasana, Parivrtha Trikonasana, Virabhatrasana, Garudasana, Padahatasana, Ushtrasana, sirshasana, Halasana, Sarvangasana, Matsyasana, Bhujangasana, Salabhasana, Dhanurasna, Navasana, Nouhasana, Siddha Yoniasana, Artha Matsyendrasana, Pachimottanasana, Baddha konasana, kukutasana, Padmasana,

Vajrasana, Siddhasana, Savasana

Unit III: Pranayama

Yogic Breathing, Kapalbhati, Bhramari, Ujjayi, Sheetali, Sheetkari, Bhastrika, Nadi Shodhana

Unit IV: Kriyas: Jalaneti, Sutraneti

Bandhas: Jalandhara Bandha, Moola Bandha, Uddiyana Bandha

Mudras: Chin mudra, Chinmaya mudra, adhi mudra, Brama mudra, Bhairava mudra, Bhairavi mudra, Shanmuki mudra, vipareeta karani mudra, yoga mudra, ashwini mudra, nasiga mudra.

Unit V: Meditation

Yoga nidra, Rajayoga Meditation, Trataka meditation, Chakra Meditation, Nine-centred meditation, Preksha meditation, Mindfulness based stress Reduction Technique.

COURSE OUTCOMES:

- CO1 - Learn about the essentials of the yogic practices
- CO2 – Exposed to techniques of loosening the joints and Surya Namaskar for children
- CO3 - Oriented to some of the moderate-level asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1											3	1	2	2
CO2											3	1	2	2
CO3											3	1	2	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	2
2	3	3
3	3	3

Skill enhancement course PYT18SE201

COMPUTER APPLICATIONS

Unit 1

Introduction to computer- definition- type of computer- basic parts - hardware -software -input and output devices and asthmatic &logic unit control unit -CPU -comparison of human being and computer.

Unit 2

Microsoft Word: title Bar, Member, standard toolbar bar - formatting toolbar bar- formal bar, ruler bar, status bar –task bar creating document -formatting editing – deleting - copying - saving.

Unit 3

Microsoft Excel : title bar- menu bar- standard toolbar- formatting toolbar- formal bar creating -Ruler status bar – task bar – creating document - formatting -editing –deleting- saving -chart and mathematical operations.

Unit 4

Microsoft Power Point: preparing a slide - animation -clipart -pictures from file background designing- computer and communication – copying- saving- presentation- working with slide adding life printing running a slideshow presentation

Unit 5

Internet: introduction - History - uses – connection - worldwide web– usage of Internet Explorer -search box -email id - outwork Express - inbox outbox, sent items draft- sending messages , save, print, reply, forward, previous message and text chatting - role of computer in teaching the techniques of yoga Research, and data analysis literature collection through internet

COURSE OUTCOMES:

- CO1 - Develop theoretical and practical aspects of MS Word, Excel, PowerPoint and Internet
- CO2 – Ability to apply these applications in thesis and record preparation, and during presentations and demonstrations

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1								1	1					
CO2								1	1					

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	2
2	1	3

Co-curricular PYT18EC201

TEACHING PRACTICE IN EDUCATIONAL INSTITUTIONS

Teaching practice will be organized for 15 days during 2nd semester.

The assessment of the students is internal for 100 marks students should design programming in yoga and attitude practice and train in educational Institution for 15 days

COURSE OUTCOMES:

- CO1 - Experience in designing yogic programmes for various age groups
- CO2 – Practical teaching of yogic practices based on the needs and requirement of the subjects

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1								2	1	2	3	1	2	3
CO2								2	1	2	3	1	2	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3

Practical

PYT18CL201

PSYCHOLOGICAL TESTING

Anxiety
Assertiveness
Study skill
Job satisfaction
Emotional maturity
General mental alertness
Attitude
Adjustment
Division of attention
Steadiness
Learning
Reaction time

COURSE OUTCOMES:

- CO1 - Understand various cognitive and emotional states and gain competency

in measuring these variables through different psychological tools

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1					1	1	2	1	1	1				3

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	3

Practical

PYT18CL202

YOGIC PRACTICE AND MODIFICATIONS -II

Unit 1:

Loosening the joints

Surya Namaskara : for children (10 steps)

Bihar school of yoga Model

Viveka nanda Model

Unit 2:

Asanas: Vrkshasna, parivrirthatrikonasana, virbhadrasana, garudasana, padahastasana, ushatrasana, sirshasana, halasana, sarvangasana, matsyasana, bhujangasana, Salabhasana,Dhunarasana, Navasana,naukasana, siddhasana, siddhayoniasana, ardhamatsyasana, paschimouttanasana, Baddhkonasana, kukutasana, padmasana, vjrasana, siddhasana, savasna

Unit 3:

Pranayama: Yogic Breathing, Kapalabhati, Bharmri, Ujjayi, Sheetali, sheetkari, Bhastrika, Nadisodhna

Unit 4:

Kriya: Jalneti, sutraneti

Bandha: Jalandhara Bandha, Moola Bandha, Uddiyana Bandha

Mudra: Chin mudra, chimya mudra, Adi Mudra, Brahma Mudra, Bhirava Mudra, Bhairvi Mudra, shanmukhi Mudra, Vipareetakarni Mudra, Yoga Mudra, Ashwani Mudra, Nasiga mudra

Unit: 5

Meditation: Yoga nidra, Rajyoga Meditation, Tratka Memeditation, Chakra Meditation, Nine Centerd meditetion, Preksha Meditetion, Mindfulness Based Strees Reduction technique

COURSE OUTCOMES:

- CO1 - Exposed to techniques of loosening the joints and Surya Namaskar
- CO2 – Oriented to some of the moderate-level to advanced asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1											3	1	1	2
CO2											3	1	1	1

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

(CO)	1	2
1	3	3
2	3	3

PYT18CT301

TEXT IN YOGA THERAPY

Unit-1:

Veda

Uapnishads: Ishasyopnshad, kena, kath, Mundaka, Mandukya, Aitareya, Taittriya, Chandongya, Brihadaryanaka, Upnishad

Bhagvadgita: Yoga in Bhagwatgita (chapter2), Karma yoga (chapter 3), Yoga in (chapter 6), Bhaktiyoga (chepter 12), yogic diet (chater 14-16), Moksha(chapter 18)

Unit 2:

Yoga sutra, thirumandiram yoga, yajnavalkya samhitha, yoga rahasya

Unit 3:

Goraksataka, Hatha yoga pradipeeka, Gheranda samhita, Siva samhita, Hatha Ratnavali

Unit 4:

Sushrut Samhita, Charka Samhita, Manusmriti, Sankhya Darshana, Vyasa Bhashaya, Vairagyashatak Dhyan yoga prakasa.

Unit 5:

yoaga therapy in swami ramdev's book ,mukunda stile's structural yoga therapy, B.K.S. Iyangar's yoga ,the path of Holistic Health,Bihar school of yoga's yogic management of common disease,krishnamacharya yoga makaranda, chandrashekaran's yoga therap,swami sivananda sarswati, yoga therapy swami kuvaalyananda ,yoga therapy svyasa'collection

COURSE OUTCOMES:

- CO1 - Learn about Vedas and principle Upanishads
- CO2 - Understand important concepts and tenets of Bagavad Gita and Yoga Vashista
- CO3 - In-depth study and understanding of the concepts and philosophy of basic

hatha yoga texts, Ayurveda texts, and Indian philosophy

- CO4 - Understand the yoga therapy techniques and approaches as defined by the modern Hatha Yoga texts

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1	3	3									3		1	1
CO2	3	3									3		1	1
CO3	3	3									3		1	1
CO4	3	3									3		1	1

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	1
2	2	1
3	2	2
4	3	3

PYT18CT302

PATHOLOGY AILMENTS AND YOGA THERAPY

UNIT-1 – Pathological Study – Yogic perspective

- Study of important pathological conditions as seen by allopathic system
- Basic understanding of pathological changes in ailments
- Yogic way of assessment and confirmation of these changes in an individual.
- Therapeutic application of yoga for the ailments with some important diseases as

	examples with particular reference to what to avoid, what to prescribe and how to modify them to suit the individual - Study of the manifestation of these ailments and the effect of the ailment on the individual and the principles behind the individualstic approach of yoga - Disease oriented approach vs. individual oriented approach. **UNIT-2**-Theraputic application of yoga in skeleton-muscular system - Low back pain - Sciatica - Cervical spondilosis - Ankylosing spondilosis - Osteoarthritis - Rheumatoid arthritis **UNIT-3**- Therapeutic application of yoga in Digestive System - Gastritis - Peptic ulcer disease - Hernia - Constipation **UNIT-4**-Therapeutic application of yoga in Respiratory and Cardio – Vascular System - Allergic sinusitis - Asthma - COPD - Hypertension - Circulatory Insufficiency - Varicose vein **UNIT-5**-Theraeutic application of yoga in Nervous, Endocrine, Urinary, Lymphatic, Reproductive system and sensory conditions. - Migraine

- Epilepsy and stroke
- Hypo and hyperthyroidism
- Irregular periods
- Pregnancy-pre &post natal care
- Urinary insufficiency
- Lymphatic edema
- Refractive errors in the eye

COURSE OUTCOMES:

- CO1 - Learn about the Allopathic and yogic pathology of diseases
- CO2 - Ability to asses and prescribe yoga therapy for important diseases
- CO3 - Gain knowledge about the yogic intervention specific to major systems of the body and their respective ailments

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1		3	1	3	1	1	1			2		2	2	2
CO2		2	1	1	1	1	1	3		2	2		2	2
CO3		2	1	1	1	1	1			2	3	2	2	2

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3

PYT18CT303	**TRADITIONAL SYSTEMS OF MEDICINE & THERAPIES** **UNIT-1** Origin of Ayurveda – Aim and importance of Ayurveda , Philosophy and goals of Ayurveda, Unique Approach of Ayurveda – Ayurveda texts, chakra samhita, Sushruta Samhita, Kashyapa Samhita, Rasatantra, Unique features of Ayurveda – Hygienic principles of Ayurveda (Dhinacharya)- Five elements of Ayurveda Doshas, Gunas, Dhatus, Upa hatus, Eight Categories or branches of treatment – Nadis vijnana – Nadis and Chakras,- Charecteristics of different prakritis- causes of disease- method of disease examination – Ayurveda diet. **UNIT-2** Ayurveda effects of yogic principles & theraopies – Ayurvedic purification practices – Panchakarma- vamanam, virechanam, basti, Anuvasana, Nasya, Rakta Moksana- Abhyanga, Swedanam, Nasayam, Njavarakizhi, Pizhichil. **UNIT-3** History and concepts of Siddha medicine: Principles of Siddha Medicine System, Five Elements Theory, Three Biological Humars, Seven Physical Constituents, Pancha Bhudas , Pancha Koshas, Types of Siddha Medicine, Importance of Kayakalpa, Kitchen and herbal medicine, Diet Regulations, Varmam and Thokkanam, Treatment of siddha Medicine for life style diseases. **UNIT-4** Concept of Naturopathy – Principles of Naturopathy – Methods of Naturopathy: Diet, Fasting, Treatment by earth, water treatment, Treatment by rays, Massage. **UNIT-5** Acupuncture, Acupressure, Exercise therapy, Physiotherapy, Music therapy, Color therapy, Magneto Therapy, Reiki.

COURSE OUTCOMES:

- CO1 - Understand the principles and philosophy of important Ayurveda texts
- CO2 - Gain knowledge about the Ayurvedic purification practices and Ayurvedic diet
- CO3 – Understand the principles of Siddha medicine and treatment for lifestyle disorders
- CO4 - Various alternative therapies and nature cure treatment approaches are learned

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1		1		2	1		1		2	2				1
CO2		1		2	1		1		2	2				1
CO3		1		2	1		1		2	2				1
CO4		1		2	1		1		2	2				1

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	2
2	2	2
3	2	2
4	3	3

Discipline Specific Elective

METHODS OF NATUROPATHY

Unit I:

PYT18DE005

Meaning - Definitions - Scope - Principles and Philosophy of Naturopathy- Modalities of Naturopathy: Diet therapy, fasting therapy, mud therapy, hydro therapy, colon hydrotherapy, Massage therapy, air therapy, chromo therapy, Magento therapy, Sun rays

Unit II:

Mud therapy: Mud pack, Chest pack, Mud Bath, Mud pack for face, Knee mud pack, Wet-sheet pack for the whole body, Banana leaf bath

Unit III:

Hydro therapy: Enema, Hip Bath, alternative hip bath, Sitz Bath, Spinal Bath, Spinal spray bath, Foot and arm bath, Hot foot bath, Arm bath.

Unit IV:

Steam bath, Sauna bath, Sponge bath, immersion bath, Friction bath, Under water massage, Wet sheet pack, chest pack, knee pack, Local steam, steam inhalation, Jet spray massages, Color Hydrotheraphy, Whirlpool bath.

Unit V:

Naturopathy Diet (Eliminative , soothing, constructive), Fasting, Sunbath, Air bath, massage

COURSE OUTCOMES:

- CO1 - Gain an understanding of the principles, philosophy and modalities of naturopathy
- CO2 – Learn about the therapeutic naturopathy treatments such as mud therapy, hydrotherapy, steam bath and diet and their application for common disorders

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1				2			1					1		
CO2				2			1					1		

	1 - Low 2- Medium 3- High **MAPPING (CO's and PSO's)** Course Outcomes (CO) / Program Specific Outcomes (PSO) 1 - 1: 3, 1 - 2: 3 2 - 1: 3, 2 - 2: 3
Generic PYT18GE301	**STRESS MANAGEMENT** **Unit I:** Meaning , Concepts, levels, types, reaction, causes, symptoms, complications, remedies, stress and yoga **Unit II:** Sources of stress: internal and external, release of stress **Unit III:** Texts on stress, Kleshas and stress, Stress and koshas **Unit IV:** Effective stress management- Diet, yogic practices- systems of medicine and therapies **Unit V:** Frustration, conflicts and psychosomatic disorders, relationship between body and mind, mental health.
	COURSE OUTCOMES: • CO1 - Understand the concepts, types and remedies of stress

- CO2 – Learn about the yogic approach to stress management

- CO3 - Gain an insight on the impact of stress management on psychosomatic disorders and mental health

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1		2	1		1	1	2			1			2	1
CO2		2	1		1	1	2			1	2	2	2	1
CO3		2	1		1	1	2			1		2	2	1

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	2	3

Ability enhancement compulsory course PYT18AE301

PERSONALITY DEVELOPMENT

Unit-1

Personality: Personality in psychology – Meaning, Definition, concept, need, nature and scope of personality development- structure of personality.

	Unit-2 Stage of human development- determinants of human development of personality- developmental processes: physical, mental, moral, social, emotional and spiritual. **Unit-3** Guidelines on personality – values and spirituality- developing good personality based on yoga- anger and stress management- role of diet on personality. **Unit-4** Personality development with special emphasis on pancha kosha- Ashtanga yoga- Factors of personality- Theories of personality- Attitude- Self-esteem, - Memory-Concentration-creativity-intelligence- Assessment of personality. **Unit-5** Leadership- Qualities of leaders-Positive thinking- powers and effects of thoughts- career planning –career rules- Better human relations- time management.
	COURSE OUTCOMES: • CO1 - Learn about the concepts and developmental processes of personality • CO2 - Understand the role of yoga, diet and stress management in developing the personality. • CO3 - Gain insight into the development of leadership qualities and career development **MAPPING (CO's and PO's)**

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1						1	1	1		1		2		1
CO2						1	1	1		1		2		1
CO3						1	1	3		1		2		1

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	1
2	2	3
3	1	1

Co-curricular

PYT18EC301

INTERNSHIP

(HOSPITALS OR HEALTH CENTERS OR YOGA OR NATUROPATHY CENTRES

Internship will be organized for 15 days. The assessment of the students is internal for 100 marks. Students should design programme in yoga and are to practice and train in Hospitals or Yoga or Naturopathy Centres for 15 days.

COURSE OUTCOMES:

- CO1 - Experience in designing yogic programmes for various age groups and people with disorders
- CO2 – Practical teaching of yogic practices based on the needs and requirement of the subjects

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1					1				3	2	2	1	2	2
CO2					1				3	2	2	1	2	2

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3

PRACTICAL
PYT18CL301

YOGIC PRACTICES AND MODIFICATIONS-III

Unit-1: Loosening the joints

Pawanmuktasana series

Suryanamaskar: Sivananda Model, Chandranamaskar

Unit-2: Asanas

Virabhadrasana, Parsavottanasana, UthithaTrikonasana, AdhomukaSavasana, Karnapidasana, Kandharasana, Titibhasana, Padma Sarvankasana, Salamba Sirasasana, gomukasana, Setubandhasana, Chakrasana, TriangaMukhaipada paschimottanasana, Marichyasana, Virasana, Svastikasana, Shashangasana, Garudasana, Mayurasana, Padma Mayurasana, Bhadrasana,Simhasana, AkarnaDhanurasana, Parsvakonasana, Savasana.

Unit-3:Pranayama

Moorchapranayama, Anulomaviloma, Sadanta Pranayama, Pranayama with Kumbhaka and bhandhas

Kriya

Dhanda dhauti, Vatsara dhauti, Nauli (Madhyama, Vama, Dakshina)

Unit-4

Mudras: Yoni Mudra, Lotus Mudra, Dhyani Mudra, Sakthi Mudra, Shambavi Mudra, Pashinee Mudra, MahaBheda Mudra, Ksepana Mudra.

Unit-5

Meditation : DRT, Walking Meditation, Vipasana Meditation, Nine centered Meditation, Yogic Sukshmavyama, Sudharsiya, Zen Meditation, SavitakidhyanDharana, Mind sound Resonance Technique.

COURSE OUTCOMES:

- CO1 – Learn about the essentials of the yogic practices
- CO2 – Exposed to techniques of loosening the joints and Surya Namaskar
- CO3 - Oriented to some of the moderate-level to advanced asanas, pranayama, kriya, bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1											3	1	2	2
CO2											3	1	2	2
CO3											3	1	2	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)		
	1	2	
1	1	2	
2	3	3	
3	3	3	

Practicals

PYO18CL302

CLINICAL APPLICATION IN TRADITIONAL INDIAN SYSTEMS OF MEDICINE AND THERAPIES

UNIT-1

Application of traditional Indian medical systems and therapies.
Ayurveda – Doshas, Dinacharya, Ayurvedic Diet, panchakarma Therapy, Siddha – Five elements theory, physical constituents, pathology (Kayakalpa,Kitchen Herbal and other types of medicine), Naturopathy and Modalities of Naturopathy.

UNIT-2

Varmam and Thokkanam, Exercise therapy, Cryo therapy, Acupressure, Acupuncture, Chromo Therapy, Magneto Therapy, Music Therapy, Pranic healing, Magnetotherapy, Reflexology

UNIT-3

Therapeutic application for: High Blood Pressure, Obesity,Diabetes Mellitus, Asthma, Sinusities, Migraine, Arthritis, Back pain, Thyroid Problems, Constipation, Impotency, infertility, stroke, epilepsy, Parkinsons disease, sleep disorders,skin diseases, insomnia, Anaemia.

UNIT-4

Therapeutic applications for psychological disorders:
Neurosis: Stress, Depression, eating disorders,
Psychosis: Schizophrenia, autism, Bipolar disorders, dementia
Personality Disorders: Paranoid, histrionic, drug addicts, smoking alcoholism, gambling, anti-social activities.

UNIT-5

Therapeutic applications for the problems of women- Amenorrhea, Dysmenorrhea,

Menorrhagia Hypomenorrhoea, Oligomenorrhoea, polymenorrhoea, leucorrhoea, uterus related problems, miscarriage, pregnancy-pre and post natal care, PCOS.

COURSE OUTCOMES:

- CO1 - Gain practical knowledge about the concepts and principles of yoga therapy, Ayurveda, and siddha, naturopathy, acupuncture, acupressure, physiotherapy, and their clinical application for diseases

- CO2 - Understand the treatment modalities in yoga therapy, Ayurveda, and siddha for life-style disorders, psychological disorders, and disorders specific to women

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1		2		3	1	1			1			1	1	2
CO2		2		3	1	1			1			1	1	2

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	2
2	3	3

PYO18CT401 **RESEARCH PROCESS IN YOGA THERAPY**

Unit-1: Research –Meaning, Definitions, Need, Nature and scope of research in yoga, Types of research- Basic-Applied-Action – Qualities of a researcher-Criteria in locating and selecting a research problem- preparation of research proposal Mechanism of research proposal- formulation of hypothesis-variables and its types.

	Unit-2: Types of research design –Describe research –survey method, cae study, method, Experimental Method- Categories: Longitudinal design, Quasi Experimental design, cross sectional design, Double blind placebo design, Experimental Design Types: Single group Design Reverse group design, Repeated measure design static group comparison design, Rotated group design, Random group design, Equated group design, Factorial design. **Unit-3**: Data- Population- Sample-Subject- Sampling: Characteristics, Principles, steps, Determining the sample size, criteria in selection, Types of sampling probability sampling methods- Random and complex, Non –Probability Sampling methods- Writing Synopsis and Research report-Front Materials, Main Chapters and Back materials- Recent trends in yoga research, yoga research centres and their works in India. **Unit-4**: Statistics-Meaning- Need and importance in research – non-parametric statistics- Treatment of F-test, 't' test one way- two way – testing- chi square-statistical packages- SPSS-SAS- data process, data analysis-Graphical Representation, Data interpretation. **Unit-5**: Types of Statistics- Parametric and non-parametric-Normality of data-Normal Curve – Data Analysis-'t' Test, F-test Type I Type II error-ANOVA-ANCOVA,(one way & two way)-Post hoc test-pearson product moment correlation-Partial and Multiple Correlation- Regression simple linear and multiple linear-Post hoc tests.
	COURSE OUTCOMES: CO1 - Understand the nature and scope of research in yoga, various research methods and design, and areas of research CO2 – Learn to prepare a research proposal, formulate hypothesis, and implement research design and sampling C03 - Learn to write research report and synopsis

CO4 - Gain practical competency in statistical concepts related to experimental research

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1					2				2	2	2	3		2
CO2					2				2	2	2	3		2
CO3														
CO4														

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	3
2	1	3
3	1	3
4	1	3

PYO18CT402

YOGA THERAPY IN YOGA SUTRAS

Unit : l

Basics and date of the yoga sutra –Raja yoga – notable commentaries- Ashtanga yoga; Yoga- mind – psychic powers.

1) Samadhi pada
2) Sadhana pada
3) Vibhuti pada
4) Kaivalyabpada

Unit: ll

1:1-2, 1:5 to 7, 1:12, 1:17 to 18, 1:30 to 51.

Unit: lll

2:1 to 11, 1:23 to 24, 2:28 to 55.

Unit: lV

3: 1 to 9, 3:25 to 38, 3:41, 3:56.

Unit :V

4:1, 4:7, 4:19, 4:34.

COURSE OUTCOMES:

- CO1 - Understand the philosophy, principles, concepts and commentaries of Yoga Sutra
- CO2 - In-depth study of Samadhi Pada, Sadhana Pada, Vibhuti Pada and Kaivalya Pada with specific importance to the therapeutic application

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1	3	3					1						2	
CO2	3	3					1						2	

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	1
2	2	1

PYT18CT403	**THESIS**

1) To acquire practical knowledge.
2) To acquire skill in the administration of yoga practices in the real life.
3) To identify some common problems found among people.
4) To do a systematic investigation into such problems.
5) To suggest remedial measures to make life more meaningful and purposeful.
6) To learn the clinical method, case history writing, measurement of clinical symptoms, psychological parameters. Application of statistics on the initial and final dada recorded.

COURSE OUTCOMES:

- CO1 - Acquire practical skills in a systematic investigation of a research problem
- CO2 - Organize the samples and sampling techniques which is relevant to the study
- CO3 – Apply the statistics in research thesis for evaluation
- CO4 – Learn measurement of clinical symptoms and psychological parameters
- CO5 – Organizing the data and presenting it as a thesis

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1				1	2	1	1	2	3	1		2		3
CO2														
CO3														
CO4				1	2	1	1	2	3	1		2		3
CO5														

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	3
2	1	3

	3	1	3
	4	1	3
	5	1	3

PRACTICAL

PYT18CL401

YOGA PRACTICES AND MODIFICATIONS – IV

Unit : l

Loosening the joints.
Pavanmuktasana Series.
Suryanamaskar : kriya Suryanamaskar , Advance Suryanamaskar,

Unit: ll

Asanas: Ardha baddha padmottaanasana. Utthita Hasta Padangusthasana. Vatayanasana. Hanumasana. Padangushthasana. Padma Sarvangasana, kama Pidasana, Vrischikasana , poorna Bhujangasana, poorna salabhasana, poorna Dhanurasana, poorna matsyendrasana, Eak pada Sirsasana, KOOrmasana, Padma Sirshasana, Ardha Baddha Pachimottanasana, Paryangasana, Bhekasana, Baddha Padmasana, Vamadevasana, Parivritti Janusirshasana, Savasana.

Unit:lll

Pranayama**:** Kewali Pranayama (Soham), Plawini Pranayama, Kumbhaka and Bandhas with ratios.

Unit:lV

Kriyas**:** Ghrta Neti, Dugdha Neti, Basti (Enema)
Bandhas: Maha Bandha.
Mudras**:** Kaki Mudra, Bhujangini Mudra, Vipareeta Karani Mudra, Kundalini Mudra, Mahavedha Mudra, Vajroli/Sahajili Mudra, Manduki Mudra, Ashwini Mudra,

Unit :V

Meditation: Transcendental, Cyclic (S- vyasa), Guided Meditation, Dynamic Meditation, Tibetan Meditation.

COURSE OUTCOMES:

- CO1 - Learn about the essentials of the yogic practices
- CO2 - Exposed to techniques of loosening the joints and advanced Surya Namaskar
- CO3 - Oriented to some of the advanced level of asanas, pranayama, kriya,

bandhas, mudras and meditation

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1											3	1	2	2
CO2											3	1	2	2
CO3											3	1	2	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	1
2	3	3
3	2	3

PRACTICAL

PYT18CL402

CLINICAL APPLICATIONS IN TRADITIONAL SYSTEMS OF MEDICINE AND YOGA THERAPY

Unit :l

- Vyuham in yoga therapy
- Heyam or the symptoms
- Countering predisposing factors.
- Hetu or the cause
- Aggravating factors
- Hanam or the remedy

	➢ Rellieving factors ➢ Upayam or the tools ➢ Importance of regular reviews ❖ **Pariksa in yoga therapy** ➢ In depth study of the diagnostic tools ➢ Darsanam ➢ Sparsanam ➢ Prasanam ➢ Neetakanta Model; The ideal teacher student relationship ❖ **Nadi pariksa in yoga Therapy** ➢ Group classes vs. Individual classes. ➢ Nadi system- Definition from texts. ➢ The different of nadi pariksa in yoga therapy. ➢ Methodology of nadi pariksa in yoga therapy ➢ Differences between Nadi pariksa and pulse reading **Unit II Application of Yoga Therapy** **Extensive theoretical and practical learning about these diagnostic tools. Specially with respect to:** ➢ The pre requisites for using these tools. ➢ The exact technique of using these tools ➢ The limitations of these tools ➢ The principles involved in inferring information by using these tools ➢ Application of these tools during therapeutic intervention.

	❖ **Modification an applied to Therapy** ➢ Modification vs adaptation ➢ Simplification vs intensification ➢ From vs function ➢ Modification of asana ➢ Modification of meditation ➢ Modification of chanting. **Unit lll** ❖ Therapeutic application of yoga in skeleton- muscular system ➢ Low back pain ➢ Cervical spondylosis ➢ Spondylosis ➢ Ankyilosing spondilosis ➢ Osteoarthritis ➢ Rheumatoid arthritis **Unit: IV** ❖ Therapeutic application of yoga of in digestive system ➢ Gastritis ➢ Peptic ulcer disease ➢ Hernia ➢ Constipation ❖ Therapeutic application of yoga of in Respiratory system ➢ Allergic sinusitis ➢ Asthma

	➢ COPD ❖ **The Therapeutic application of yoga in cardiovascular system** ➢ Hypertension ➢ Circulatory insufficiency ➢ Varicose veins **Unit: V** The Therapeutic application of yoga in Nervous, Endocrine, Urinary, Lymphatic, Reproductive system and sensory Conditions. ➢ Migraine ➢ Epilepsy and stokes ➢ Hypo and Hyperthyroidism ➢ Irregular periods ➢ Pregnancy – pre & post natal care ➢ Urinary insufficiency ➢ Lymphatic Edema ➢ Refractive errors in the eyes.
	COURSE OUTCOMES: • CO1 – Gain practical knowledge about the causes, symptoms, and predisposing factors of various diseases • CO2 – Learn about the principles and application of various diagnostic and therapeutic tools of yoga therapy • CO3 – Understand the methodology and application of nadi pariksha for therapeutic intervention • CO4 – Learn techniques of modifying asanas, pranayama, meditation and chanting in therapeutic intervention

- CO5 – Study the application of therapeutic yogic modules for disorders of the major systems of the body

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1		2		3	1	1	1			2			1	3
CO2					1				3	2	2	1	2	3
CO3			1						3	2				
CO4	2	2		1						3	3		3	3
CO5										2	3	2	3	3

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	3
2	3	3
3	3	3
4	3	3
5	3	3

Discipline Specific Elective

PYT18DE008

STATISTICS IN YOGA THERAPY

UNIT-I

Statistics-Basic Concept -Need and Importance of Statistics; Data-Raw and Grouped, Types of data; Concept And Calculations of Measures of Central Tendency-Mean, Median And Mode; Measures of Variability- Range, Mean Deviation, Quartile Deviation And Standard Deviation.

UNIT-II

Introduction To Normal Distribution - Normal Curve - Characteristics of Normal Curve - Properties of Normal Curve - Standard Normal Curve - Problem Based On Normal

Distribution - Uses of Normal Distribution.

UNIT-III

Testing Of Hypothesis - Procedure, Types of Hypothesis, Level of Significance, One Tailed and Two Tailed Test, Degrees of Freedom; Test of Significance for Difference of Means- t Test -Independence and Dependence Test, Z-Test ; One Way Analysis of Variance.

UNIT-IV

Correlation- Pearson Product Moment Correlation, Spearman Rank Order Correlation, Phi Correlation, Biserial Correlation Partial and Multiple Correlation

UNIT-V

Non Parametric: Chi Square Test - Equal Occurrence Test, Independence of Attributes, Contingency Coefficient; Graphical Representation - Line Diagram, Bar Diagram- Multiple Bar Diagram, Pie Diagram.

COURSE OUTCOMES:

- CO1 - Learn about the types of data and the measures of central tendency and variability
- CO2 - Understand normal distribution and testing of hypothesis through T test, ANOVA, correlation, and non-parametric tests
- CO3 - Gain ability to present data through graphical representations

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1												2		
CO2												2		
CO3												2		

1 - Low 2- Medium 3- High

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

1	1	3
2	1	3
3	1	3

Skill-enhancement course PYT18SE401

ENVIRONMENTAL STUDIES

Unit: l
Scope and importance- need for public awareness.

Unit: ll
Resources – Water – Forest – Minerals- Food Energy- land.

Unit: lll
Ron mental – pollution- definition – causes- Effects and control measure of Air pollution – Water- Soil-Noise- Nuclear.

Unit: lV
Social issues and the environment- Urban problems related to energy – Water conservation – Rainwater harvesting- Water shed management- Environment ethics- Climate change – Global warning – Acid rain – Ozone layer deletion.

Unit: V
Human Population and the Environment – population growth variation among Nation population explosion – Family welfare program- Environment – and human wealth.

COURSE OUTCOMES:

- CO1 - Raises awareness about the environment, natural resources and social issues that affect environment
- CO2 - Learn about the causes and effects of environmental pollution and means to control it
- CO3 - Understand the impact of various social issues and population growth on the environment

MAPPING (CO's and PO's)

Course Outcome	Programe Outcomes													
	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO9	PO 10	PO 11	PO 12	PO 13	PO 14
CO1						2	1					2		

CO2						2	1					1		
CO3						2	1					2		

1 - Low **2- Medium** **3- High**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	2
2	1	1
3	1	1

RE

(1)

Tamil Nadu Physical Education and Sports University

Chennai

Department of yoga

Name of the course	M.Phil in Yoga
Eligibility	Any PG Degree in Yoga, Yoga for Human Excellence, Value Education and Spirituality, Crisis Management and related courses
Stream	Regular
Duration	One Year
Medium	English
Attendance	Minimum 80%
Year	2017 – 18 onwards

M.Phil in YOGA (Regular)
SCHEME OF EXAMINATIONS
MARK DISTRIBUTION

SEMESTER I						
S. No	**PAPER CODE**	**TITLE**	**CREDIT**	**INTERNAL MARKS**	**EXTERNAL MARKS**	**MAX. MARKS**
1		Research Methodology and Applied Statistics in Yoga		40	60	100
2		Area of specialization (Any one of the following) Applied yoga or Yoga therapy		40	60	100
		Total		**80**	**120**	**200**
SEMESTER- II						
S.No	**PAPER CODE**	**TITLE**	**CREDIT**	**INTERNAL MARKS**	**EXTERNAL MARKS**	**MAX. MARKS**
1		Area of Dissertation		40	60	100
2		Computer operations, communications & Educational skills (Pedagogical skill includes practical training in teaching)		40	60	100
3		Dissertation		40	60	100
4		Viva- voce		--	50	50
5		Village Placement Programme		50	--	50
		Total		**170**	**230**	**400**
		Grand Total				**600**

10101

RESEARCH METHODOLOGY ANS STATISTICS IN YOGA

Unit 1: Criteria in locating and Selecting a research problem- Preparation of Research Proposal- Mechanism of research proposal- Formulation of hypothesis- characteristics, types, sources, advantages and disadvantages, testing hypothesis, Variables and its types- Independent and dependent variables in yoga- Construction and standardization of questionnaire- Finding Related literature- Funding agencies in yoga research- submitting research proposal to funding agency

Unit 2: Types of Research Design, Descriptive Research- Survey method, Case study method, Experimental method- Categories: Longitudinal design, Quasi Experimental design, cross sectional design, Double blind placebo design- Experimental Design Types: Single group design, Reverse group design, Repeated Measures design, Static group comparison design, Rotated group design, Random group design, Equated group design, Factorial design

Unit 3: Sampling: Characteristics, principles, steps, Determining the sample size, criteria in selection, Types of sampling: probability sampling methods – Random and complex, Non- probability sampling methods- Writing Synopsis and Research report- Front materials, Main chapters and Back materials- Method of writing Abstract and Full paper for presenting in journals and conferences, criteria in establishing Research laboratories in yoga, Recent trends in yoga research, yoga research centers and their works in India.

UNIT IV

Parametric : Statistics- Basic concept; Normal distribution-Normal Curve, Properties and problem based on Normal distribution ; Testing of Hypothesis-procedure, types of hypothesis, level of significance, one tailed and two tailed test, degrees of freedom ; Test of Significance for difference of Means- t test-independence and dependence test ; Z test; Analysis of Variance- One way , Two way Repeated measues; ANCOVA- Post hoc test Correlation- Pearson product moment correlation.

UNIT V

Non Parametric: Chi square test – Equal Occurrence test, Independence of Attributes, Contingency coefficient; Mann Whitney U test; Wilcoxon Matched pair signed ranks test; Kruskal Wallis Anova by ranks; Friedman two way Anova by ranks; Correlation – Spearman rank order correlation, Phi Correlation, Biserial correlation Partial and Multiple correlation.

Reference:

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6)Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

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11) Elangovan R (2016) Research processes in yoga chennai: Ashwin publications

APPLIED YOGA

Unit I: Yoga: Nature, Need, Philosophy, History and Scope of Yoga – Modern Developments – Misconceptions and clarifications of Yoga- Paths of Yoga- Ashtanga yoga- Schools of Yoga - Important of yogic practices- Benefits of Yoga on human systems –Yoga for Super consciousness – Computer Applications in Yoga

Unit II: Contributions of texts to Yoga:
Vedas, Upanishads, Tantra, Bhagavad Gita, Yoga vasishtha, Yoga Sutras, Thirumandiram, Yoga Yajnavalkya Samhita, Goraksataka, Hatha Yoga Pradipika, Gheranda Samhita, Siva samhita, Hatha Ratnavali, Siddha Siddhanta Paddihati, Narada Bhakthi Sutras, Yoga Rahasya

Unit III:
Contributions to yoga by Ramakrishna, Swami Vivekananda, Sivananda, Maharishi Mahesh Yogi, Swami Rama, Krishnamacharya, Swami Kuvalayananda, Ramana Maharishi, Vethathiri Maharishi, Swami Dayanand Saraswati - Spirituality- Role of yoga and Religions on Spirituality- values- Methods to promote spirituality- Methods of teaching, Lesson plans, teaching aids – usage of props.

Unit IV:
Yoga and psychology – Facets of psychology and yoga – Yoga for psychological qualities – Yogic practices for various age groups – yogic practices for various professionals – Yoga and Women – Yoga and Sports – Yoga and Mind – Nadis and chakras – Role of Yoga on personality development.

Unit V:
Health, fitness & Wellness – causes of diseases and disorders, Nutrition – diet – Yogic diet – Yoga Therapy – Diagnostic tools – Modifications of Yogic practices – Yogic practices for insomnia , Hypertension, Diabetics, Obesity, Asthma, Back pain, Arthritis, Constipation, Neurosis, Psychosis and Personality Disorders – Women Disorders – Yoga and Indian Traditional systems of Medicine and therapies: Ayurveda, Siddha, Naturopathy, Physiotherapy, Varmam, Acupressure, Acupuncture, Music Therapy, Color Therapy.

References:-

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- Sivananda Sarawathi swami (1934) Yoga Asanas Madras: My magazine of india.
- Satyanada sarawari swami (2008) Asana, Pranayama, Mudra, Bandha, munger: Yoga publications trust.
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- Chandrasekaran k (1999) Sound Health Through Yoga, Sedapatti: Prem kalyan Publications
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- Yogeshwaranand saraswathi swami (1975) First steps to higher yoga, Gangothari: Yoga niketan trust.
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- Kirk Martin (2006) Hatha Yoha Illustrated Champaign: Humenkinetics.
- Gharote (2004) Applied yoga, Lonvla: Kaivalyadhama.
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- Kathy Lee Kappmeier and Diane M.Ambrosini (2006) Instructing Hatha Yoga, Champaign: Human Kinetics.
- Satyananda sararwati Swami (2007) Meditations from thitantras. Murgar: yoga publications Trust.

Elangovan R (2016) Fundamentals of yoga Chennai. Sathish publications

YOGA THERAPY

Unit I: History of yoga therapy- Essence and Principles of Yoga therapy- Physiology and pathology in the yoga- Shatra- koshas- doshas- Granthis - Pancha prana- Application of Yoga and its types- Methodology in Yoga Therapy – Factors (Heyam, Hetu, Hanam and Upayam) – Methods (Darsanam, Sparsanam, Prasnam, Nadi Pariksa) Examination of Vertebra, joints, Muscles, Abdomen and Nervous System and therapeutic applications - Modification of yogic practices – Yogic practices for Human Systems - Yogic diet

Unit II: Application of Indian traditional systems of medicine and therapies:
Ayurveda – Ashtanga Ayurveda – Doshas, Dinacarya, Ayurvedic diet, Panchakarma therapy - Siddha – Five elements theory, physical constituents, pathology (Kayakalpa, Kitchen, Herbal and other types of medicine) – Naturopathy - Principles of naturopathy - Modalities of Naturopathy - Varmam and Thokkanam, Physiotherapy, Acupressure, Acupuncture, Chromo therapy, Music therapy, Pranic Healing

Unit III: Therapeutic application of yoga: High blood pressure, Obesity, Diabetes Mellitus, Asthma, ulcer, Migraine, Arthritis, Back pain, Thyroid problems, constipation, impotency, infertility, stroke, Epilepsy, Parkinson's disease, sleep disorders.

Unit IV: Therapeutic application of yoga for psychological disorders:
Neurosis: stress, depression, eating disorders - Psychosis: Schizophrenia, autism, Bipolar disorders, dementia - Personality disorders: Paranoid, histrionic, drug addicts- Smoking, Alcoholism, Gambling – Anti-Social Activities

Unit V: Therapeutic application of yoga for the problems of women- Amenorrhea, Dysmenorrhea, menorrhagia, metrorrhagia, Hypomenorrhoea, oligomenorrhoea, polymenorrhoea, leucorrhoea, uterus related problems, miscarriage, pregnancy- Pre and post natal care, PCOS.

References :

1. Dr. O.P. Jaggi (2001), Healing Systems, Delhi, Orient Paper backs.
2. Lusis S.R. Vas (2001) Master Approaches to New age Alternative therapies, Delhi, Pustak mahal.
3. Shemanthakamani Narendhan et.al (2008) yoga and pregnancy, Bangalore : Swami Vivekananda Yoga Prakshema.
4. Nagarathna & Nagendra (2008) Yoga for Brounchial Assthma, Bangalore : Swami Vivekananda Yoga prakshana.
5. Nagarathna & Nagaendra (2007) Yoga for digestive disorders Bangalore: Swami Vivekananda Yoga prakshana.
6. Srikanta SS et.al (2008) Yoga for Diabeties Bangalore : Swami Vivekananda Yoga prakshana
7. Nagarathna & Nagendra (2008) Yoga for Hyper tension & Heart disease Bangalore : Swami Vivekananda Yoga prakshana.
8. Nagarathna & Nagendra (2008) Yoga for Arthritics , Bangalore : Swami Vivekananda Yoga prakshana.
9. Nagarathna & Nagendra (2008) Yoga for Backpain, Bangalore : Swami Vivekananda Yoga prakshana.
10. Shivananda Saraswati (1975) , yogic theraphy Gawhati, Bramacharya yogeswar umachal yojashram.
11. Sundaram, yoga charya (2004) sundara yogic therapy coimbatore: The yoga -pubishing home.
12. phulgonda sinha (1976) yogic cure for common diseases, Delhi : Orient paper backs.
13. Joshi (1991) yoga ad Nature -cure therapy New Delhi: Sterling publishers private Ltd.,
14. Garde R K (1984)
15. Ponde P K and L C Gupta (1987) , outline of sports medicine, New Delhi: Jaypee Brothers.
16. chandra sekaran (2012) yoga therapy, chennai: VHF publications.
17. Gore, Vaze, Kulkarni and oak (2008) yoga therapy for selected diseases, Lonavla: Kaivalyadhama
18. Stiles Ananda, structural yoga therapy, New delhi: Gnosis publishing House
19. Mamtora (2012) yoga for Back and joint disorders Mumbai: The yoga Institute
20. Kuvalyananda Swami and vinekar (2011) yogic therapy Lonavla: Kaivalyadhama

10201

Area of Dissertation

Questions and Answers are to be prepared according to the Research design and topic finalized:

Unit I: Front materials of the Research work: Title, Front page, Certificate by the supervisor, Declaration by the scholar, Curriculum vita, Dedication, acknowledgements, Table of contents, List of tables, List of illustrations, List of Appendices. Introductory chapter: justification and Usefulness of the topic, Objectives of the study, Statement of the problem, Hypothesis, Significance of the problem, Delimitations, Limitations, Meaning and the definitions of the terms

Unit II: Review of Related Literature: Types of Reviews, Studies on independent and dependent variables, Methodology; Selection of subjects (sampling, sampling design selected), Selection of variables (Justification for selecting independent and dependent variables), Experimental design selected, Pilot study, Criterion measures, Reliability of data, Reliability of instruments, Tester's reliability, Subject reliability, Orientation of subjects, Training procedure, Scheduling, Tests administered.

Unit III: Collection of data, Statistical techniques used, Data process, Analysis and interpretation, Test of significance, Level of significance, Results of dependent variables, Discussion on the findings of dependent variables, Discussion on hypothesis

Unit IV: Criteria (validity, reliability, representatives, generalisability) fulfilled-Summary, conclusions and Recommendations for Practitioners, Government and society, Back materials: Bibliography, Appendix

Unit V: Mechanics of writing the Research Report: Font size, space, paper, Margin, pagination, Numbers and symbols, Binding, language, Grammar, spelling, Uses of computer, qualities of the Scholar improved, Supervisor's Role, Experience gained in doing the research work.

References:

1) Best W John and James V Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

2) Kothari C.R. (1985) Research Methodology NewDelhi: Wiley Eastern Limited.

3) Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.,

4) Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

5)Clarke, H. Harrison and Clarke David H. (1972) Advanced Statistics, New Jercy: Prentice Hall Inc.

6) Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

7) Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

8) Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

9) Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

10) Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

11) Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

12) Elangovan R (2018) Research processes in yoga Chennai: [illegible]

10202

COMPUTER OPERATIONS, COMMUNICATIONS AND EDUCATIONAL SKILLS

UNIT : I Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT : II Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create insert – update – delete – select – commit – front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB.

UNIT: III What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face to face interactions (situations) – Written – Letter Writing – Report Writing – Memo's – Note making - Agenda preparation.

UNIT :IV Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking , Pronunciation , structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT: V Pedagogy : Meaning, Theories of pedagogy (Benjamin Bloom, Jean Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills, sex education – Integrating skill development, modernizing education and skill development – Basic and higher education : Issues and challenges.

References :

1. Peter Norton, " Introduction to Computers", 6th Edition , Tata Mcgraw Hill.
2. Ashok N. Kamthane, " Computer Programming", Pearson Education India.
3. Groff Weinberg, " The complete Reference SQL", 2nd Edition, Tata Mcgraw Hill.
4. Bott Special Edition using Microsoft Office 2007, Pearson Education India.
5. Gray W. Harsen and James V Harsen (1996) Data Base Management and Design, Prentice Hall
6. Jeffrey A Hotter, Mary B Prescolt, Fred R. Mcdadden (2002), Modern database Management, Prentice Hall.
7. Robert I T Futrell, Donald F. shafer Linda, (2002) Quality software project management Pearson Education, Asia.
8. ' Soft Skills' University of Madras, Chennai
9. ' Communication Skills," University of Madras, Chennai
10. Mangal .S.K. (2002) , Advanced Educational Psychology, Prentice Hall of India, New Delhi.
11. Sampath, K. et.al (1998) Introduction to educational technology, Sterling Publishers, New Delhi..
12. Keemar.K. (1997) Educational Technology, New Age International Publishers, New Delhi.
13. Chauhan S.S.(1985) Innovations in Teaching Learning Process , New Delhi : Vikas Publishing House.
14. Rajasekar . S. (2005) Computer Education and Educational Computing , Hyderabad : Neel Kamal Publications.
15. Jyohanty Jagannath (2004) , Modern Trends in Educational Technology, " Hyderabad : Neel Kamal Publications.
16. Vedanayagam E.G. (1988) Teaching Technology for College Teachers, New Delhi, Sterling Publishers.
17. Kumar K. (1997) Educational Technology, New Delhi : New Age International Publishers.

10203
DISSERTATION

Dissertation should be submitted and Viva Voce will be held after that.

The dissertation should be written in simple language. The text should be in short, clear and concise. Careless construction of sentences and incorrect grammar should be avoided. Spelling and grammar check can be done with the help of expert and computer. The dissertation material should be neatly computerized in double space, on one side in A4 size bond paper with Times New Roman, 12 font size only.

Margin

The left margin of the dissertation should be typed in 1.5 inch and the other three margins of top, bottom and right should 1 inch on all the pages.

Pagination

There is two separate series of pagination. The first is for preliminary materials which are from title page to list of appendices. For this page, number is placed in lowercase(small) Roman numbers at the centre bottom of the page.

The page number for body of the dissertation/ thesis should be in Arabic numbers placed at the top right corner of the page but for first page of each chapter there is no number. It continues for all chapters including bibliography and appendices.

Each chapter should be started on a new page.

Numbers and Symbols

In the text, the number below 10 should be spelt out in words for eg.one, nine etc, Further, the number 10 and above should be expressed in figurers et.10, 11 etc. However, sentences beginning with numbers should be always spelt out in words.

The symbol of percent that is % should be used when a number is used for eg.21% . When a number is not given, the word percentage should be used, for e.g twenty one percent.

Informed Consent Form

It is essential that the subjects, their parents and concerned institutional authorities should be informed in writing by the scholar about the nature of the study and risks involved if any during testing and training. It is a must for a study which involves collection of blood and other samples from the subjects. Further, for supplementation studies clearance from concerned ethical committee is essential.

Reference :

Footnote system is not followed for M.Phil dissertation.

As footnote is not used, in the text, the author's name and the year of publication should be given in parentheses for chapter I,III, IV & V. But only the year of publication should be given in parentheses next to author's name for chapter II. For example : Shaver (1972).

Binding :

The dissertation must be card-board bound with laminated wrapped sheet. Spiral binding will not be accepted. Wrapper colour is yellow for M.Phil.

Submission :

Number of copies of dissertation and abstract to be submitted for M.Phil is 2 to the University (Excluding Guide, College and Candidate Copies):

10204

VIVA – VOCE

Viva – Voce will be conducted after the submission of dissertation as well as after the valuation of theory papers. The internal marks for viva-Voce is maximum of 40 and for the external , it is for the maximum of 60 . Altogether for the maximum of 100 marks. Questions will be asked in the Viva – Voce examination based on the dissertation of the student.

10205

VILLAGE PLACEMENT PROGRAMME

Duration	:	Five days
Date	:	~~During II Semester~~
Mode of Evaluation	:	Internal Assessment
Maximum Marks	:	50
Subject	:	Yoga

Nature of Programme : to teach and train villagers.



TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

DEPARTMENT OF EXERCISE PHYSIOLOGY AND BIOMECHANICS

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
MELAKKOTTAIYUR POST CHENNAI - 600 127
DEPT. OF EXERCISE PHYSIOLOGY AND BIOMECHNANICS
M.Sc., SPORTS BIOMECHANICS AND KINESIOLOGY
(Three years Regular Programme)
CHOICE BASED CREDIT SYSTEM (CBCS)

B.SC. EXERCISE PHYSIOLOGY AND NUTRITION

Programme Educational Objectives (PEOs)

1. To teach the total fitness that integrates medical fitness, Nutritional Fitness, Physical, Mental and Social Fitness.

2. The effect of Exercise on various system are given due coverage.

3. The unique features in the internship programme offered to students at various hospital and fitness centers further the curriculum provides an insight into the importance of Nutrition, Nutrition standard, balanced diet and calorific value required for various levels of sportsmen.

Programme Outcomes (Po's)

PO-1) To gain knowledge on Basic anatomy and Physiology , Fundamental in Food Science , Health Education , Clinical Exercise Testing ,Introduction to Human Nutrition, Kinanthropometry , Sports Nutrition, Clinical Dietetics , Exercise for special population, Clinical Dietetics, Effect of exercise on various system, Kinesiology, Strength training and conditioning, Nutritional Ergogenic Aids and exercise performance, Weight Management , Geriatric Sports and Nutrition , Floor and Step Aerobics, Elementary Statistics, First Aid and Sports Injury and Physiotherapy, Occupational and Functional Assessment, Sports Biomechaanics, Nutrition and Immune function in Athletics, Fitness and Wellness, Stability and Core Training.

PO-2) To gain knowledge in fitness and nutrition.

PO-3) To gain practical knowledge in Floor and Step Aerobics , stability and core training, Kinanthropometry, Clinical Exercise Testing, Training and performance, Strength Training and Conditioning, WEIGHT MANAGEMENT.

MAPPING OF PEO'S WITH PO'S :

	PO 1	PO 2	PO 3
PEO 1	X	X	X
PEO 2	X	X	X
PEO 3	X	X	X

Program Specific Outcome (PSO):

The undergraduates are able to

PSO1: Prescribe, train and apply the basic knowledge of Exercise Physiology to General and Sports Population.

PSO2: Plan a basic nutritional assessments and to plan a menu for General and sports population

SEMESTER- I- PAPER CODE - UEN18CT101
BASIC ANATOMY & PHYSIOLOGY – I

UNIT-I

Cell – Definition, structure and function. Cell division- Mitosis and Meiosis. Tissues- Definition, classification and function- Epithelial tissue, Nervous tissue, Muscle tissue and Connective tissue.

UNIT-II

Blood –Definition and Functions- Composition of blood – Types and Functions of blood cell –RBC, WBC and platelets.Blood Grouping and Typing. Blood Clotting -Definition and Mechanism.

UNIT-III

Structure and Functions of Skeletal System. Bones –Types, Structure and functions. Sternum and Ribs.The curves of the vertebrae.Arches of the foot.Sex Differences in the Skeleton.Classification of Joints with examples.Movement- types and examples.Structure and movement of Hip, Knee, Shoulder and Elbow.

UNIT-IV

Structure and Functions of Upper and Lower Respiratory System. Physiology of respiration-Inspiration and Expiration.Mechanism and Control of respiration.Pulmonary Volumes- Definition of Tidal Volume, Inspiratory Reserve Volume, Expiratory Reserve Volume and Residual Volume. Pulmonary Capacities- Definition of Inspiratory capacity, Functional residual capacity, Vital capacity and Total lung capacity.

UNIT-V

Position, Structure and Function of the heart.Blood Vessel-Artery and Vein.Cardiac Cycle and Heart Sounds.Arterial Pulse and Blood pressure – Definition, Procedure to measure and its values.Types of circulation- Systemic, Pulmonary, Coronary and Portal circulation.Lymphatic system- structure and function.

REFERENCE BOOKS:

1. SurrinderH.singh, Krishna Garg, (2008), "Anatomy & Physiology for Nurses & Allied Health Sciences". CBS.
2. Clancy, John & Andrew J.McVicar (1995), "Physiology & Anatomy – A Homestatic Approach", London: Edward Arnold, A Division of holder head line PLC.
3. Larry G.Shaver (1981) "Essentials of Exercise Physiology", Surjeeth Publications, Delhi.
4. Clerk, D.H (1995) "Exercise Physiology" Prentice – Hall,Inc., Englewood Cliffs, New jersey.

COURSE OUTCOMES:

CO- 1. By learning the subject the students will be aware of the various anatomical structures present in Human body.

CO -2. The students after learning will gain knowledge about the normal functioning of various organs in Human body.

CO –3.Only after knowing about normal functioning of the human body the students will the students will be knowing about effect of exercise on various system.

MAPPING (CO's and PO's)

Programme outcomes

COURSE OUTCOME	PO 1	PO2	PO3
1	3	3	3
2	3	3	
3	3	3	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	3	
2	3	
3	3	

SEMESTER- I- PAPER CODE - UEN18CT102
FUNDAMENTALS IN FOOD SCIENCE

UNIT -I

Definition of Food- Components of food -Nutrition,Health, Nutrients- History of Nutrition -Nutrients and Their Functions-Balanced Diet- Nutritional Status-Good Nutritional Status- Relation between Good Nutrition and Health- Poor Nutritional Status- Malnutrition- Concepts of Malnutrition - Food Groups to Encourage- Physiological functions of food - Nutrition Assessment.

UNIT –II

Cooking-Objectives of Cooking- Cooking Methods:Moist Heat Methods-Boiling- Simmering- Stewing-Steaming-Pressure cooking Merits-Demerits -Dry Heat Methods- Air as medium of cooking- Fat as medium of cooking-Combination of Cooking Methods- Merits and Demerits -Solar cooking – Microwave cooking – Food safety – Food

preservation – Benefits of sprouting and fermentation.

UNIT –III

Cereal and Cereal Products: Structure, Composition- Nutritive Value of Cereals- Rice and Wheat, Ragi, Maize, and Jowar, Parboiling and Milling -Processing-Fermented Cereal Products-Breakfast cereals-Role of Cereals in Cookery-Pulses: Nutrient Content of Pulses-Germination-Factors Affecting Pulse Cookery-Role of Pulses in Cookery.

UNIT –IV

Vegetables and Fruits: Classification of Vegetables-Nutrient Content of Vegetables and Fruits-Pigments and Flavor Compounds-Need for inclusion of Fruits and Vegetables in the Days Menu-Conservation of Nutrients in Preparation and Cooking of Vegetables- Nuts and Oil Seeds: Nutritive Value of Nuts-Specific Nuts andOil Seeds-Role of Nuts in Cookery Phytonutrients and polyphenols.

UNIT –V

Milk and Milk Products: Nutritive Value of Milk-Types of Processed Milk-Physical Properties of Milk-Pasteurization of Milk-Milk Products-Role of Milk and Milk Products in Cookery – Lactose Intolerance -Flesh Foods and Egg: Nutritive Value and Selection Criteria of Meat, Poultry, Egg and Fish-Use of Egg in Cookery-Fats and Oils: Nutritional Significance-Refined Oils-Hydrogenation – Vanaspathi and Margarine-Rancidity-Smoking Point-Role of Fat / Oil in Cookery.

REFERENCE BOOKS:

1. Srilakshmi B (2013), 'Food Science' Fifth Edition, New Age International Publishers, New Delhi.
2. Manay S and Shadaksharaswamy M, (1997), 'Food Facts and Principles' New Age International Publishers, New Delhi.
3. Srilakshmi B (2015), 'Nutrition Science' Fourth Edition, New Age International Publishers, New Delhi.

COURSE OUTCOMES:

After studying this paper, the student should be able to:

- Nutrients and their primary functions

- Recognize common characteristics of well-nourished people
- Recognize symptoms of malnutrition and nutrition assessment
- Understand the scientific principles underlying food preparation.

MAPPING:

COURSE OUTCOME	PO 1	PO2	PO3
1	**3**	**3**	**3**
2	**3**	**3**	**3**
3	**3**		
4	**3**		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		1
2		1
3		1
4		1

SEMESTER I- PAPER CODE -UEN18DE103

HEALTH EDUCATION

UNIT-I

Health Education - Health Education: Meaning, Concept and Principles - Health – Importance, Components, Health Promoting Behaviours - Role of Personal Hygiene, Mental Hygiene, Sleep Hygiene, Occupational Hygiene in physical education and sports - Role of Different Agencies in Promoting Health (WHO, UNICEF, Local Bodies)

UNIT - II

Health hazards of modernization-pollution, effect of population explosion on health hazards, family and community life - Communicable and non-communicable diseases - role of host agent and environment in

the spread and control of communicable diseases - body defenses - immunity-natural and acquired - importance of regular medical check-up in preventing the diseases - immunization schedule and importance of booster doses - Morbidity and mortality in India - National Health Programmes - Primary health care, meaning and scope - Health care set-up in rural and urban areas.

UNIT - III

Importance of international health - International health measures to check spread of communicable diseases form one country to another - quarantine measures - World Health Organization-its functions and activies - UNICEF functions and activities - Significance of World Health Day.

UNIT - IV

Approved systems of medicine being practiced in India - Prescription and non-prescription drugs - habit-forming drugs - dangers of self medication and going to a quack- Health set-up at the village, town, district, state and country levels - voluntary agencies working in the field of health and health education.

UNIT - V

Awareness of HIV and AIDS - harmful effects of alcohol and tobacco - Evils associated with promiscuity - child and drug abuse - Adolescence education and sex-education – Birth Control Measures. Mental and Emotional Health: Hormones and Neurotransmitters - Common Stressors and Conditions – Bullying - Depression and Suicide - Eating Disorders.

REFERENCE BOOKS:

- Centers for Disease Control & Prevention. (2007). National Health Education Standards. Retrieved May 1, 2009,
- Coalition of National Health Education Organizations. Health Education Code of Ethics. November 8, 1999, Chicago, IL. Retrieved May 1, 2009,
- Donatelle, R. (2009). *Health: The basics*. 8th edition. San Francisco, CA: Pearson Education, Inc.
- Joint Committee on Terminology. (2001). Report of the 2000 Joint Committee on Health Education and Promotion Terminology. *American Journal of Health Education*.
- McKenzie, J., Neiger, B., Thackeray, R. (2009). *Planning, Implementing, & Evaluating Health Promotion Programs*. 5th edition. San Francisco, CA: Pearson Education, Inc.
- Simons-Morton, B. G., Greene, W. H., & Gottlieb, N. H.. (2005). *Introduction to Health Education and Health Promotion*. 2nd edition. Waveland Press.
- Nash T.N. (2006). Health and physical education. Hydereabad: Nilkamal Publishers.
- DandonPublication.Chandra, S., Sothi, &Krishnan.P. (2005). Health education and physical education. Delhi: Surject Publications. ·
- Mangal, S. K. (2005). Health and physical education. Ludhiana: Tandon Publication book market.

COURSE OUTCOMES:

By the end of this course, you will be able to describe and/or

demonstrate:

1. The various published definitions of "health."
2. The concept of optimal health in developing a personal view of health.
3. The history of national disease prevention and health promotion activities.
4. Key risk factors affecting health promotion and longevity.
5. The core foundation areas underlying health education as an applied discipline.
6. Trends potentially affecting health education in the future

COURSE OUTCOME	**PO1**	**PO2**	**PO3**
1	3		
2	3		
3	3		
4	3		
5	3		
6	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		2
2		2
3		2
4		2
5		2

SEMESTER II- PAPER CODE - UEN18CT202
INTRODUCTION TO HUMAN NUTRITION

UNIT I – CARBOHYDRATE -AN IDEAL SOURCE OF ENERGY

Definition of carbohydrate- classification: Simple Carbohydrate – Monosaccharide (glucose, Fructose, Galactose) – Disaccharides (Maltose, Lactose, Sucrose) – Complex Carbohydrate: Oligosaccharides-

Polysaccharides (Starch, Glycogen, Cellulose) - Recommended Dietary intake – Food sources - Functions of carbohydrates in the body- Dietary fibre – Definition, soluble and insoluble fibres, sources of fibre, Physiological effects of dietary fibre – prebiotic – probiotic - Role of fibre in human nutrition, sources and requirements.

UNIT II - FAT (LIPIDS)

DefinitionLipids-Fat Structure and Function- Types of Fat: Simple Lipid- Compound Lipid and Derived Lipids- Classifications of fatty acids:Saturated fatty acids– Omega 3, 6, 9 - Unsaturated fatty acids and Trans-Fatty Acid - storage of fat in the body – Dietary sources -Dietary Requirements.

UNIT III – PROTEIN-THE BASIS OF BODY STRUCTURES:

DefinitionProtein- Protein Structure and Functions – Amino acids: Essential and non-essential Amino acids – Kinds of Protein: complete protein and Incomplete Protein – Recommended protein intake - Protein Sources.

UNIT IV –VITAMINS ORGANIC MICRONUTRIENTS:

Vitamins: Fat soluble Vitamins – Vitamin A, D, E and K: Functions, requirements, sources and effects of deficiency - Water Soluble Vitamins: – Thiamine, riboflavin, niacin, ascorbic acid, folic acid,

vitamin B6 and vitamin B12: Functions, requirements, sources and effects of deficiency.

UNIT V- MINERALS- INORGANIC MICRONUTRIENTS:

Minerals: Types of Minerals: Macro Minerals- Calcium and Phosphorous: Functions, requirements, sources and effects of deficiency-Micro minerals- Iron, Iodine, Copper, Fluorine and Zinc: Functions, sources, requirements and effects of deficiency. Sodium and Potassium: Functions, sources, requirements and effects of imbalances.

REFERENCE BOOKS:

1. Janice Thompson, Melinda Manore, (2005),"Nutrition: An applied approach", Pearson.
2. Robert E. C. Wildman, Barry S. Miller, (2004), "Sports and Fitness Nutrition", Thompson.
3. Heather Hedrick fink, Lisa A. Burgoon, Alan E. Mikesy, (2006), Practical Application in sports Nutrition", Jones and Barlett.
4. McArdle William D. et.al., (2005) "Exercise Physiology, Nutrition and Human performance", Philadelphia, lea and Febiger.
5. Mcardle , William D., Katch, Frank I and Katch, Victor L (2005) "Exercise Physiology", Philadelphia, lea and Febiger.
6. Srilakshmi B (2015), 'Nutrition Science' Fourth Edition, New Age International Publishers, New Delhi

COURSE OUTCOMES:

After studying this paper, the student should be able to:

1.Macronutrients and their primary functions

2.Gain basic knowledge of the different nutrients and their role in maintaining health of the community

3.Micronutrients and their primary functions.

MAPPING:

COURSE OUTCOME	**PO 1**	**PO 2**	**PO 3**
1	3	3	
2	3	3	
3	3	3	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		1
2		1
3		1

SEMESTER- II- PAPER CODE - UEN18CT203

CLINICAL EXERCISE TESTING PROCEDURES

UNIT -1.Assessment of cardio respiratory variables – YMCA cycle ergometer- treadmill stress monitor - VO2 max test - PO2 -PCO2- lactate threshold- measuring methods of TMR and RMR

UNIT II

Biochemical testing procedure - liver profile test - lipid profile test-

measuring pulse rate - blood pressure – testing procedure - sodium - potassium- magnesium - protein- iron and anemia testing procedure

UNIT III

Doping and its types - testing procedure - stimulants - anabolic steroids- hormones and other related substances - estrogen- progesterone- testosterone

UNIT IV

Lung function test - oxygen dissociation curve - assessment of resting lung function - during exercise - assessment of neural transmission - heart rate monitor - Hydration measurement.

UNIT V

Assessment of nutritional status - 3 day food record - 7 day food record - 24 hours recall- food frequency - diet history - role of nutrition software to assess capacity of athlete.

References

1. Ferrer M, Alonso A, Morera J, et al. Chronic obstructive pulmonary diseases stage and health related quality of life. The quality of life of chronic obstructive pulmonary disease study group. Ann Intern

Med 1997; 127: 1072–1079.

2. Jones PW. Health status measurement in chronic obstructive pulmonary disease. Thorax 2001; 56: 880–887.
3. ATS statement: guidelines for the six-minute walk test. Am J RespirCrit Care Med 2002; 166: 111– 117.
4. Kessler R, Faller M, Fourgaut G, Mennecier B, Weitzenblum E. Predictive factors of hospitalization for acute exacerbation in a series of 64 patients with chronic obstructive pulmonary disease. Am J RespirCrit Care Med 1999; 159: 158–164.

CORSE OUTCOME:

On completion of this instruction

1.students will be able to accurately screen, assess.

2. Students should be able to utilize laboratory testing that measures heart rate, blood irredeemable uptake, body co position and flexibility

MAPPING:

Course outcome	Po1	Po2	Po3
1	**3**		**3**
2	**3**		**3**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	

SEMESTER III- PAPER CODE -UEN18CT301

KINANTHROPOMETRY

UNIT I:

Meaning and Definition of Anthropometry- Kinanthropometry- History and development of Anthropometry and Kinanthropometry - Anthropometrical assessment Identify and markall anatomical sites for measurement Landmarks - Vertex : Acromiale – Subscapulare – Radiale- Mid-acromiale –radiale –Stylion –Mesosternale –Iliocristale –Iliospinale- Supraspinale –Trochanterion- Mid thigh- Tibialelaterale–Tibialemediale- Sphyrion- Mid-calf

UNIT II:

Meaning and Definition of Somatotype- History and development of Body Types- the Heath-Carter Somatotype Method: Endomorphy – Mesomorphy- Ectomorphy - Classification of Somatotype.

UNIT III:

Meaning and Definition of Body composition- The composition of The Human Body: atomic level- molecular level : Assessment of body composition – Matiegka method (MAT) to estimate body composition - Assessment of Fat mass- Assessment of Fat free mass- Assessment of Lean body mass- Assessment of Body mass (Weight) - Assessment of Stature (Height) – Ideal Body Weight-Fat-Free Mass Index (FFMI) and Fat Mass Index (FMI) - Assessment of Waist-to-hip ratio - cellular level- Tissues, Organs and systems level- whole body level.

UNIT IV:

Body composition Chemical Model-Assessment of Underwater weighing -Assessment of Dual-energy X-ray absorptiometry (DEXA) - Assessment of Bioelectrical Impedance Analysis- Assessment of Near infrared reactance (NIR) - Assessment of Skinfold measurements: Cheek-Chin-chest-Axilla-Triceps-Biceps-Subscapular-Iliac crest – Supraspinale-Abdominal-Front thigh-Medial calf.

UNIT V:

Segment lengths and Girths: Lengths- Arm length-Forearm length-Hand length-Tibial length – Iliospinale-base height-Trochanterion-base height-Thigh length-Tibialelaterale - base height- Girths:Arm girth relaxed-Arm girth flexed and tensed-Forearm girth-Wrist girth-Chest girth-Waist girth-Gluteal girth-Thigh girth-Calf girth-Ankle girth.

REFERENCE BOOKS:

1. Eston R., Reilly T. (2009), Kinanthropometry and exercise physiology laboratory manual, Vol.1 3ed.,Routledge.
2. Frank Spencer, (1997),History of Physical Anthropology, An Encyclopedia Volume 1Garland Publishing, Inc, New York & London.
3. Mike Marfell-Jones,Kinanthropometric Assessments, Private Bag 11022, PalmerstonNorth,New Zealand.

4. Victor L. Katch, William D. McArdle, Frank I. Katch,(2011),Essentials of exercise physiology,Lippincott Williams & Wilkins, a Wolters Kluwer business,Philadelphia.
5. Scott J. Power and Edward Howley, (2009), Exercise Physiology Theory and Application to Fitness and Performance,McGraw-Hill Higher Education, Boston Burr Ridge, IL Dubuque, IA New York.

COURSE OUTCOME

After studying this paper, the student should be able to:

1. Accurately use anatomical and physiological terminology.
2. Competently use and understand the principles pretentiousness procedures for assessing human body composition.

MAPPING:

CORSE OUTCOME	PO1	PO2	PO3
1	3		3
2	3		3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	

SEMESTER III- PAPER CODE -UEN18CT302

FUNDAMENTALS OF SPORTS NUTRITION

UNIT I

Science of sports nutrition : Definition of sports nutrition- Need and Importance of sports nutrition- Balanced Diet-Planning Balanced Diets-Recommended Dietary Allowances (RDAs) - Dietary Reference Intakes (DRIs) – Estimated Average Requirement (EAR), Adequate Intake

(AI)-Dietary Guidelines- Reference Man and Reference women- Dietary Guidelines -Food guide pyramid-MyPlate- Food Labels.

UNIT II

Energy Yielding Nutrition **:**Carbohydrates utilized during exercise-Carbohydrates consumed before exercise-Carbohydrates consumed during exercise-Carbohydrates consumed after exercise- Fats consumed before exercise-Fats consumed during exercise-Fats consumed after exercise-Protein consumed before exercise-Protein consumed during exercise-Protein consumed after exercise- Carbohydrates loading.

UNIT III

Energy Metabolism : Definition of Energy Metabolism -Energy – Anabolic process and Catabolic process- Basal Metabolic Rate (BMR) -Resting Metabolic Rate (RMR)-Factors affecting Basal Metabolic Rate (BMR) -Energy Cost of Physical Activities-Thermic Effect of Food-Estimation of Total Energy Needs-Calculating Total Energy Requirements- Energy balance- Human body's source of chemical energy: ATP-CP System- Lactic Acid system- Aerobic system.

UNIT IV

Energy Needs For Athletes :Energy needs different for team sport athletes- Daily energy needs calculation for team sport athletes-Carbohydrate needs for team sport athletes-Protein needs for team sport athletes- Fat needs for team sport athletes-Vitamin and Mineral needs for team sport athletes-Fluid recommendations for team sport athletes-Foods recommended for athletes while traveling.

UNIT V

Choosing A Performance DietWeight Management- Regulation of body weight and composition: Genetic influences-Hormonal influences-Positive energy balance-Negative energy balance-Weight loss methods for athletes-Athletes Gain Weight Healthfully- Vegetarian Diets-Vegetarian Diets and Vegetarian

Diets and Athletic Performance-Other

Special Eating Plans: Paleo Diet-Raw Food Diet-Detox Diet-Other Diets – LCHF (Low Carbohydrate and High Fat diet).

REFERENCE BOOKS:

1. Natalie DigateMuth,(2015), Sports Nutrition for Health Professionals, F. A. Davis Company, 1915 Arch Street, Philadelphia,USA.
2. Heather Hedrick fink, Lisa A. Burgoon, Alan E. Mikesy, (2006), Practical Application in sports Nutrition", Jones and Barlett.
3. Robert E.C.Wildman, Barry S. Miller, (2004), "Sports and Fitness Nutrition", Thomson.
4. Deakin , Burke(2006), 3rd, Clinical Sports Nutrition, McGraw- Hill Austria.
5. Bean, Anitha (2006), 5thed, Sports Nutrition.
6. Bourns, Fred (ed), Essentials of Sports Nutrition, 2nd Ed (2002), John and Wiley.
7. Benardot, Don (2000), Advanced Sports Nutrition, Human Kinetics.
8. Burke, Louise (2007), Practical Sports Nutrition, Human Kinetics.
9. Gleeson, Jeukendrup (2004), Sports Nutrition: an introduction to energy production and performance, Human Kinetics.

COURSE OUTCOMES:

1. Provide individual advice and guidance in the area of sports nutrition.
2. Design and run a group consultation for athletes about sports nutrition.
3. Develop knowledge on sports nutrition.

MAPPING:

COURSE OUTCOME	PO1	PO2	PO3

1	3	3	
2	3	3	
3	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		1
2		1
3		1

SEMESTER III - PAPER CODE -UEN18CT303

TRAINING & PERFORMANCE

UNIT - I

Definition of training, performance, aerobic training, aerobic system , volume, Intensity. Training principles – over load , specificity , reversibility – influence of Gender, Initial fitness level and Genetics – components of work session – Training to improve aerobic power - Interval training – long slow distance – High Intensity Continuous exercise - Training intensity and improvement in VO2 max.

UNIT - II

Definition of Anaerobic training and anaerobic system.Training for improved anaerobic power and capacity - ATP – Pc System – Glycolytic System – muscle adaptation – adaptation in a Lactic Threshold.

UNIT - III

Definition of strength, muscular fitness, resistance training – classification of strength training – Isometric – Isotonic – Isokinetic – factors involved in muscular adaptation – principles of resistance training- physiological effects of strength training – neural and muscular adaptation to resistance training.

UNIT - IV

Definition of Overtraining – Symptoms of overtraining – effect of overtraining – overtraining syndrome – predicting the overtraining syndrome – treating the overtraining syndrome – tapering for peak performance.

UNIT - V

Definition of Retraining , muscular strength, power, muscular endurance, speed, agility, flexibility and cardio respiratory endurance – effect of retraining on muscular strength, muscular endurance, speed, agility, flexibility and cardio respiratory endurance.

REFERENCE BOOKS:

1. Scott K. Powers Edward T. Howley (2004) " Exercise Physiology- Theory and application to fitness and performance",- Brown and Benchmark.
2. Diek, Frank W. (1978) "Sports training principles ", London :Lepus books.
3. E.L.Fox(1979) "Sports Physiology halt: CBS College publishing.
4. Nieman , David C"The Exercise Health Connection" champaign L: Human kinetics.

5. Jack. H Wilmore and David L. Costill (2004) " Physiology of Sports and Exercise", Human kinetics.

COURSE OUTCOMES:

1. To work with higher efficiency as Exercise Physiologist or Exercise Trainers.
2. To constructively apply the acquired scientific findings and methodological repertoire in practical training under various conditions.
3. To recognize the tendencies of development in their sport and consider them in their training process.

MAPPING:

COURSE OUTCOME	PO1	PO2	PO3
1	**3**		**3**
2	**3**		**3**
3	**3**		**3**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	
3	1	

SEMESTER IV- PAPER CODE -UEN18CT401

EXERCISE FOR SPECIAL POPULATION.

UNIT – I

Children and adolescences – Body composition – Understanding the Basic Training Principles - FITT Guidelines: Frequency-Intensity-Time-Type Aerobic training- Maximum Heart Rate Method- Benefits of Aerobic Fitness - Strength training-Estimating 1RM-Benefits of Resistance Training - Definitions of Flexibility-Types of Stretching- Benefits of Flexibility – Exercise guidelines.

UNIT-II

Meaning and Definition of Exercise and ageing- Theories of ageing: Biological theories-Psychological theories-Sociological theories- Impact of Ageing on Major Physiological Systems and Performance:Cardiovascular and respiratory systems-Musculoskeletal system-Nervous system-Endocrine system -Exercise guidelines for older people.

UNIT-III

Meaning and Definition of Arthritis- Types of Arthritis:osteoarthritis and rheumatoid arthritis- Epidemiology-Pathophysiology-Exercise for Osteoarthritis and Rheumatoid Arthritis: Aerobic activity-Flexibility exercise-Proprioceptive exercise-Strength training for osteoarthritis and rheumatoid arthritis.

UNIT – IV

Meaning and Definition of Osteoporosis and Osteopenia- Risk factors for osteoporosis and osteopenia-Assessment of osteoporosis-Physical Activity and Bone Health:Exerciseguidelines -Jumping-Walking-Resistance training- Asthma-Diagnosis and Causes- Prevention of Asthma- Exercise-Induced Asthma.

UNIT – V

Relative Energy Diet (RED-S) - Physiology of the Exercising Female: Definition of menstrual cycles-Regulation of Menstrual Cycle – Menstrual disorders for female athletes.The menopause-Cause for Menopause-Physical activity guidelines for the postmenopausal female- Pregnancy-

Changes in Physiological Systems-Physical activity guidelines for the pregnant female-Special Considerations.

REFERENCE BOOKS:

1. John P. Buckley, (2008), Exercise Physiology in Special Populations, Advances in Sport and Exercise Science, Churchill Livingstone/Elsevier.
2. Sembulingam. K and PremaSembulingam, (2012), Essentials of Medical Physiology,Jaypee Brothers Medical Publishers (P) Ltd, Ansari Road, Daryaganj, New Delhi.
3. Longenbaker, Susannah Nelson,(2017), Mader's Understanding, Human Anatomy & Physiology, McGraw-Hill Education, 2 Penn Plaza, New York.
4. Scott J. Power and Edward Howley, (2009), Exercise Physiology Theory and Application to Fitness and Performance,McGraw-Hill Higher Education, Boston Burr Ridge, IL Dubuque, IA New York.

COURSE OUTCOMES:

1. Students will be able to define terminology related to exercise for special populations.

2. Will be able to explain general principles of exercise prescription for special populations.

3. Able to identify the important differences between children and adult.

COURSE OUTCOMES	PO1	PO2	PO3
1	3		
2	3		
3	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	
3	1	

SEMESTER IV- PAPER CODE -UEN18CT303

CLINICAL DIETETICS

UNIT - I

Definition of Dietetics, clinical dietetics - Food borne infections – definition- causes – symptoms – characteristics – control measures – types of diets for food borne infections – functions of the Liver - causes of liver damage – Alcoholic liver disease –NAFLD (Non Alcoholic Fatty Liver Disease) diets for liver disease

UNIT - II

Functions of the Kidney – causes of acute renal failure – dietary intervention for chronic renal failure – Hemodialysis – Continuous Ambulatory Peritoneal dialysis (CAPD)- protein restricted diet.

UNIT - III

Definition of Obesity, Hypertension , Hypercholesterolemia– risk factors for obesity - Insulin Resistance (IR) – PCOD: Hypertension ,

Hypercholesterolemia – BMI – Measurement of Body fat Percent – Guideline for weight gain – Definition of diabetes – Types - symptoms – dietary guidelines – types of fat – Hyperlipidemia – dietary allowance

UNIT – IV Definition, causes , symptoms and treatment of Anorexia Nervosa - Dumping Syndrome – Early Dumping – Dietary advice – Late dumping

– dietary advice – Irritable Bowel Syndrome – FODMAPs Diet – Symptoms – Dietary treatment – Diarrhea - meaning – definition – symptoms – food to avoid – Mal Absorption Syndrome – causes and symptoms –Coeliac Disease – foods allowed - Cancer – causes – symptoms – Dietary intervention.

UNIT - V

Assessment of Nutritional Status for patient admitted in Hospital – Aim of Nutritional Assessment – Methods of Assessment of Nutritional Status – weight – dietary history – anthropometric measures –

Dynamometry(grip strength)- Biochemical measures – special feeding method – Enteral feeding – Home enteral feeding - Parenteral nuritio – method – administration of parenteral solution.

REFERENCE BOOKS:

1. Janice Thompson, Melinda Manore, (2005), “Nutrition : an applied approach”, pearson.
2. Heather Hedrick fink ,lisa A. Mikesky, (2006), practical application in sports nutrition.
3. Robert E.C.Wildman , Barry S. Miller, (2004), “Sports and Fitness Nutrition”, Thompson.
4. McArdle William D.Et.al., (2005) , “Exercise Physiology, Nutrition and Human Performance, Philadelphia lea and febiger.

COURSE OUTCOMES:

1. Prepare graduates to promote health of medically complex clients through clinical residencies and special projects in clinical nutrition.

2. Prepare Graduates to collaborate with other members of the health care team, industry and academia as the nutrition experts.

MAPPING:

COURSE OUTCOME	**PO1**	**PO2**	**PO3**
1	3		
2	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		1
2		1

SEMESTER IV- PAPER CODE -UEN18CT403
EFFECT OF EXERCISE ON VARIOUS SYSTEMS

UNIT -I

Cardiovascular System – Structure and functions of heart- Definitions of Cardiovacular parameters - stroke volume – cardiac output- blood pressure – coronary circulation - cardiac muscle – Arterial - Venous Oxygen Difference (a-v O_2 diff) -Heartrate - blood flow— Availability of nutrients –acute and chronic effect of training on cardiovascular system.

UNIT -II

Respiratory system – structure and functions of lungs – Definition of respiration, inspiration, expiration, diffusion – Ventilation-Perfusion Ratio - factors for exchange of gases –Tidal volume - Vital capacity - Respiratory muscles – homeostasis – PH – oxygen Debt – Oxygen Deficit - acute and chronic effect of training on Respiratory system.

UNIT -III

Muscular system – types of muscle – types of muscle fibre –

Definition of – Hyperplasia -Hypertrophy - muscle tone - MET – Posture - Bodycoordination –muscle spindle – Golgi tendon - acute and chronic effect of training on Muscular system.

UNIT -IV

Nervous System – Structure and functions of Neuron – sympathetic and parasympathetic nervous system – motor unit – screening and facilitation process – Decision making process – pain tolerance - acute and chronic effect of training on Nervous System.

UNIT -V

Structure, function and definition of Pituitary, thyroid, parathyroid, adrenal, pancreas and gonadal hormones –Exercise and hormones.

REFERENCE BOOKS:

1. William D. Mcardle, Frank I. Katch, Victor L. Katch, (2005), "Essentials of exercise physiology ", Lippincott Williams and Wilkins.
2. Victor L. Katch, Frank. I. K atch, William D. Mcardle, (2003), "Essentials of exercise physiology ",Williams and Wilkins.
3. Lorry G. Shaver(1981) "Essentials of exercise physiology" Delhi: SurjeethPuplications.
4. William E.Garrett J.R., Donald T. Kirendall, (2000), Exercise and sports science", Lippincott Williams and Wilkins.
5. McArdle William D. (1998)) "Essentials of exercise physiology" Malveern, Pennsylvania: Lea and Febiger.
6. Roger M. Enoka, (2002), " Neuromechanics of human movement", Human Kinetics.
7. Fox, Edward L. and Mathews Donald K. (1981), The Physiological basis for Exercise and Sports", Kerper Boulevard, Dubuue: Wm. C. Brown Communications, Inc.
8. Amrit Kumar R. Moses(1995), "Introduction to Exercise Physiology", poompugarpathipagam.

COURSE OUTCOMES:

1. It explains the various physiological factors affecting sports performance.
2. Make recommendations for enhancing the training effect after analyzing sports training plan.

MAPPING:

COURSE OUTCOME	**PO 1**	**PO 2**	**PO 3**
1	**3**		
2	**3**		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	

SEMESTER- I- PAPER CODE -UEN18DE501

KINESIOLOGY

UNIT I

Kinesiology: Meaning and Definition of kinesiology– Need and importance of kinesiology - Terminology of types of Joints movements: Flexion, extension, abduction, adduction, rotation, and circumduction. Planes: Sagittal plane, Frontal plane, transverse plane. Axis: Sagittal

axis, Lateral axis, vertical axis - Movements at Specific Joints-Shoulder and Shoulder Girdle - Elbow and Forearm-Wrist and Hand-Trunk and Spine-Hip -Knee-Ankle Movement.

UNIT II

Composition and Structure of bone tissue – Types of bones-Bone growth and development – Axial and Appendicular skeleton-Functions of skeletal system- Joints– Classification of Joints-immovable joints-Slightly movable joints-Freely movable joints- Uniaxial, Biaxial and Polyaxial Joints.

UNIT III

Muscles: Structural Classification – Functions – Types of Muscle Fibres – Functional Classification - Location, origin, insertion and action of the following muscles: Upper Limb :Biceps, Triceps, Pectoralis major, Deltoid, Trapezius, Brachialis – Lower Limb - Gastrocnemius, Soleus, Hamstrings, Quadriceps Femoris, Gluteus Muscle Group – Trunk : Muscles of the Abdomen, Erector Spinae.

UNIT IV

Posture:Types - Criteria for good posture – Postural deformities: Kyphosis, Lordosis, Scoliosis, Knock- knee, Bow leg, Flat foot. Analysis of

Posture - Causes, diagnosis and corrective exercises for these postural deformities.

UNIT V

Introduction of fundamental Motor Skills: Walking, Running, Throwing, Catching, Pushing, Jumping.

Reference Books:

1. Bruce Abernethy. (2005). The Biophysical Foundation of Human Movement. Human Kinetics
2. Nancy Hamilton. (2002). Kinesiology - Scientific Basis of Human Motion. New York : McGraw - Hill Companies,Inc.
3. NichdasStergiou. (2004). Innovative Analysis of Human Movement. USA: Human Kinetics.
4. Shirl, J, Hoffman. (2005). Introduction to Kinesiology. USA: Human Kinetics.
5. Thomas. (2001). Manual of Structural Kinesiology. New York: Me Graw - Hill cornparues.
6. Uppal A. (2004). Kinesiology in Physical Education and Exercise Science. Delhi: Friends publications.

COURSE OUTCOMES:

After completing the Kinesiology major a student will be able to:

1. List and describe five career options available in the field of kinesiology.
2. Describe and critically analyze the role of physical activity and its impact on health, society and quality of life.
3. Identify critical elements of motor skill performance, combine motor skills into appropriate sequences for the purpose of improving skill learning, and demonstrate competent motor skill performance in a variety of physical activities.

4. Utilize measurement concepts (qualitative and quantitative) to assess student/client performance and program effectiveness.
5. Describe and demonstrate effective verbal and nonverbal communication skill.

MAPPING:

COURSE OUTCOME	**PO 1**	**PO 2**	**PO 3**
1	**3**		
2	**3**		
3	**3**		
4	**3**		
5	**3**		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	
3	1	
4	1	
5	1	

SEMESTER V- PAPER CODE -UEN18DE502

STRENGTH TRAINING AND CONDITIONING

UNIT - I

Meaning and Definition of Strength training and conditioning-Benefits of resistance training-Principles of Resistance Training: Progressive overload- Specificity- Variation-Individualization and Detraining-Resistance Training Program Design: Exercise Selection-Exercise order and Workout Structure-Intensity-Training Volume-Rest Intervals-Repetition Velocity-Frequency.

UNIT - II

Competitive forms of Resistance Training- Resistance Training Modalities: Body Weight-Manual or Partner Resistance-Free Weights:

Advantages-Disadvantages -Machines: Advantages-Disadvantages -Free Weights versus Machines-Medicine Balls, Stability Balls, Bosu Balls, and Other Balance Devices-Elastic Bands, Tubing, Chains, and springs.

UNIT - III

The SAID Principle: Mechanical specificity-Neuromuscular specificity-Metabolic specificity-Progressive Adaptations from Resistance Training: Stabilization-Muscular endurance-Muscular hypertrophy-Strength-Power-Resistance Training Systems: The Single-Set System-The Multiple-Set System-The Pyramid System-The Superset System-Drop-Sets-The Circuit-Training System-The Peripheral Heart Action System-The Split-Routine System-Vertical Loading and Horizontal Loading

UNIT - IV

Stages of training -Stage I- Stage II- Stage III-Circuit Training-Continuous training-Fartlek training-Interval training.

UNIT - V

Cardiorespiratory Fitness: Benefits of Cardiorespiratory Fitness-Cardiorespiratory Fitness Training: Warm-Up Phase-Conditioning phase-Cool-down phase-General Guidelines for Cardiorespiratory Training: Frequency-Intensity-Time-Type-Methods for Prescribing Exercise Intensity.

REFERENCE BOOKS:

1. Micheal A. Clark, Scott C. Lucett, and Brian G. Sutton,(2012), NASM Essentials of Personal Fitness Training, Fourth Edition, Lippincott Williams & Wilkins, a Wolters Kluwer business, Two Commerce Square, 2001Market Street, Philadelphia, PA 19103 USA.
2. Nicholas Ratamess, (2012), ACSM's Foundations of Strength Training and Conditioning, Lippincott Williams & Wilkins.
3. Thomas R. Baechle, and Roger W. Earl, (2008), Essentials of Strength Training and Conditioning, Human Kinetics, P.O. Box 5076, Champaign, USA.

COURSE OUTCOMES:

1. To Interpret and apply scientific knowledge and literature relating to

strength training.

2. Understand the importance of organizations adminstration and leadership and their importance in the development of a safe and effective training programs.

MAPPING:

COURSE OUTCOME	**PO1**	**PO2**	**PO3**
1	**3**		**3**
2	**3**		**3**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	

SEMESTER V- PAPER CODE -UEN18DE503

NUTRITIONAL ERGOGENIC AIDS AND EXERCISE PERFORMANCE

UNIT - I

Definition of ergogenic aids – Definition of dietary supplements – BMI – Antioxidants – self management education – Phytochemical rich foods – Anthocyanidins – ascorbic acid – Beta carotene – ellagic acid – Flavonols – Flavanones – Flavones – Isoflavons – Lutein – Lycopene – Organosulfur compounds .

UNIT - II

WADA-IOC- Doping agency – Doping in sports – Blood Doping in sports – Effects of Blood Doping – Erythropoietin – Effect of Exogenous administration of erythropoietin – Banned supplements in sports and Androstenedione – Dehydroepiandrosterone (DHEEA) – 19 –

nonandrostenedione and 19 norandrostenediol – Ephedrine.

UNIT -III

Dietary Supplements that may perform as claimed – Beta-hydroxymethylbutyrate – Ribose – Carnitine – Chromium picolinate.

UNIT - IV

Pharmacological acids – Amphetamines – Anabolic steroids – Beta-hydroxymethybutyrate – creatine – caffeine – carnitine – chromium piclinate – Dehydroepiandrosterone (DHEA) – Human growth hormone (HGH).

UNIT- V

Harmful and Illegal Pharmacological Ergogenic aids – Anabolic and other steroids – Ephedrine – Blood Doping –Definition of Nutritional aids – caffeine – creatine – sodium bicarbonate.

REFERENCES:

1. Bell., D., Jacobs, I., and Zameenik J. (1998), effects of caffine, ephedrine and their combination on time to exhaustion during high intensity exercise. Europeon Journal of Applied Physiology, 427-433..
2. Website http / www. Webmd.com/ fitness-exercise/human-growth-hormone hgh.
3. Jerry E. Graham and Lawrence L. Sprite (1996), Caffeine and Exercise performance. Gastorade Sports science Institute,9(i) Retrieved from http./www.gssiweb.org/Articles /Sse-60-caffeine and exercise performance.
4. Pharmochological ergogenic aids(n.d.) Retrieved Nov.30,2015 from http/www.getfit.net/body/ physiology/ ergogenic/ pharmachological.htm.
5. Whitney.E. and Rolfes, S. 2013. Supplements as Ergogenic aids, understanding nutrition (14thed), Belmont, CA; Thomson/ Wadsworth.

COURSE OUTCOMES:

1. Gain in depth knowledge on one nutritional ergogenic aids.
2. To evaluate an athlete's diet and make valuable nutritional

recommendations that will impact his/ her sports performance.

MAPPING:

COURSE OUTCOME	PO1	PO2	PO3
1	3		
2	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	3	3
2	3	3

SEMESTER V- PAPER CODE -UEN18DE504

WEIGHT MANAGEMENT

Unit - I

Metabolism and Weight loss : Factors that Influence Metabolism - Basal Metabolic Rate and Methods For Measuring BMR - How Metabolism Affects Weight - How to Increase the Metabolism - Relationship between Metabolism and Caloric Intake

UNIT - II

Nutrients: Ingestion to Energy Metabolism: Carbohydrates, Protein, Fat – Meaning, Classification and its Functions. Role of Carbohydrates, Fat and Protein during Exercise. Vitamins, Minerals, Water: Meaning, Classification and its Function. Role of Hydration during Exercise, Water Balance.

UNIT - III

Weight Management: Meaning, Concept of Weight Management in the

Modern Era – Factors affecting Weight Management and Values of Weight Management - Maintaining a Healthy Life Style - Barriers to Lifestyle Changes - Body Mass Index (BMI)

UNIT - IV

Planning of Weight Management: Determination of Desirable Body Weight – Daily Caloric Intake and Expenditure – Balanced Diet for Indian School Children – Weight Management Programme for Sporty Children – Role of Diet and Exercise in Weight Management – Diet Plan and Exercise Schedule for Weight Gain and Loss.

UNIT - V

Obesity: Meaning – Definition – Types – Causes and Solution for overcoming Obesity. Myths of Spot Reduction and Weight Loss – Dieting and Exercise for Weight Control - Weight Management for Special Populations - Pregnant and Postpartum Women - Weight Management for Seniors - Weight Management for Persons with Disabilities

REFERENCES:

1. Wadden TA, Stunkard AJ (Eds.). Handbook of obesity treatment. New York: The Guilford Press, 2004.
2. Fairburn CG, Brownell KD (Eds.). Eating disorders and obesity: A comprehensive handbook (2nd ed.). New York: The Guilford Press, 2002.
3. Hill JO. Understanding and addressing the epidemic of obesity: An energy balance perspective. Endocrine Reviews 2006;27(7):750-761.
4. Wardlaw, Smith. Contemporary Nutrition: A Functional Approach. 2nd ed: 2012. McGraw Hill. 7. Williams, Melvin. Nutrition for health, fitness and sports. 2004. McGraw Hill
5. Joshi, A.S. Nutrition and Dietetics. 2010. Tata McGraw Hill.

COURSE OUTCOME:

- 1.Gain an understanding of the basic elements of nutrition with a focus on the key nutrients in order to avoid deficiencies when working with weight loss clients
- 2.Develop the confidence to be able to make informed choices from a wide span of weight loss options and avoid the use of rigidly fixed methods, thereby delivering programmes best suited to individual needs
- 3.Learn the skills to be able to counsel on a one-to-one basis. We believe that this favours the resolution of individual circumstances and problems

Receive the training to see your clients through every stage of the process, thereby maximizing their chances of success.

MAPPING:

COURSE WORK	**PO 1**	**PO 2**	**PO 3**
1	**3**		**3**
2	**3**		**3**
3	**3**		**3**

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	
3	1	

SEMESTER V- PAPER CODE -UEN18DE505

FITNESS AND NUTRITIONFOR GERIATRIC

UNIT - I

Definition of Geriatric –physical changes with aging – physical health – How to make aging well a reality – general characteristics of aging process – theories of aging – how aging affects fitness.

UNIT - II

Physiological changes in aging – muscle tissue – muscle strength – power – balance – cardiorespiratory fitness – aging and cardiorespiratory system.

UNIT - III

Aging and Nervous system – Aging and respiratory system – aging and gastrointestinal system – aging and urinary system – aging and endocrine system.

UNIT - IV

Different exercise – strength training – endurance exercise – stretching/ flexibility exercise to develop physical fitness and for sports.

UNIT - V

Nutritional risk for older adults – Screening for nutritional status – geriatric nutritional requirements – calorie need – nutrient needs – nutritional need for older athletes – Macro and micronutrients.

REFERENCE:

1. Kathleen.c. Niedert, Nutrition care of the older adult, A handbook for nutrition throughout the continuum of care; third exition.
2. RonniChernoff , Geriatric Nutrition : The health professionals hand book; 4th edition.

COURSE OUTCOMES:

1. Provide individual advice and guidance in the area of Geriatric sports.
2. Provideindividual advice and guidance in the area of Geriatric nutrition.

Design and run a group consultation for Master athletes about geriatric sports and nutrition.

MAPPING:

COURSE OUTCOME	**PO 1**	**PO 2**	**PO 3**
1	**3**		
2	**3**		

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

(CO)		
1	2	2
2	2	2

V SEMESTER - PAPER CODE -

UEN18DE506 FLOOR AND STEP AEROBICS

UNIT - I

Aerobics - Benefits of Aerobics – Wellness –Music – Music understanding- music tempo variation – cueing – Use of floor, mirror – shoes – stepper –various height

UNIT - II

Warm Up – cardio workout - Low Intensity – high intensity - Cool Down – Flexibility – Posture – Duration – Heart rate – use of boarg scale (10 points) - Peak Maximal Heart Rate (MHR) Method-Ratings of Perceived Exertion Method-Talk Test Method.

UNIT - III

Rhythmic Aerobics: Variations and Styles – floor aerobics – Marching – Step touch – L- step – V- step – Diamond – Knee lift – Touch out – Grape vine –Turn step – chacha – A – step – arm variation - Combination of various steps

UNIT - IV

Step Aerobics – Marching – up and down - L- step – V- step – Straddle – Cross over – Turn step – Knee lift – Hop – Jump – Run Run – Arm Variation – Combination of various steps

UNIT - V

Major muscle groups strengthening –circuit training and interval training - Body Toning through Resistance; Weights, Bands and Resistance;

REFERENCE BOOKS:

1. Mazzeo, K.S.(2001). Fitness through aerobics and step training. Brooks/cole publishing Company
2. Kennedy – Ambrushter, C.,& Yoke, M.(2014). Methods of group exercise instruction. Human Kinetics
3. Cooper Kenneth H.2013, Aerobic program for total well being: Exercise Diet and Emotional Balance. Bantam.

COURSE OUTCOME:

1. Demonstrate the ability to perform aerobic movements in various combination and forms.
2. Understand and apply the knowledge of basic choreography, music selection and effective group management.
3. Identify the major muscle groups and their application to aerobics.

MAPPING:

COURSE OUTCOME	**PO 1**	**PO 2**	**PO 3**
1	**3**		**3**
2	**3**		**3**
3	**3**		**3**

MAPPING (CO's and PSO's)

Course	Program Specific

Outcomes (CO)	Outcomes (PSO)	
1	1	
2	1	
3	1	

SKILL ENHANCEMENT COURSE (SEC)

SEMESTER V- PAPER CODE -UEN18SE501

ELEMENTARY STATISTICS IN EXERCISE PHYSIOLOGY & NUTRITION

Unit 1- Meaning and definition of Statistics , Raw Score , Attribute, Variable – Type of Variable , Data – Type of Data , Population , sample, Parameter , Statistic , Frequency distribution , Construction of frequency distribution.

Unit 2 – Measures of Central tendency

Meaning, Types of Central tendency – Mean, Median, Mode – Calculation, Merits and Demerits of Central tendency.

Unit 3 – Measures of Variability

Meaning, Types of Variability – Range, Mean deviation, Quartile deviation and Standard deviation – Calculation.Merits and demerits of Variability.

Unit 4 – Graphs

Graphical representation in Statistics Line diagram, Bar diagram, Histogram, Frequency curve, Frequency Polygon, Ogive curve, Pie diagram. Advantages of graphs.

Unit 5 – Applications of Statistics

Meaning of Correlation , Pearson product moment correlation , Rank order correlation , Chi – square test , Independent of attribute , Equal Occurance test , Additive Properties Test of significance – Hypothesis , Types of Error , Acceptance region , Rejection region , Level of Significance , 't' test – Independent and Dependent 't' test.

REFERNCES

1. Blum, J.R., and Fattu, N.A. 1954. Nonparametric methods.Rev.Educ.Res., 24, 467-487.
2. Conover, W.J. Practical Nonparametric statistics, 2nd edition. New York; John wiley& sons, 1980.
3. Gibbons,J.D., and Chakraborti. S., Nonparametric Statistical Inference, 3d ed., New York, Marcel Dekker. 1992.
4. Kraft, Charles H. and Van Eeden. Constance A Nonparametric Introduction to Statistics. New York: Macmillian, 1968.
5. Owen, D.B. Handbook of Statiscal Tables. Reading, Mass; Addison-Wesley, 1962.
6. Siegel, Sidney. Nonparametric statistics for the behavioral Sciences. New York : McGraw-Hill, 1956.
7. VarmaJ.Prakash ; Sports Statistics Copyright 2000 by Venus Publication.

COURSE OBJECTIVES

After completing this subject we will be able to understand about

1. the basic concepts of Statistics
2. need of Statistics
3. how to analysis the problem using statistics tools

MAPPING:

CORSE	PO1	PO2	PO3

OUTCOME			
1	3		
2	3		
3	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	2	2
2	2	2
3	2	2

SEMESTER VI- PAPER CODE -UEN18DE601

FIRST AID AND SPORTS INJURY & PHYSIOTHERAPY

UNIT - I

Meaning, definition and importance of Sports Medicine.Definition and Principles of therapeutic exercises. Coordination exercise, Balance training exercise, Strengthening exercise, Mobilization exercise, Gait training, Gym ball exercise. Injuries: acute, sub-acute, and chronic. Advantages and Disadvantages of PRICER therapy, Aquatic therapy.

UNIT - II

Principles of injury prevention – warm – up & cool down – stretching – static, dynamic, ballistic, PNF stretching – protective equipments& shoes. Principles of rehabilitation – muscle conditioning – flexibility – proprioceptive sports skills – cardiovascular fitness – progression & stages of rehabilitation – return to sports.

Unit - III

First Aid: Definition – Principles – First aid Kit. First Aid for Bleeding, Epilepsy, Shock, Drowning, Heart attack, Heat stroke, Snake bite. Types of Dressing and bandages- Cardio Pulmonary Resuscitation.

UNIT - IV

Sports Injury: Meaning and Definition – Prevention of sports injuries – classification of injuries. Open injuries: Abrasion, Laceration, Incision, Puncture, Avulsion. Closed injuries: Sprain, strain, subluxation, dislocation, fracture, contusion, Muscle cramp; its first aid and treatments.

UNIT - V

Physiotherapy: Definition and Guiding principles. Hydrotherapy: Cryotherapy, Ice pack, Ice wrap, Ice massage, Ice towel. Thermo therapy: - Hot bag, Contrast bath, Whirlpool bath. Electro therapy: Short wave diathermy, Infrared therapy, Ultrasound therapy. Wax therapy, Traction Unit. Massage: Definition, Physiological effects – Classification of massage -Swedish system.

REFERNCES BOOKS:

1. Christopher M. (1993). Norris Sports Injuries Diagnosis and Management for Physiotherapists, East Kilbride: Thomson Litho Ltd.
2. ClearеMaxwell.,& Hudson. (1998). The Complete Book of Massage. London: Dorling Kindersley Ltd.
3. James, A. Gould.,& George J. Davies. (1985). Physical Therapy. Toronto: C.V. Mosby Company.
4. Morris, B. Mellin (1989). Sports Injuries and Athletic Problems. New Delhi: Surjeet Publication.
5. Steven Roy.,& Richard Irvin. (1983). Sports Medicine. New Jersey: Prentice - Hall Inc.
6. The Encyclopedia of Sports Medicine. (1998). The Olympic Book of Sports Medicine. Australia: Tittel Blackwell scientific publications.

COURSE OUTCOMES:

1. To know and understand the science, methods, techniques and instruments on which physiotherapy is based.

2. To know and understand the methods, procedures and actions expected in clinical contexts, as well as to employ physiotherapy as an educational tool for promoting and maintaining health.

3. To participate in the areas of the promotion, prevention, protection and recovery of health.

4. To learn in the development of physiotherapy protocols based on scientific evidence that promote research in physiotherapy.

5. To understand the importance of upgrading knowledge, skills and attitudes

Familiarise themselves with First Aid regulations of 2002

6. Be aware of the duties of the students as to First Aid

7. Manage an unresponsive casualty who is breathing normally

8. Manage and unresponsive casualty who is not breathing normally

9. Understand how to manage a variety of conditions.

MAPPING:

COURSE OUTCOME	PO1	PO2	PO3

1	3		
2	3		
3	3		
4	3		
5	3		
6	3		
7	3		
8	3		
9	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	3	
2	3	
3	3	
4	3	
5	3	
6	3	
7	3	
8	3	
9	3	

SEMESTER VI- PAPER CODE -UEN18DE602

OCCUPATIONAL AND FUNCTIONAL ASSESSMENT

UNIT – I

Occupational assessment – clinical assessment – early intervention and counselling – Job analysis – Traditional exercise testing – simulated

work testing – on the job monitoring.

UNIT – II

Early rehabilitation – disability – new employment- non vocational activity – influence of environmental conditions- heat stress – cold stress – altitude – pollutants.

UNIT – III

History of Resistance training – Basic principles of resistance training – metabolic demands – biomechanical actions – injury potential.

UNIT – IV

Acute program variables – choice of exercises – order of exercises- split routines – number of sets – intensity of exercise – rest between sets and exercises.

UNIT – V

Chronic programming – periodization of Training – linear and non linearperiadization – basic techniques in resistance training – breathing – full range of movement – movement speed – warm up- machine and free weight exercises- equipment – Flexibility training – types of flexibility – static- ballistic – dynamic – proprioceptive Neuromuscular Facilitation Techniques.

REFERENCE BOOKS

1. ACSM (2014) ACSM's Resource Manual for exercise testing and prescription – Lippincott Williams and Wilkins
2. Kraemer WJ. Ratamess NA. Fundamentals of resistance training: progression and exercise prescription. Med Sci Sports Exerc, 2004: 36(4); 674-88.
3. American College of Sports Medicine, American College of Sports Medicine position stand. Progression models in resistance training for healthy adults, Med Sci Sports Exerc. 2009: 41(3): 687-708.

SEMESTER VI- PAPER CODE -UEN18DE602

OCCUPATIONAL AND FUNCTIONAL ASSESSMENT

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3. American College of Sports Medicine, American College of Sports Medicine position stand. Progression models in resistance training for healthy adults, Med Sci Sports Exerc. 2009: 41(3): 687-708.

COURSE OUTCOMES:

1. Students will able to design individual nutritional plan for old person based on prioritized problems and goals, justified intervention and outcome measures and within a specific time frame.

MAPPING:

COURSE OUTCOME	PO1	PO2	PO3
1	3		
2	3		
3	3		

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

(CO)		
1	2	
2	2	
3	2	

SEMESTER VI- PAPER CODE -UEN18DE603

SPORTS BIOMECHANICS

UNIT-I

Definition and meaning of Biomechanics –Sports Biomechanics- Scope – Need and importance of biomechanics- historical development of sports biomechanics- Role of biomechanics in sports

UNIT-II

Definition of Forces- Classifying Forces:Internal Forces-External Forces-Friction- Equilibrium – Types of Equilibrium – linear kinematics – acceleration and projectile motion.

UNIT-III

Newton's Laws of Motion – First of Law of Inertia, Second Law of Acceleration and Third Law of Action Reaction – Linear Motion – Angular Motion – General Motion – angular linear velocity – angular acceleration – anatomical system for describing limb movements.

UNIT-IV

Meaning of stress and strain – stress and strain of the body – types of stress and strain – types of strain – mechanical properties of stress and strain relationship.

UNIT-V

Bio-mechanical analysis – mechanical properties of stress and injury – tissue responses to injury – mechanism of over injury – individual differences tissue threshold – intrinsic and extrinsic factors affecting injury.

Reference:

1. Peter. M. Mcgimis, (2005), Biomechanics of sports and exercise", Human

Kinetics.

2. Susan J. Hall, Mc Grow Hill, (2003), Basic Biomechanics".

Dr.A.K.Uppal, V. Lawrence Gray Kumar, Mamatamanjari panda, "Bio mechanics in physical education and exercise science", Friends publications

LEARNING OUTCOME:

1. To enable the students to learn the basic concepts of Biomechanics.

MAPPING:

COURSE OUTCOME	**PO 1**	**PO 2**	**PO 3**
1	**3**		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	3	

SEMESTER VI- PAPER CODE -UEN18DE604

NUTRITION AND IMMUNE FUNCTION IN ATHLETES

UNIT – I

Immune system – Functions of the immune system- Components – Leukocytes – Types of Neutrophils – Eosinophils – Bosophils – Monocytes - Lymphocytes - function and characteristic

UNIT – II

Immune response – mechanism of general response – Clonal

selection and immunological memory – cellular immune response – Humoral fluid response – Antigen – Antibody reactions – Complement – Disorders of the immune mechanism

UNIT – III

Effect of exercise on the immune system – Acute effect of exercise on immune function – Chronic effect of exercise on immune function – Guidelines for the athlete to reduce the risk of infection – nutritional counter and measures.

UNIT – IV

Nutritional Manipulation - immune depression in athletes – nutritional influence on immune function in athletes –Role of carbohydrate, protein and fat in immune function – pre and post exercise

UNIT – V

Immune function and nutrition of elite athletes -Nutritional influence – role of vitamins and minerals in immune function – Effect of Dietary deficiency and excess - Dietary Sources – RDA – Fluid Concentration

REFERENCE BOOKS:

1. Asker Jeukendrup and Michael Gleeson (2004) "Sports nutrition" Human Kinetics, inc
2. Nieman, D.C., and B.K. Pederson (2000) "Nutrition and Exercise Immunology". CRC press: Boca Raton, FL.
3. Journal of sports sciences ISSN 0264 – 04147x online copyright 2004 Taylor & Francis Ltd

LEARNING OBJECTIVES:

1. Students will apply the concept of nutritional intervention to immune system of the athlete in various sports.

2. They will also insist the athlete to maintain the IMMUNE system for better performance.

MAPPING:

COURSE OUTCOME	PO1	PO2	PO3
1	3	3	
2	3	3	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	1
2	1	1

SEMESTER VI- PAPER CODE -UEN18DE605

FITNESS AND WELLNESS

UNIT – I

Definition and Meaning of Physical Fitness- Strategies for increasing Physical Fitness in India - Values of Physical Fitness - Components of Health Related Physical Fitness and performance related Physical Fitness - Definition and components of wellness - Relationship between fitness, health and Wellness.

UNIT – II

Factors influencing Fitness Age – Sex-Climate-Diet-Exercise and Training - Types of Exercises used in Fitness (Aerobic, Anaerobic, Isometric, Stretching, Agility and Balancing). Health benefits of Physical Activity - Assessment of Cardio-respiratory Fitness, Musculoskeletal Fitness, Flexibility and Body Composition.

UNIT – III

Prescription for aerobic exercise - Modes of aerobic exercise - Implementing an aerobic fitness programme - Principles of cardiovascular exercise prescription - Aerobic exercise programmes (walk-jog-run) aerobic dancing, rope jumping, treadmill running, jogging in place, stair climbing, stationary bicycling.

UNIT – IV

Prescription for Flexibility - Principles of flexibility Exercise - Types of Flexibility and methods of training - Flexibility exercise for the low back, round shoulders, joggers, runners and various muscles or upper and lower extremities.

UNIT – V

Resistance Training Meaning - Benefits of resistance training - Terminology used in resistance training - sets, resistance (Load), repetitions maximum - Principles of exercise prescription the threshold - over load, specificity, reversibility, and Progression - warm-up - cool-down.

REFERENCE BOOKS:

1. Franks Don B. et.al (1999), "The Health Fitness Handbook", Human Kinetics.
2. Lindsey Ruth, Corbin B.Charles (2007), "Fitness for Life", Human Kinetics.
3. Pollock,Michael.et.al(1998), "Health and Fitness Through Physical Activity", New York: McGrew Hill Book Company.
4. Williams H. Melvin (1995), "Life time Fitness and Wellness", Brown Publications, Dubugue.
5. Siedentop Daryl, 1994 "Introduction to Physical Education Fitness and Sport", Mayfield Publishing Company, Mountain view, California.
6. Batman P. and Van Capelle M. (1995) "The Exercise Guide to Resistance Training", FITAU Publications, Australia.

COURSE OUTCOMES:

1. Students will be able to explain the process to become physically fit. They will also understand how food affects your personal well-being and learn how to make smart choices. They will demonstrate this through personal journal keeping, class assignments, group projects, physical activities, quizzes and physical tests.
2. To define how becoming fit and leading a healthy lifestyle will improve the quality of life both mentally and physically.
3. Students will be able to explain how the way they live their life will affect the quality of life they lead.
4. They will demonstrate this through personal journal keeping, class assignments, group projects, physical activities, quizzes and physical tests.
5. Develop a personal fitness routine.

COURSE OUTCOME	PO1	PO2	PO3
1	3	2	
2	3		
3	3		
4	3		
5	3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	
3	1	
4	1	
5	1	

SEMESTER VI- PAPER CODE -UEN18DE606

STABILITY AND CORE TRAINING

UNIT – I

Science of Core stability – Tolerance and capacity –core function anatomy –anterior core muscle – posterior core muscletherapeutic/ corrective exercise – Injury prevention program reducing risk of injury

UNIT – II

Abdomen Revolution - components of Abdomen Revolution – back disorders - Back pain - Swayback and Facet Pain -Stenosis -Flat Back - Disc Pain – Spondylolisthesis-Mystery pain – flat belly and Abdomen revolution – osteoporosis and Abdomen exercise – Isometric Abdomen drill

UNIT – III

Spine organization –Posture control – Breathing – Diaphragm breathing –Lateral breathing – Activation – Mobilization - core stability – positions - core strength – power development

UNIT – IV

Designing core strengthening programme - Core strength and endurance training for performance – without equipment – with equipment (Swiss ball and Medicine ball) – Functional Training

UNIT – V

Stabilization progression - Hook-lying – hands and knees – face down – Bridging – Plank – sports specific.

REFERENCE BOOKS:

1. Brumitt, J. (2010) core assessment and training. Human Kinetics
2. Paul Collins (2009) "Core Strength" Sports publishers Association
3. Jeffrey M. Willlardson (2014) "Develop the core" Human Kinetics
4. www.nsca.com/PDF/coretraining

COURSE OUTCOMES:

1. Apply the core principles to exercise on a large stability cushion
2. Understand how the unstable nature of the cushion challenges stability.
3. Discover how to include proprioceptive challenge into any workout.

MAPPING:

COURSE OUTCOME	PO1	PO2	PO3
1	3		3
2	3		3
3	3		3

MAPPING (CO's and PSO's)

Course	Program Specific

Outcomes (CO)	Outcomes (PSO)	
1	1	
2	1	
3	1	

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
MELAKKOTTAIYUR POST CHENNAI - 600 127
DEPT. OF EXERCISE PHYSIOLOGY AND BIOMECHNANICS
M.Sc., SPORTS BIOMECHANICS AND KINESIOLOGY
(Two years Regular Programme)
CHOICE BASED CREDIT SYSTEM (CBCS)

M.SC. EXERCISE PHYSIOLOGY AND NUTRITION

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO-1 : To train and prepare students for professional roles in promoting optimum health and wellness of individuals and diversecommunicationthroughtheapplicationandintegration of exercise physiology and Special Nutrition, dietetics,sports, research, andservice.

PEO-2 : Toconductadvancedresearchinareasrelatedtonutritionand exercise physiology and mentor junior researchers who will became future thought leaders in thefields.

PEO-3 : Topreparestudentsforprofessionalcredentialinginhealthcare vocationalwithemphasisinexercisephysiology,nutritionand dietetics, fitness health promotion, disease prevention and relatedspecialties.

PROGRAMME OUTCOMES (PO'S)

The post graduates are able to

PO-1) To gain knowledge on Cardio respiratory physiology, muscular physiology, Environmental Physiology, advanced human nutrition, Research and statistics, Neuro physiology, Renal physiology, Health and fitness, Ergogenic aids and supplements, Exercise and sports for women, Training and performance

PO-2) To gain knowledge in fitness and nutrition

PO-3) To analyse the body composition and to assess the anthropometric measurements

PO-4) To create a platform to students to engage in exercise Physiology and Nutrition, Research and persue higher education

PO-5) To produce an efficient Exercise Physiologist in Research laboratories, fitness centre, National teams and faculty in Academic institutions.

PO-6) To produce Sports Nutritionist to work with Sports Teams/ Sports Clubs/ Research Labs as Sports Nutritionist.

MAPPING OF PEO'S WITH PO'S

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
PEO 1	X	X	X	X	X	X
PEO 2	X	X	X	X	X	X
PEO 3	X	X	X	X	X	X

PROGRAM SPECIFIC OUTCOME:

The post graduates are able to

PSO1: Assess, prescribe and apply the knowledge of exercise physiology to the normal, sports and special population.

PSO2: Assess, plan, prescribe and apply the knowledge of sports nutrition to the normal, sports and special population.

PEN18CT101	BIOENERGETICS AND MUSCULAR PHYSIOLOGY
	Unit I Muscular System: Types of Muscles - Structure and biochemical properties of skeletal Muscle - Functions, Muscle fibers types – Fast twitch Muscles fibers and slow twitch Muscles fibers, Mechanism of MuscleContraction:SlidingFilamentMechanismofMuscleContraction-Types of Muscularcontraction. **Unit II** Define Metabolism and Energy: Energy for Muscle Contraction - ATP-PCr system – Glycolytic system – Oxidative system – Fatiguetypes, Causes and recovery – Cori cycle - Oxygendebt. **Unit III** Neuroendocrine control of Energy metabolism: Glucose Homeostasis, Feed Forward control of Glycemia during exercise, Facilitatedglucosetransport,insulinandhepaticfatmetabolism,insulin response to exercise, Glucagon- Insulin antagonist. AutonomicNervous system and Catecholamine: Effect of exercise, intensity and trainingonCatecholamine responses. Growth hormone and exercise, Anti-Diuretic Hormone(ADH) and exercise. **Unit IV** Metabolic response to exercise: Lactate metabolism during exerciseand recovery, Metabolic fate of Lactic acid after exercise- lactate as a carbon reservoir during recovery, Exercise related disturbances to mitochondrialfunction–Temperature,fattyacidsandIons,calciumiron, sympathetic stimulation. Lactic acid turns over during exercise: production, removal andclearance. **Unit V** Training adaptation: Aerobic and anaerobic trainings and their effects on muscles - Muscle Hypertrophy and Muscle Atrophy-Hyperplasia of Muscle Fibers - Muscle soreness - Muscle atrophy and detraining -Rigor Mortis.

COURSE OUTCOME:

CO1 – Understanding of metabolic influences in glucose fatty acid cycle

- CO2 – Distinction between fast and slow components of recovery oxygen
- CO3 - Pathways for recovery of energy stores-
- CO4-Training impacts on fuel use and recovery
- CO5- Influences on lactate inflection point

MAPPING (CO's and PO's)

Programme outcomes

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	2		3	3	
2	3					
3	3					
4	3					
5	3					

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		
2		
3		
4		2
5		

] PEN18CT102 **CARDIOVASCULAR AND RESPIRATORY PHYSIOLOGY**

UNIT - I

Components of Fitness – Cardiorespiratory endurance

	–muscular strength – Flexibility – Body Composition. Basic Cardiac Anatomy – structureandfunctionsofHeart– coronaryarteries-valvesoftheheart– cardiac physiology concepts – conducting system of the heart – cardiac cycle – during rest and exercise - redistribution of blood – heart rate variability – importance of sleeping heartrate. **UNII - II** Electrocardiogram – Cardio dynamics – cardiac output – blood pressure –Factors affecting stroke volume – factors affecting cardiac output–measuringbloodpressure– bloodpressureandvenousreturn. cardiac adaptations in response to aerobictraining. **UNII - III** Cardiacelectrophysiologyandmechanics– membraneandcellular structure and function – action potential – cardiac tissue and bioelectricity – cardiacmechanics. **UNII - IV** FunctionalanatomyoftheBronchopulmonarysystem– Anatomyof therespiratorysystem– Internalandexternalrespiration–respiration– mechanismofinspirationandexpiration-alveolarventilation– Deadspace–diffusionandtransportofgasses– lungvolumesandcapacities– O_2–Haemoglobin– Dissociationcurveindifferencecircumstances. **UNII - V** Lungfunctiontest–cardiorespiratoryendurancetest– laboratory tests– direct Method AssessmentO_2 and CO_2 through gas analyser by using standard protocoland indirect Method - Harvard step test – field test- 12 minutes run and walk test – Queens college Step test andBeep test - effect of exercise on respiratorysystem.

COURSE OUTCOMES:

1. Critically evaluate the central and peripheral mechanisms that regulate the cardiovascular and respiratory systems in exercise and their interactions.
2. To use the Exercise programmes to enhance cardiovascular and respiratory function in health, sports and disease.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	3		3	3	3
2	3					3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		
2	1	
3		
4		
5		

PEN18CT103

ADVANCED HUMAN NUTRITION

UNIT – I

Structural features of Carbohydrates –Classification of carbohydrates:SimpleCarbohydrates:Monosaccharide– Disaccharides– ComplexCarbohydrates:Oligosaccharides–

	Polysaccharides–Digestion: DigestionofPolysaccharides-DigestionofDisaccharides–Absorptionof Glucose and Galactose- Absorption of Fructose - Monosaccharide TransportandcellularUptake-GlucoseTransporter-MaintenanceofBlood Glucose level – Glycemic response to carbohydrates: Glycemic Index - GlycemicLoad. **UNIT - II** Proteins – Functional Categories: Catalysts-Messengers-structural elements-Immunoprotectors – Transporters - Buffers - Fluid balance - Other role-Protein Digestion and Absorption - Amino acids: Essential aminoacidsandNon-essentialaminoacids-KindsofProteins:Complete Proteins and Incomplete Proteins – Functions of Proteins in the body - NitrogenBalance. **UNIT - III** Lipids - Kinds of Lipids: Simple Lipids: Fatty acids-Saturated fattyacids-UnsaturatedfattyacidsandTransFattyAcid-EssentialFattyacids: Linoleicacid(anomega-6fattyacid)and linoleicacid(anomega-3fattyacid) andNon-essentialFattyacids(omega-9fattyacid)–Triglyceride–Sterols-CompoundLipids:Phospholipids–Glycolipids-LipoproteinsDerivedLipids: Cholesterol- Functions of Cholesterol - Total Cholesterol - High density lipoproteins-LowDensityLipoproteins-LipidsDigestionandAbsorption. **UNIT - IV** Vitamins - Classification of vitamins: Fat soluble vitamins - A (Carotenoids), D, E and vitamins K - Water soluble vitamins: Vitamin C (Ascorbic Acid) and B complex group: Thiamine (Vitamins B_1)-Riboflavin (Vitamins B_2) - Niacin (Vitamins B_3)- Pantothenic Acid -Biotin - Folate-VitaminsB_{12}(Cobalamin).VitaminsB_6 - Absorption,Transportandstorage- Functions and mechanisms of

action – Interaction with other Nutrients - Dietarysources-RecommendedDietaryallowances(RDA)-Deficiency.

UNIT - V

Minerals: Classification of Minerals: Macro minerals and Micro minerals: Calcium – Phosphorus – Magnesium-Sodium- Potassium- Chloride- Iron- Zinc- Copper- Selenium Iodine-Manganese - Absorption, Transportandstorage-Functionsandmechanismsofaction–Interaction withotherNutrients-Dietarysources-RecommendedDietaryallowances (RDA)-Deficiency.

COURSE OUTCOMES:

1. It will be the physical and biological science foundation of the dietetics profession.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	3	3	3	3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		1

PEN18CT201

NEURO PHYSIOLOGY

UNIT – I

Definition of Neurophysiology – structure and functions of neuron – degeneration and regeneration – receptors – reflex – Action potential – Depolarization – Repolarization – Synapse- Synaptic transmission – Neurotransmitters.

UNIT - II

Cutaneous and deep visceral sensation – Ascending and Descending tracts of spinal cord- Motor unit – organization of motor and sensory functionsofCNSandSpinalcord– functionsofBrainstem–cerebellum

– Basal Ganglia - Hypothalamus – Thalamus- cerebral cortex.

UNIT - III

Higher function of Brain – Arousal – sleep , learning memory, speech – EEG – conditioned reflex – neural basis for instinctual and Behavior emotion – control of posture – equilibrium – muscle tone.

UNIT - IV

Diencephalon function – Hypothalamus and body‘s Homeostasis- the controlofbodytemperature–appetite– defecation–micturition-heart rate-Sleeping-arterialBloodPressure–Anterolateralsystemconducting afferentpainandtemperatureinteractswiththethalamus.

UNIT – V

Brain imaging techniques – CT (Computerised Tomography) – MRI (Magnetic Resonance Image) - Use of CT and MRI for identifying deep brain structure, acute pain, hemorrhage, tumors, and edema. Effect of Exercise on Nervous System

COURSE OUTCOMES:

1. To interpret the knowledge of Neurophysiology in athletes and in special population.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	2	1	2		1

MAPPING (CO’s and PSO’s)

	<table><tr><td rowspan="2">Course Outcomes (CO)</td><td colspan="2">Program Specific Outcomes (PSO)</td></tr><tr><td></td><td></td></tr><tr><td>1</td><td>-</td><td>-</td></tr></table>
P EN18CT202	**TRAINING AND COMPETITION NUTRITION**
	Unit I: SportNutrition-Assessmentofnutritionalstatus:ThreeDayFood Record – Seven Day Food Record – 24 Hours Recall – Food Frequency- DietHistory-CarbohydrateDietsfortraining– MuscleGlycogen-Liver Glycogen - Regulation of Glucose Concentration – Hypoglycemia-Carbohydrates Ingestion before Exercise - CarbohydratesMaintenance Duringexercise-CarbohydratesReplenishmentAlterExercise-Glycemic load – Carbohydratesloading. **Unit II:** Biology of protein and amino acid requirements: Body protein mass-Proteinsynthesis,degradation,andturnover-ProteinUtilizationin AthleticPerformance-ProteinrequirementsforEnduranceAthletes-ProteinrequirementsforStrengthAthletes–Proteinessentialforbefore exercise, during exercise and in recovery from exercise - Benefits and Risks of a High-Protein Diet-NitrogenBalance. **Unit III:** Weightmanagement–Methodsusedtodeterminedweightstatus: Body mass index – Waist-to-hip ratio - Body Composition

and Performance - Changes in Body Composition -Methods for measuring bodycomposition:Hydrostaticweighing-BioelectricImpedanceAnalysis-DualEnergyX-rayAbsorptiometry(DEXA)-SkinfoldThickness-Principlesofhealthyweightreduction-Makingweightforweightcategory sports - Principles of healthy weightgain.

Unit IV:

Composition of Body Fluids: Intracellular Fluid - Extracellular Fluid - Fluid guidelines - Fluid need before exercise - Fluidneed during exercise-Fluidneedafterexercise,Dehydration-Effectsofdehydration andoverhydration-Heatcramps,Sportsdrinks-Typesofsportsdrinks- Energy drinks, Fluid and Electrolyte Management- Strategies to delay fatigue-Effectsofhyperthermiaanddehydrationonperformance.

Unit V:

Planning Diets: Principles of Planning Diets - Steps involved in Planning a Diets - Dietary guidelines for Eating Right - Food Guide Pyramid - Healthy Eating Pyramid - Planning Diets for aerobic and anaerobicsports-PlanningDietsforIntermittentsports-PlanningDiets forthetravelingathlete-Planningdietsforavegetarianathlete.

COURSE OUTCOMES:

1. To impart knowledge on sports specific nutrition and hydration guidelines- in power/strength, weight class-combat and racket sport athletes.

2. To help students understand the role or ergogenic aids-their dose, safety and efficacy to enhance sportsperformance

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	3	3	3	3	3
2	3	3	3	3	3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		1
2		1

PEN18CT203

STATISTICS IN EXERCISE PHYSIOLOGY AND NUTRITION

UNIT – I

Statistics-Basic Concept –Need and Importance of Statistics; Data-Raw and Grouped, Types of data; Concept And Calculations of Measures of Central Tendency-Mean, Median And Mode; Measures of Variability- Range, Mean Deviation, Quartile Deviation And Standard Deviation.

UNIT – II

IntroductionToNormalDistribution–NormalCurve–Characteristicsof Normal Curve -Properties of Normal Curve – Standard Normal Curve - ProblemBasedOnNormalDistribution– UsesofNormalDistribution.

UNIT - III

Testing Of Hypothesis - Procedure, Types of Hypothesis, Level of Significance,OneTailedandTwoTailedTest,DegreesofFreedom;Test of Significance for Difference of Means- t Test - Independence and Dependence Test, Z-Test ; One Way Analysis ofVariance.

UNIT - IV

Correlation-

PearsonProductMomentCorrelation,SpearmanRankOrder Correlation, Phi Correlation, Biserial Correlation Partial and Multiple Correlation

UNIT -V

NonParametric:ChiSquareTest– EqualOccurrenceTest,Independence of Attributes, Contingency Coefficient; Graphical Representation –Line Diagram, Bar Diagram- Multiple Bar Diagram, Pie Diagram – SPSS Package.

COURSE OUTCOMES:

After completing this subject we will be able to understand about

1. the basic concepts of Statistics
2. need of Statistics
3. how to analysis the problem using statistics tools

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3				3	
2	3				3	
3	3				3	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	2	2
2	2	2
3	2	2

PEN18CT301	**ENVIRONMENTAL PHYSIOLOGY**
	UNIT – I DefinitionofHomeostasis,thermoregulation,metabolism–heatstress– Fundamental principles involved in thermoregulation – Conduction – Convection - - Radiation – Evaporation – Hypothalamus and heat losing mechanism-role of endocrine glands in regulating body temperature – temperature regulation during exercise. **UNIT - II** Temperature regulation in hot environment – Acclimatization to heat – sweating–increasedplasmavolume–increasedstrokevolume–improved cutaneous blood flow – heat exhaustion – heat cramps – heat stroke - precaution to be taken in hot environment–- precaution to be taken to avoid heat illness- Temperature regulation in cold environment – acclimatizationtocold–finemotoractivity–fecilitationofmetabolicheat production-precautiontobetakenincoldenvironment. **UNIT - III** The environmental differences between High altitude and sea level – immediate physiological changes at high altitude - Acclimatization - in respiratory system – in cardiovascular system – long term adaptation - time of acclimatization – the importance of training at altitude- aerobic process–anaerobicprocess–performanceatAltitude–Hypoxictraining methods for improving endurance exerciseperformance. **UNIT–IV**:Generalcharacteristicsofunderwaterenvironment–SCUBA diving–physiologyofunderwaterdiving–physiologicalresponsetowater immersion –exposure – breath

hold limitations – Ambient pressure changes– breathingunderpressure–physiologyofdecompression.

UNIT - V

Factorsaffectingphysiologicalperformance–skeletalsystem– muscular system –cardiovascular system – respiratory system –Bio-energetic system – lactate tolerance – maximum aerobic capacity – hormonal difference.

COURSE OUTCOMES:

1. Students who successfully complete the paper will develop an understanding of the physiological adaptations that have evolved them to survive, adapt, participate and to train in various sports activities.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	3	3		3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	

PEN18CT302

RESEARCH METHODOLOGY IN EXERCISE PHYSIOLOGY ANDNUTRITION

UNIT – I

Definition of research – Meaning, Need, Important of research in Exercise Physiology and Nutrition, Qualities of good research, classification of research – Basic Research, Action Research, Applied Research, Philosophical Research, and Historical Research.

	UNIT –II Experimental Research – Comparative and Analytical Research – DescriptiveResearchMethods– Need,ImportanceandToolsofSurvey, Case Study, InterviewTechnique. **UNIT – III** Experimental Design – Single Group Design – Reverse Group Design, Repeated Measures Design – Static Group Design, Equated Group Design, Random Group Design, Rotated Group Design, Static Group - Comparison Design, Repeated-Measures Design. **UNIT – IV** Sampling - Need For Sampling; Advantages – Disadvantages; DeterminingtheSampleSize;TypesofSampling-ProbabilitySampling Method,Non-ProbabilitySamplingMethod,RandomSamplingDesign- Simple Random Sampling; Complex Random Sampling Design - Stratified Sampling-Proportionate Sampling-Cluster Sampling-MultistageSampling, Systematic Sampling, Sequential Sampling **UNIT – V** Research format, Research proposal, Style of writing research, Objectives of the Study , The significance of the problem, Hypothesis, Delimitations, Limitations Review of Related Literature, Methodology, Results and Discussions, Method of writing Abstract

COURSE OUTCOMES:

After completing this subject we will be able to understand about

1. the basic concepts in research
2. need and scope ofresearch
3. types of research in recenttrends
4. how to analysis the problem usingstatistics techniques

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3					3
2						
3						
4						

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	2	2
2	2	2
3	2	2
4	2	2

PEN18CT301	**EXERCISE AND DIET PRESCRIPTION FOR SPECIAL POPULATION**

UNIT – I

Definition of obesity - Prevalence of obesity - Factors that contribute to obesity- Assessment: Body mass index-Waist to Hip ratio (WHR)-Broka'sIndex-Typesofobesity-DietaryModificationofobesity- Behavior Modification-Ill Effects of Obesity-Exercise Testing - Exercise prescription

for obesity -Special Considerations-Recommended Weight LossPrograms.

UNIT - II

DefinitionofDiabetesMellitus– PrevalenceofDiabetesMellitus– Etiology of Diabetes Mellitus – Types of Diabetes Mellitus – Signs and Symptoms - Diagnostic Tests-complications of Diabetes Mellitus – Healthy Approaches to Managing Diabetes:Focusing on Nutrition-DietaryMacronutrients -Fiber Intake-Carbohydrate Intake–Exercise Testing- Exercise and Diabetic Diet prescription for Diabetes Mellitus-Special Considerations.

UNIT - III

DefinitionofHypertension-PrevalenceofHypertension-Etiology ofHypertension-Regulationofbloodpressure-CausesofHypertension- Classification of hypertension - complications of Hypertension - Prevention of Hypertension: Dietary Management -Sodium Restricted Diets-Exercise Testing-Exercise prescription for Hypertension -Special Considerations.

UNIT - IV

DefinitionofCoronaryHeartDisease(CHD)-PrevalenceandRisk factors of Coronary Heart Disease - Sign and symptoms of Coronary Heart Disease - Role of Fat in the Development of Atherosclerosis- Prevention of Coronary Heart Disease: Dietary Management - Heart- Healthy Diet Plans-Heart-Healthy Dietary Recommendations- Inpatient Rehabilitation Programs - Outpatient Exercise Programs - Exercise Prescription without a Preliminary Exercise Test - Exerciseprescription for Coronary HeartDisease

UNIT – V

Chronic Pulmonary Diseases - Chronic obstructive pulmonary disease –Types ofObstructive Pulmonary

Disorders - Impairments and Impact on Function-Management Guidelines-Restrictive pulmonary disorders-AcuteandChronicCausesofRestrictivePulmonaryDisorders-Management Guidelines -Pulmonary function tests-Nutritional impact- Nutritional screening and nutritional assessment-Nutritional requirements-Breathing Exercises and Ventilatory Training-Guidelines for Teaching BreathingExercises.

COURSE OUTCOMES:

1. TodeveloptheStudentswillbecomeexpertiseinexercisetesting and prescription in Specialpopulations.
2. The risks of exercise, pre-participation screening procedures and guidelines for exercise prescription arediscussed.
3. ThefocuswillbeonDietandaerobic/cardiovascularassessment and conditioning.
4. Studentswillbecomeknowledgeableaboutlaboratoryandfieldtesting techniquesincludingtheestimationofaerobiccapacity,Strength and Flexibility and prescription of exercise through theoretical and laboratory learning.
5. Basedonthediseasespecificmechanisms,evidence-basedoptionsfor exercise interventions will bepresented.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3		3	3	3	3
2	3					3
3	3					3
4	3					3
5	3					3

MAPPING (CO's and PSO's)

Course	Program Specific

	<table><tr><td rowspan="2">Outcomes (CO)</td><td colspan="2">Outcomes (PSO)</td></tr><tr><td></td><td></td></tr><tr><td>1</td><td>1</td><td>1</td></tr><tr><td>2</td><td>1</td><td>1</td></tr><tr><td>3</td><td>1</td><td>1</td></tr><tr><td>4</td><td>1</td><td>1</td></tr><tr><td>5</td><td>1</td><td>1</td></tr></table>
DSE	**HEALTH, FITNESS AND PERFORMANCE ASSESSMENT** **UNIT – I** Preliminary Health Evaluation: Physical Activity Readiness Questionnaire (PARQ)- Medical History Questionnaire-Signs and Symptoms of Disease and Medical Clearance-Coronary Risk Factor Analysis-Disease Risk Classification-Lifestyle Evaluation-Informed Consent-Clinical Tests: Physical Examination-Blood Chemistry Profile- Resting Blood Pressure-Graded Exercise Test. **UNIT – II** Meaning and Definition of Blood Pressure, Heart Rate, and Electrocardiogram: Testing Procedures for Resting Blood Pressure Measurement - Auscultation-Palpation-Heart Rate Determination by Palpation –Electrocardiogram Recordings-Twelve-Lead Electrocardiogram-Electrocardiogram Basics- Resting 12-Lead ElectrocardiogramProcedures. **UNIT – III** Meaning and Definition of Physical Fitness-Types of

Physical Fitness: Health-related fitness and Skill-related fitness- Health-related fitness components: Cardiovascular Endurance-Muscular strength and Endurance–Flexibility-Body composition-Pretest Instructions-Tests Administration and Interpretation-Skill-related fitness: Power-Speed-Agility-Balance and Coordination-Reaction time- Pretest Instructions- Tests Administration and interpretation.

UNIT – IV

BasicTrainingPrinciplesforExerciseProgramDesign:Principleof Specificity-Principle of Overload-Principle of progression- Principle of initial values -Principle of individual variability-Principle of diminishing returns-Principle of reversibility- Basic Elements of the Exercise Prescription: Mode-Intensity-Duration-Progression ofExercise.

UNIT – V

Definition of Terms cardiorespiratory fitness or Maximumoxygen uptake (VO_2max): General Guidelines for Exercise Testing-General ProceduresforCardiorespiratoryFitnessTesting-MaximalExerciseTest Protocols-Treadmill Maximal Exercise Tests-Graded Exercise protocol- Balke Treadmill Protocol-Bruce TreadmillProtocol.

COURSE OUTCOMES:

1. Describeanddiscusstherelationshipbetweenphysicalactivityand health across thelifespan.
2. Conduct health related fitness assessment for the cardio respiratory endurance, muscular strength, endure, flexibility and bodycomposition

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	3	3	3	3	3
2	3	3	3	3	3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	

DSC

MUSCLE AND EXERCISE METABOLISM

UNIT – I

Define metabolism – Energy for muscular contraction –Aerobic metabolism – Anaerobic metabolism – Fat oxidation –

UNIT - II

Fuelstoresinskeletalmuscle– Regulatorofenergymetabolism– Intracellularfactors– Hormones–Insulin–Glucagon–Catecholamines– Growth hormones andcortisol

UNIT - III

Metabolic response to exercise – Cause of fatigue in High – Intensityexercise–prolongedexercise– Metabolicadaptationtoexercise training

UNIT - IV

Metabolic calculation – Expressions of energy expenditure – Relativeoxygenconsumption– Metabolicequivaents(METs)–Calories– Fat stores – Net versus grossVo2

UNIT - V

Metaboloic formulae - Walking and running formulae – Leg and arm ergometry formulae

COURSE OUTCOMES:

1. Studentswillbeabletoknowtheimportanceofmusclegl

ycogen andbloodglucoseforincreasedATPproductionwithinc ontracting skeletal muscle duringExercise.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3					
2	3					

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	2	

DSC

EXERCISE BIO-CHEMISTRY

UNIT – I

Biochemistry– DefinitionandImportance.Compositionofplasma. EnergyandCalorie(Kilocalorie)–DefinitionFreeEnergy-Definitionand its units. Mitochondria- Structure and function. ATP, ADP, AMP and CreatinePhosphaste-Definitionanditsformationandbreakdown.Roleof OxygeninEnergymetabolism.CatabolismandAnabolism–Definitionand itsProcess.

UNIT – II

CentralRoleofGlucoseinCarbohydrateMetabolism.Transportof Glucose Through the Cell Membrane. Glycogenesis—The Process of Glycogen Formation. Glycogenolysis-Removal of Stored Glycogen. Role of Insulin,EpinephrineandGlucagoninglucosetransportandmetabolism. Glycolysis and the Formation of Pyruvic Acid. Citric Acid Cycle (Krebs cycle). Formation of ATP by Oxidation of Hydrogen (Oxidative Phosphorylation).AnaerobicGlycolysis(CORICycle).Pentose

	Phosphate Pathway (Phosphogluconate Pathway).Gluconeogenesis. Role of Carbohydrate(BreakdownofGlucose)InEnergyMetabolism. **UNIT – III** Lipid - Basic Chemical Structure of Triglycerides. Lipoproteins-Classification,Importance,Functionsandnormalvalues.Absorptionand Transport of Lipids. Fat Deposit inadipocytes. Triglycerides for Energy.HydrolysisofTriglycerides.DegradationofFattyAcidstoAcetyl Co A by Beta-Oxidation and Oxidation of Acetyl-Co A.ATP Formationby OxidationofFattyAcids.FormationofAcetoaceticAcidintheLiverand ItsTransportintheBlood.SynthesisofTriglyceridesfromCarbohydrates. Conversion of Acetyl-CoA into Fatty Acids. Combination of Fatty Acids with a-Glycerophosphate to Form Triglycerides. Importance of Fat SynthesisandStorage.HormonalRegulationofFatUtilization.Formation and Uses of Phospholipids. Formation and Uses of Cholesterol. Factors ThatAffectPlasmaCholesterolConcentration— FeedbackControlofBody Cholesterol UNIT – IV BasicChemicalStructureofAminoAcids.Transportand Storageof Amino Acids.Functional Roles of the Plasma Proteins. Essential and NonessentialAminoAcids.UseofProteinsforEnergy-Deamination,Urea Formation by the Liver and Oxidation of Deaminated Amino Acids Ketogenesis-Definition. Hormonal Regulation of Protein Metabolism. Effect of Starvation on

ProteinDegradation.

UNIT – V

Acid-base balance. Hydrogen Ion and PH. Causes of Alteration in Acid-Base Balance- Volatile acids and Non-volatile acids. Regulation of Acid-Base Balance by Acid-Base Buffer System- Mechanism and Importance of Bicarbonate buffer system, Phosphate buffer systemand Protein buffer system Regulation of Acid-Base Balance by Respiratory Mechanism. Regulation of Acid-Base Balance by Renal Mechanism. AcidosisandAlkalosis-Definition,Types(RespiratoryandMetabolic)and itscauses.

COURSE OUTCOMES:

1. TodemonstratetechnicalmeaningoffundamentalLaboratorySkill, use proper laboratory safely in practices and demonstrate proficiencyinusingcomputerstosolvechemicalproblems
2. To demonstrate effective scientific communication skill – both writtenandoral,studentswillabletowritereportandpresentthe resultoftheirownscientificworksortheotherwork.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3					3
2	3					3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	

1	3	3
2	3	3

DSC

RENAL PHYSIOLOGY

UNIT I:

Physiological Anatomy of the Kidney-Structure of the kidney.Cortex.Medulla. – Nephron-functional unit of the kidney. Cortical and juxtamedullary nephrons. – Anatomy of the nephron. Glomerulus.Tubule. – Bowman_s capsule. Proximal tubule.Loop of Henle.Distal tubule.Collecting duct. – Kidney blood vessels. Afferent and efferent arterioles.Peritubullar capillary network.Vasa recta.Juxtaglomerular apparatus. - Principles of urine formation.

UNITE II:

Glomerular Filtration.Glomerular filtration membrane. - Net filtration pressure. – Glomerular filtrate. Composition.Glomerular filtration rate. – Clearance. Definition.Calculation.Inulin clearance.Creatinine clearance. PAH clearance. – Renal plasma flow. Filtration fraction. – Physiological control of glomerular filtration and renal blood flow. Nervous regulation.Humoral regulation.Autoregulation.Tubuloglomerular feedback.Myogenic autoregulation.

UNIT III:

Excretion of Water.Reabsorption of water in tubular segments. – Excreting excess water by forming a dilute urine. – Conserving water by excreting a concentrated urine. Obligatory urine volume.Osmotic stratification of renal medulla.Countercurrent multiplier system (loop of Henle).Role of distal tubule and collecting duct.Contribution of urea.Recirculation of urea.Countercurrent exchange system

(vasa recta). - Mechanism of water reabsorption. Role of antidiuretic hormone (ADH).Diabetesinsipidus.– Waterdiuresis.Osmoticdiuresis.

UNIT IV:

ExcretionofSodium,Chloride,PotassiumandOtherIons.Reabsorptionof sodium in tubular segments.Mechanisms of sodium reabsorption.Reabsorption of sodium in late distal tubule and in collecting duct.Role of aldosterone. – Excretion of potassium. Reabsorption of potassium.Secretion of potassium.Principal cells.Intercalatedcells.Regulationofpotassiumsecretion.– Excretionof chloride. – Excretion of calcium. Regulation of calcium reabsorption. – Excretion of phosphate. - Excretion ofmagnesium.

UNIT V:

Acid-BaseBalanceandKidney.PlasmaticpH.Acidosis,alkalosis.Sources ofhydrogenions.-Acid-basebuffersystems.Bicarbonatebuffersystem. – The role of kidney in the acid-base regulation. Secretion of hydrogen ions.Filtration and reabsorption of bicarbonateions.Generation of new bicarbonateions.– Renalresponsetoacidosis.Tubularbuffers.Therole of ammonium ion and ammonia.Renal response to alkalosis. – Respiratory acidosis and alkalosis. Metabolic acidosis and alkalosis.Micturition. Ureter Ureterorenal reflex. – Bladder. Detrusor muscle.Innervationofthebladder.Internalsphincter.Externalsphincter.

COURSE OUTCOMES:

1. Studentswillbeabletopresentindividualresearchpapers.
2. Studentswillbeabletodevelopandindepthunderst

	andingif the kidneyphysiology. course outcomes / PO 1 / PO 2 / PO 3 / PO 4 / PO 5 / PO 6 1 / 3 / / / / / 3 2 / 3 / / / / / 3 **MAPPING (CO's and PSO's)** Course Outcomes (CO) / Program Specific Outcomes (PSO) 1 / 3 / 3 2 / 3 / 3
DSC	**SUPPLEMENTS AND ERGOGENIC AIDS FOR PERFORMANCE ENHANCEMENT** **Unit: 1** Introduction to Ergogenic aids - History and development of Ergogenic aids - types of Ergogenic aids - Anabolic Steroids - Amphetamines-Beta-2-Agonists– healthriskofsteroidabuse-Effectsof Anabolic Steroidsabuse. **Unit: II** WADA - IOC - Doping agency - Doping in sports - Blood Doping insport–effectsofblooddoping-Erythropoietin– effectsofexogenous administration of erythropoietin- Banned supplements in sports: Androstenedione - Dehydroepiandrosterone (DHEA) - 19- nonandrostenedione and 19- norandrostenediol -Ephedrine. **Unit: III** Diuretics - Target organ for Diuretic Action - Narcotic Analgesics&Athleticperformance-mechanismofAction-Non-steroidal Anti - inflammatory Drugs & Corticosteroids, Narcoleptics: Beta – AdrenergicAntagonists.

Unit: IV Research and scientific evidence approved supplements: Supplements - Liquid meal supplements - Sports gels - Sports bars - Creatine - Creatine as Supplement - Mechanisms of Creatine action - Creatine and safety - Glycerol - Iron Supplement- BCAA Supplement.

Unit: V Supplements under consideration: Glutamine - Ribose - Colostrum - Beta-Hydroxy Beta Methyl butyrate (HMB) - Carnitine - Carnitine in the body - Coenzyme Q10 - Ginseng – Pyruvate - Vitamin Supplement.

COURSE OUTCOMES:

1. To apply the knowledge and to describe the ill effects of ergogenic aids toathletics
2. Toeducatetheathleticsabouttheuseofdopingsubstanceswill harm the important system and further will decline the performance.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3					
2	3					

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	2	2
2	2	2

DSC

NUTRITIONAL PLANNING FOR SPORTS AND EXERCISE

Unit I-

Meal Planning and Preparation: Principles of meal

	planning- Planning and preparation of nutritionally adequate diets for Adult man - Adultwoman-Adolescent-Schoolgoingchild-Preschooler-Nutritionfor Active Pregnant woman and Lactating woman- Special Nutritional Concerns:Vegetarian diets-The types of vegetarian:Flexitarian-Lacto-Ovo- Vegetarian-Lacto-Vegetarian-Ovo-Vegetarian-Vegan-Other Styles(Fruitarians)-Nutrition Challenges forVegetarians. **Unit II-** Water Balance and imbalance: Euhydration, Hypohydration, and Hyperhydration-Thermoregulation-Hyponatremia-Dehydration- Rehydration- Fluid balance in sports and exercise, importance,symptoms and prevention of dehydration-Age-Related Fluid Needs - Sports Drink – Hypotonic, Isotonic and Hypertonic drink for hydration/ energy and recovery drink-Other Types of Drinks:Energy Drinks-Oral Rehydration Solutions (ORS)-Sports Waters-Vitamin Waters-CoconutWater-Alcohol-Tea, Coffee andCola. Unit III EnergyandSportsPerformance:DietaryCarbohydrateandSports Performance-Dietary Fat and Sports Performance-Dietary Protein and Sports Performance-Vitamins and Sports Performance-Minerals and Sports Performance-The Pre-competition Meal-Liquid Meals-Planning andpreparationofEnergydenserecipes-Highfibrerecipes-Lowfatrecipes- Low sodium recipes- Antioxidants, Exercise and free radicals, Role of antioxidants in preventing damage and recoverytime. **Unit IV** Meal planning for regular training- Balanced diet of

different calorific value for specific sport and exercising person-Diet before competition-during Competition-after Competition (Basketball and Netball,Cricket,Cycling,Football,Hockey,Rugby,Swimming, Marathon and Endurance Running, Sprints and PowerSports)

Unit V

Paralympic sports -Classification of disabilities-Physiology and metabolism-Physiological responses to exercise-Energy expenditure- Thermoregulation-Body composition-Bone density-Dietary issues for athletes with disabilities: Current dietary intakes-Fiber, timing of food intake and bowel control-Fluid intake-Body composition management- Nutritional supplements-Eating difficulties and behaviors observed in some athletes with disabilities.

COURSE OUTCOMES:

Thestudentswillbeproficientinplanningmenuswithmacroand micronutrients for varioussports.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3					

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		1

DSC	**EXERCISE ASSESSEMENT IN SPECIAL POPULATION**
	UNIT – I Healthscreening–importanceofpre-

	exerciseevaluation–Medical history, personal history, family history, physical examination, past medical history – for children andelderly **UNIT - II** Exercise assessment in Children's – exercise testing considerations – Hemo dynamic and pulmonary characteristic of children response to exercise –equipment used in testing - exercise equipment -Cycle ergometer – treadmill – ECG recording equipment Comparison of treadmillversuscycleergometerforpediatricexercisetesting– exercise protocol- Indications and Contra indication for stress testing – relative risksforStresstesting– LowerriskandHigherrisk. **UNIT - III** Exercise assessment in Elderly - clinical evaluation - practical considerations of Routine exercise testing- Exercise testing Considerationprognosticassessmentwithexercisetesting– exerciseprotocol–Special consideration for older than 75years. **UNIT - IV** Definition of Preeclampsia – Post patrum –Exercise and pregnancyExercise testing – Exercise assessment in pregnancy –- Pre testing screening - PAR Med-X for Pregnancy-physical activity readiness examination– Patientinformation–Preexercisetestingchecklist- general health status – Status of current pregnancy – activity habits during pregnancy period – Contra indication to exercise to be recommendedbythehealthcareproviderMedicalandsafetyConcernsfor motherandfoetusMaximalexercisetesting– fetalresponsetomaximal exercise – submaximal exercise - Aerobic capacity testing, strength testing. **UNIT - V**

Emergencies – information pertinent to the information report – emergency equipment and supplies for a health/ fitness facility.Sudden cardiacarrest– AutomatedExternalDefibrillators–ImplantableCardio inverterDefibrillatorsandSuddencardiacArrest.Othermedicalc oncerns – First aid kits – Blood borne pathogens – first aid kit for a fitness facility.

COURSE OUTCOMES:

1. Became a specialized personal trainer for special population suchaspregnantwomen,childrenandtheelderly.
2. Analyze and interpret data from an exercisetest.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3					3
2	3					3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	2
2	1	2

EXERCISE AND SPORTS FOR WOMEN

Unit I:

StructuralandPhysiologicaldifferencesbetweenmalean dfemale– Body size & Composition, strength, metabolic function, Bone mass – Muscle mass – Fat mass- Heart – Blood Volume – RBC and respiratory difference –Gonadal hormones and Sportsperformance.

Unit II:

Menstrualcycle–Physiologyofmenstrualcycle–Exerciseduring menstrualcycles–Femaleathletictriad:DisorderofEating-Amenorrhea – osteoporosis, menstrual cycle and Physical performance.

Unit III:

Pregnancy–Physiologicalchangesduringpregnancy–Lactation– Indications and Contraindications to exercise during Pregnancy - Guidelines for exercise during and afterpregnancy.

Unit IV:

Hormonal Disorders - Physiological changes – Pre menopause, MenopauseandPostmenopause-Osteoporosisanditspathophysiologydue to lack of exercise – Effect of exercise to prevent Osteoporosis – Anemia – Iron supplements.

Unit V:

Mechanism of hormone action – Gonadal Hormones - Womenand weighttraining–hormonalresponsestoexercise-Mascularizationdueto exercise, Hormonal effects on fluid and electrolyte balance during exercise–aldosterone–renin-ADH-Dopingandperformance–women participation in contact and non-contactsports.

COURSE OUTCOMES:

1.TheESSforwomenstudentisknowledgeableinthesub-disciplinesof sports science and be able to adopt an inter-disciplinary approach to problem-solve practical situations related to exercise and sports for women.Throughthestudyofthesubject,he/shedevelopstheanaly tical skills to observe, analyse and evaluate practical performance for improvement.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3				3	3

	MAPPING (CO's and PSO's) Course Outcomes (CO) | Program Specific Outcomes (PSO) | | 1 | 1 |
GE	**EXERCISE PHYSIOLOGY**
	Unit- I Structure and functions of heart- cardiac cycle- Blood pressure- cardiac output- Heart Rate- Stroke volume- Structure and Functions of respiratory system-Lung volumes and capacities- BMR- Regulation of body temperature- Physiological responses to Heat and Cold- Effect of exercise on cardiac respiration system. **Unit- II** Types of Muscles- Muscles fiber types- Mechanism of Muscles contraction- Sliding filament theory- structure of Neuron- central neurons-brainandspinalcord-peripheralneurons-AutomaticNs-Motorunit-Actionpotential-depolarisation-Reflexare-proprioceptors-Effectof Exercise on Muscular and NeuronSystem. **Unit- III** Energy Metabolism - ATP- PC System - Glycolytic and Oxidative system- Oxygen debt and deficit- Aerobic and anaerobic training and their effects on Aerobic and Anaerobic System. **Unit- IV** Structure and Secretion of Pituitary gland- Thyroid Gland- Liver- Adrenal Gland and pancreas- Structural and Physiological differences between Male and Female-

Menstrual Cycle- Physiological changes during pregnancy- Guidelines for Exercise during and after pregnancy effect of exercise on Endocrine System.

Unit- V

Immunity- definition and classification- physiology of sleep- Cardiac rhythm- obesity- Exercise perception for obesity- Diabetes mellitus- Exercise Perception- Hyper tension- Exercise Perception- Coronary Heart Disease- Exercise Prescription- Pulmonary Disease- Exercise Prescription.

COURSE OUTCOMES:

1. Demonstrate the sound fundamental knowledge and understandingoftheprinciplesofExercisephysiologyasthey relate to responses and adaptations to physical activity and exercise.
2. Plan,administer,andevaluatewellnessandfitnessprogramsand exercisephysiologytracksbasedinsport,clinical,industrialand corporateenvironment.
3. Demonstrate requisite skills and abilities for meaningful employmentinExercisePhysiologyrelatedareasorpursuehigher studies in the area of ExercisePhysiology.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	3				3
2	3	3				3
3	3	3				3

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

	(CO)			
	1	3		
	2	3		
	3	3		
GE	**SPORTS NUTRITION**			
	Unit- I Basic Nutrition- classification of carbohydrates- Proteins- Essentialand Nonessential – Lipids- classification- Vitamins- classification- Minerals- classifications. **Unit- II** SportsNutrition-AssessmentofNutritionalstatus- carbohydratedietsfor training- Muscles and Liver Glycogen- carbohydrate loading- Carbohydrate intake before, during and afterexercise. **Unit- III** Protein requirement for training for Endurance, Strength- Protein essential for before, during after Exercise- Dehydration- strategies to delay fatigue. **Unit- IV** Nutritional need for Special population- Nutrition need for young and Ageing athletics- Athletics with diabetes- Glucose monitoring duringexercise- Preventing and managing Hypoglycemia- Physical activity for people type with II diabetes. **Unit- V** Dietaryguidelineforeatingright-FoodPlate- Functionalfoodpyramid- PlanningDietsforaerobicandanaerobicsports- Planningforvegetarian athlete and vegan athlete, overweight and obesity, Hyper tension, Coronary Heart Disease and			

Lungdisease.

COURSE OUTCOMES:

1. Provideindividualadviceandguidanceinthear eaofsports nutrition.
2. Designandrunagroupconsultationforathletesabo utsports nutrition.
3. Develop knowledge on sportsnutrition.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3		3	3	3	3
2	3		3	3	3	3
3	3		3	3	3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1		3
2		3
3		3

EXERCISE SCIENCE AND FUNCTIONAL ASSESSMENT

UNIT – I

Diagnostic testing - Pretesting Guidelines and procedure – Laboratory and Field testing – Cardiovascular and Pulmonary assessment – Treadmill and Ergometers – Metabolic measurement equipment – pulmonary function equipment – Electrocardiograph equipment –pulse oximeter – Blood pressureassessment

UNIT – II

Musculoskeletal Function assessment – Electromyography equipment– force platforms - Pressure Sensitive Insoles – IsokineticDynamometers. MagneticResonanceImaging– MagneticResonanceSpectroscopy–Muscle Biopsy EquipmentComputer Tomography – Dual Energy x- ray Absorptiometry.

UNIT – III

Energy Balance Assessment - Measuring energy intake – Measuring energy expenditure - Whole room indirect calorimeter –DoubleLabeled Water– otherAssessmentInstruments–Heartratemonitor–pedometer Accelerometers

UNIT – IV

Measuring Body Composition – Densitometry- Dual Energy x- ray Absorptiometry – Electrical Impedance – Skinfold assessments– Anthropometric measurements.

UNIT – V

Blood collection and analysis – General equipment – Common blood measures –routine check-up – haemoglobin- urine analysis- urea, uric acid and lipid profile.

COURSE OUTCOMES:

1. To consider scope of practice when selecting fitness assessments and interpreting data fromassessments.
2. To Appreciate the historical development of modern fitness assessments,especiallywithregardtotrendsandtechnology.
3. To Appreciate the value of the methods section of a scientific publication.
4. To Appreciate how and why fitness assessments are used in various settings: fitness industry, sports,

clinical, and even basic sciences.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3				3	3
2	3				3	3
3	3				3	3
4	3				3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	2	
2	2	
3	2	
4	2	

GE **FLOOR AND STEP AEROBICS**

UNIT – I

Aerobics - Benefits of Aerobics – Wellness –Music – Music understanding- music tempo variation – cueing – floor – Use of mirror– shoes – stepper –variousheight

UNIT - II

Warm Up – cardio workout - Low Intensity – high intensity - Cool Down–Flexibility–Posture–Duration–Heartrate–useofboargscale (10 points) – talktest

UNIT - III

Rhythmic Aerobics: Variations and Styles – floor aerobics – Marching – Step touch – L- step – V- step – Diamond – Knee lift – Touch out – Grape vine –Turn step – chacha – A – step – arm variation

UNIT - IV

Step Aerobics – Marching – up and down - L- step – V- step – Straddle – Cross over – Turn step – Knee lift – Hop – Jump – Run Run – Arm Variation

UNIT - V

Major muscle groups strengthening – Introducing circuittraining andintervaltraining-BodyToningthroughResistance;Weights,Bands andResistance;

COURSE OUTCOMES:

1. Demonstrate the ability to perform aerobic movements in various combination andforms.
2. Understand and apply the knowledge of basic choreography, music selection and effective groupmanagement.
3. Identify the major muscle groups and their application to aerobics.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3				3	3
2	3				3	3
3	3				3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	

3	1		

GE	**STABILITY AND CORE TRAINING**

UNIT – I

Science of Core stability – Tolerance and capacity – core function anatomy –anterior core muscle – posterior core muscletherapeutic/ corrective exercise – Injury prevention program reducing risk of injury

UNIT – II

AbdomenRevolution-componentsofAbdomenRevolution–back disorders - Back pain - Swayback and Facet Pain -Stenosis -Flat Back - Disc Pain – Spondylolisthesis-Mystery pain – flat belly and Abdomen revolution – osteoporosis and Abdomen exercise – Isometric Abdomen drill

UNIT – III

Spine organisation –Posture control – Breathing – Diaphragm breathing–Lateralbreathing–Activation–Mobilisation-corestability– positions - core strength – powerdevelopment

UNIT – IV

Designing core strengthening programme - Core strength and endurance training for performance – without equipment – with equipment (Swiss ball and Medicine ball) – Functional Training

UNIT – V

Stabilization progression - Hook-lying – hands and knees – face down – Bridging – Plank – sports specific

COURSE OUTCOMES:

1. Applythecoreprinciplestoexerciseonalargestabilitycushion
2. Understandhowtheunstablenatureofthecushioncha llenges stability.
3. Discover how to include proprioceptive challenge into any workout.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3				3	3
2	3				3	3
3	3				3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	
3	1	

GE

TRAINING AND PERFORMANCE

UNIT – I

Definition of training , performance, aerobic training, aerobic system,volume,Intensity–trainingprinciples– overload,specificity, reversibility – influence of Gender, Initial fitness level and Genetics – components of work session – Training to improve aerobic power - Interval training – long slow distance – High Intensity Continuous exercise - Training intensity and improvement in VO2max.

UNIT - II

Definition of Anaerobic training, Anaerobic system, Training for improved Anaerobic power and capacity - ATP – Pc System – Glycolytic System –- muscle adaptation –

adaptation in a Lactic Threshold.

UNIT - III

Definition of strength, muscular fitness, resistance training – classification of strength training – Isometric – Isotonic – Isokinetic – factors involved in muscular adaptation – principles of resistancetraining-physiologicaleffectsofstrengthtraining–neuralandmuscular adaptation to resistancetraining.

UNIT - IV

Definition of Overtraining – Symptoms of overtraining – effect of overtraining – overtraining syndrome – predicting the overtraining syndrome – treating the overtraining syndrome – tapering for peak performance.

UNIT - V

Definition of Retraining , muscular strength, power, muscular endurance, speed, agility, flexibility and cardio respiratory endurance– effect of retraining on muscular strength, muscular endurance, speed, agility, flexibility and cardio respiratory endurance.

COURSE OUTCOMES:

1. ToworkwithhigherefficiencyasExercisePhysiologistor Exercise Trainers.
2. To constructively apply the acquired scientific findings and methodological repertoire in practical training undervarious conditions.
3. To recognize the tendencies of development in their sport and consider them in their trainingprocess.

course outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
1	3	3			3	3
2	3	3			3	3
3	3	3			3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
1	1	
2	1	
3	1	

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
MELAKKOTTAIYUR POST CHENNAI - 600 127
DEPT. OF EXERCISE PHYSIOLOGY AND BIOMECHNANICS
M.Sc., SPORTS BIOMECHANICS AND KINESIOLOGY
(Two years Regular Programme)
CHOICE BASED CREDIT SYSTEM (CBCS)

M.Sc., SPORTS BIOMECHANICS AND KINESIOLOGY

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO-1) Graduate will have successful academic and research career.

PEO-2) Graduates will have employment in public and private sectors towards sports enhancement and resolve sports biomechanical problems based on science, sports injury prevention and fitness related issues.

PROGRAMME OUTCOMES (PO'S)

The post graduates are able to

PO-1) To gain knowledge on anatomy and physiology, kinesiology, biomechanics, techniques of human movement and sports skills, research and statistics, and biomechanical instrumentation and measurement in 2D and 3D with inverse dynamics

PO-2) To apply the principles of mechanics on the human movement and sports skills to enhance the performance and reduce the risk of injury.

PO-3) To analyse the sports skill technique/performance qualitatively and quantitatively using the biomechanical instrumentation and measurement.

PO-4) To gain knowledge in the area of gait analysis and analyse the normal gait and pathological gait.

PO-5) To assess the human body posture and prescribe corrective exercise to correct postural deviations

PO-6) To create a platform for students to engage in sports biomechanics research and pursue higher research degrees

PO-7) To produce an efficient sports bio mechanist to work in research laboratories, sports academies, national teams, and faculty in academic institutions.

PO-8) To produce sports performance analyst to work with sports team's/sports club's/research labs as sports performance analyst.

MAPPING OF PEO'S WITH PO'S

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
PEO 1	X	X	X	X	X	X	X	X
PEO 2	X	X	X	X	X	X	X	X

MSBCT 101	FUNCTIONAL ANATOMY AND PHYSIOLOGY		
	Instruction : 4 hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** **Unit-I** Organization of human body Anatomy and physiology- different levels of anatomy and physiology-Structural and functional organization- six levels of organization- Characteristics of life-six characteristics-Organ systems of the body-Homeostasis: positive and negative feedback-Terminology; anatomical position, supine, prone, directional terminology – body parts and region- body planes. Body cavities-Serous membranes- Cells; structure of cell- Tissues; types of tissues; epithelial tissue, connective tissue, muscular tissue, nervous tissue- membranes. **Unit-II** Skeletal system; functions of skeletal system-cartilage-bone histology; bone matrix, bone cells, woven and lamellar bone, cancellous and compact bone- bone anatomy; bone shapes, structure of long, flat, short, irregular bones-bone development; intramembranous ossification, endochondral ossification- bone growth; growth in bone length and width, growth at articular cartilage, factors affecting bone growthbone remodelling- bone repair-effects of aging on skeletal system-skeletal system gross anatomy; axial skeleton; skull, hyoid bone, vertebral column and thoracic cage-appendiclular skeleton; pectoral girdle and upper limb, pelvic girdle and lower limb. **Unit-III** Articulations and movement Joints, classification of joints; fibrous joints and its types, cartilaginous joints and its types, synovial joints- structure, bursa and tendon and their functions, types of synovial joints- types of movements; gliding movements, angular movements, circular movements and special movements- structure of shoulder joint, elbow joint, hip joint, knee joint, and ankle joint and arches of the foot **Unit-IV** Muscular system (Histology and Physiology) Functions of muscular system, properties of muscle and types of muscle tissue- structure of skeletal muscle; connective tissue covering of the muscle, nerves and blood vessels, muscle fibers- physiology of skeletal muscle fibers, sliding filament theory, neuro muscular junction- types of muscle contractions- energy sources of skeletal muscles; creatine phosphate, aerobic respiration, anaerobic respiration, oxygen deficit and recovery oxygen consumption-slow and fast twitch fibers; effects of exercise-effects aging on skeletal muscle Muscular System Gross Anatomy- origin, insertion, agonist, antagonist, synergist, prime mover and fixate- muscle shapes- muscles of head and neck, trunk muscles-muscles moving vertebral column, thoracic muscles, abdominal wall, pelvic floor and perineum-upper limb muscles; scapular movements, arm movements, forearm movements, wrist, hand and finger movements- lower limb muscles; thigh movements, leg movements, ankle, foot and toe movements. **Unit-V** Functional organization of nervous tissue Functions of nervous system- divisions of nervous system; CNS and PNS- cells of nervous system, neurons and types of neurons- organisation of nervous tissue- electric signals- spinal cord and spinal nerves-structure-reflexes- brain and cranial nerves-development of CNS- structure and functions of brain- integration of nervous system functions. **Reference:** 1. Richard L. Drake et al. Gray's Anatomy for students (3rd Edition), Elsevier,2015. 2. Seeley Stephens Tate. Anatomy & Physiology (8th Edition), McGraw Hill, 2008.		

	3. Valerie C. Scanlon and Tina Sanders. Essentials of anatomy and physiology, F.A. Davis Company, 2015. 4. Francesca Gould. Anatomy, Physiology and Pathology (3rd edition), Nelson Thornes, 2012 5. Kathryn Lutgens et al. Kinesiology (Scientific Basis of Human Motion), Brown and Bench mark, 1992. 6. Donald C. Rizzo. Fundamentals of anatomy and physiology, Delmer, 2001. 7. Clare E. Milner. Functional anatomy for sports and exercise, Routledge, 2008. 8. Martini et al. Fundamentals of anatomy and Physiology (9th Edition), 2012. 9. Robert. S. Behnke. Kinetic anatomy (3rd edition), Human Kinetics, 2006. 10. Christy Cael. Functional anatomy, Lippincott.2010. 11. Byas Deb Ghosh. Human anatomy for students (2nd edition), Jaypee Brother, 2013. **E- resource** www.alison.com https://opentextbc.ca/anatomyandphysiology teachmeanatomy.info http://anatomyatlases.org/atlasofanatomy/plate01/01skullfront.shtml http://www.innerbody.com/image/musfov.html

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students to learn the fundamental concepts and terminology of anatomy and physiology
CO 2	To equip the students to learn (emphasis on Musculo-skeletal system) system of the body
CO 3	To help them to understand the structure and the functions of the body
CO 4	To make them acquire a strong foundation in anatomy which will facilitate the study of biomechanics

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	1	2		1		
2	3	2				1		
3	3	3				1		
4	3	3		1		1		

MSBCT 102 **BASIC BIOMECHANICS**

Instruction : 4 hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit-I

Biomechanics – Sports Biomechanics- branches of biomechanics; statics, dynamics, kinematics, kinetics -Definition - Meaning - Scope - Need and importance of Biomechanics - Historical development of Sports Biomechanics - Scholarly societies-International Journal of sports Biomechanics-International society of Biomechanics-American society of biomechanics-Canadian society of biomechanics-European society of biomechanics-AAPHERD-ACSM-Journals in Biomechanics.

Unit-II

Kinematic concepts for analyzing human movement - Kinematics; linear and angular kinematics- distance, displacement, speed, velocity and acceleration-forms of motion, linear motion, angular motion and general motion- tools for measuring kinematic quantities- common units of kinematic quantities. Kinetic concepts for analyzing human movement- Inertia, mass, force, net force, centre of gravity, weight, pressure, volume, density, specific weight, torque, impulse- common units of kinetic quantities- mechanical loads on the human body; compression, tension and shear force-mechanical stress' torsion, bending and combined loads- scalar, vector, composition and resolution, graphic solutions of vector problems- trigonometric solutions of vector problems- tools for measuring kinetic quantities

Unit-III

Linear kinematics of human movement - Linear kinematics- kinematics of projectile motion; horizontal and vertical components, influence of gravity, influence of air resistance- factors affecting projectile trajectory; projection angle, projection speed, relative height of release, optimum projection conditions, analysing projectile motion, equations of constant acceleration. Angular kinematics of human movement - Angular kinematics- measuring angles-relative and absolute angle-tools for measuring body angles- instant centre of rotation- angular kinematic relationship-; angular distance and displacement, angular speed and velocity, angular acceleration-

relationship between linear and angular motion; linear and angular displacement, linear and angular velocity, linear and angular acceleration

Unit-IV

Linear kinetics of human movement - Newton laws; Law of inertia, law of acceleration and law of acceleration- law of gravitation- mechanical behaviour of bodies in contact; friction, static friction, kinetic friction, coefficient of friction- momentum – impulse- impact- coefficient of restitution- work, power and energy relationship- conservation of mechanical energy- principle of work and energy. Equilibrium and human movement - Torque, moment arm, couple, resultant joint torque, levers; types of levers, anatomical and mechanical levers- equations of static equilibrium- equations of dynamic equilibrium, centre of gravity and location of centre of gravity, location of human body centre of gravity; reaction board, segmental method- stability and balance. Angular kinetics of human movement - Resistance to angular acceleration; moment of inertia, determining moment of inertia, human body moment of inertia- angular momentum; conservation of angular momentum, transfer of angular momentum, change in angular momentum, angular analogues of Newton laws of motion- centripetal force and centrifugal force

Unit-V

Human movement in a fluid medium- The nature of fluids; fluid, relative motion, relative velocity, laminar and turbulent flow, fluid properties- buoyancy; characteristics of buoyant force, Archimedes's principle, centre of volume, floatation- drag, coefficient of drag, skin friction, surface drag, viscous drag, form drag, profile drag, pressure drag, wave drag- lift force, coefficient of lift, foil, Bernoulli principle, angle of attack, lift drag ration- Magnus effect- Propulsion in fluid medium, propulsive drag theory, propulsive lift theory, vortex generation and stroke technique. Basic mathematic and related skills - Negative numbers, exponents, square roots, order of operations, use of a calculator, percentages, simple algebra, measuring angles, trigonometric functions, common units of measurement, anthropometric measurements for the human body.

Reference:

1. Paul Grimshaw et al. Sports & Exercise Biomechanics, Taylor & Francis Group, (2007).
2. Susan J. Hall, Basic Biomechanics, McGraw Hill Education, 2004.
3. Peter McGinnis Biomechanics of Sport and Exercise, Human Kinetics, 2005.
4.Kathryn Lutgens et al. Kinesiology (Scientific Basis of Human Motion), Brown and Bench mark, 1992.
5. Roger Bartlett. Introduction to Sports Biomechanics Analyzing Human Movement Patterns, Routledge, 2007.
6. Roger Bartlett. Introduction to Sports Biomechanics, Spon Press, 1997
7. Knudson Duane V. Fundamentals of biomechanics, Springer, 2007.
8. Tomothy et al. Applied anatomy and biomechanics in sport (2nd edition), Human Kinetics, 2009
9. Steven T. McCaw. Biomechanics for dummies, John Wiley, 2014.
10. Anthony J. Blazevich. Sports Biomechanics (2nd edition), Bloomsbury, 2012.

Web links:
http://www.sportsbiomech.com/aboutsportsbiomech.php
www.isb.com
www.clinbiomech.com

2 **COURSE OUTCOMES: Students are able to**

CO 1	To enable the students to learn the basic concept of biomechanics
CO 2	To make the students to understand kinematic and kinetic concept of human movement
CO 3	To equip the students to learn the principle of aerodynamic and hydrodynamics.
CO 4	To enable the students to acquire the skills of qualitative and quantitative of human movement

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	1			2	1	
2	3	3				2	1	
3	3	3	1			2	1	
4	3	3				2	1	

MSBCT 103	**DYNAMICS OF MOTOR SKILL ACQUISITIONS**		
	Instruction : 4 hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit I

Characteristics of a skilful performance - learned - Efficient - Goal directed - Technical model - Fluent -Aesthetically pleasing- Motor and perceptual skills- Classification of skills - Gross and fine- Open and closed - Discrete, serial and continuous- External and internally paced - Simple or complex - High and low organization- Definition and characteristics of abilities - characteristics: innate, underlying and enduring traits - gross motor and psychomotor abilities.

Unit II

Motor skill development - motor skills- fundamental motor skills- sports specific sills-Theories related to the learning of motor skills - Description of the stimulus-response (S/R) bond and application of related theories - Associationist theories: operant conditioning – shaping behaviour, the use of reinforcement, link to trial and error, linking of the S/R bond - Cognitive theory: work of the Gestaltists – wholeness and insight learning - Observational learning: the work of Bandura – the four elements (attention, retention, motor reproduction, motivation).

Unit III

Reinforcement : Definition and examples of positive reinforcement, negative reinforcement and punishment, as methods of strengthening or weakening the S/R bond - Ways of strengthening the S/R bond through repetition, satisfaction/annoyance, and through physical and mental preparedness- Theories related to motor and executive programmes - Definition as a generalised series of movements: creation of programmes in the long term memory; awareness of the major programmes/sub-routines of a range of motor skills - Open loop control: retrieval of programmes by making one decision, used in quick movements where there is no time for feedback, with examples - Closed loop control: detection and correction of movements during the performance through the use of feedback, with examples - Schema theory: a way of modifying the motor

programme by the use of schema or rules of information- Schmidt's sources of information as recall and recognition schema -Four rules of schema (knowledge of initial conditions, knowledge of response specifications, sensory consequences, movement outcomes) - Examples of the application of the schema theory in teaching and coaching.

Unit IV

Theory of information processing in the performance of motor skills Basic models of information processing: display, sensory information, sense organs, perception, decision making, effector mechanism response and feedback- Memory: basic model of the memory process: selective attention, short term sensory store, short term memory, long term memory - Reaction time : definitions of reaction time, movement time and response time - importance of a short reaction time -factors affecting reaction time, including psychological refractory period, in a range of sporting activities - Feedback - importance and functions of feedback - types of feedback to include: intrinsic and extrinsic, terminal and concurrent, positive and negative, knowledge of performance, knowledge of results- use of practical examples to show how feedback can be used effectively to improve performance.

Unit V

Phases of learning movement skills - Cognitive, associative, autonomous phases of learning - characteristics of each phase and their practical implications- Transfer of learning - definition of transfer of learning – types – Positive transfer – Negative transfer – Proactive and retroactive – Bilateral transfer- Motivation - definition of motivation - extrinsic and intrinsic motivation - effect of extrinsic rewards on intrinsic motivation- Theories related to arousal levels - drive theory -inverted U theory - drive reduction theory

Reference:

1. Honeybourne J. Acquiring Skill in Sport, Routledge, 2006.
2. McMorris T. Acquisition and Performance of Sports Skills, Wiley, 2004.
3. Magill R. Motor Learning, Concepts and Application, McGraw Hill, 2004.
4. Sharp B. Acquiring Skill in Sport, Sports Dynamics, 1992.
5. Williams H and Hodges N. Skill Acquisition in Sport, Routledge, 2004.
6. Paul E. Robinson. Foundations of Scientific Coaching. Routledge. 2010.
7. Don Gordon. Coaching Science. Learning Matters. 2009.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To equip the students to understand the basic of skills acquisitions of sports performance
CO 2	To make them understand the basic of skills and selected sports movement pattern
CO 3	To enable them to understand the link between motor skills, ability, learning and performance
CO 4	To familiarize the students with various theories improving and affecting the sports skills performance

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	1	1		1	1	
2	3	3	1			1	1	
3	3	2	1			1	1	
4	3	2		1		1	1	

MSBCP 101 **Sports Biomechanics and Kinesiology (Practical I)**

Instruction : 3 hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

1. Identification of bones, anatomical landmarks and identification of muscles
2. Movement terminology, joint functions and measuring joint range of function
3. Analysis of fundamental movements, gait and posture

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students to learn the identification of human bones and their landmark.
CO 2	To help the student to understanding the human movements and their planes
CO 3	To equip the students to learn the joint and muscles functions in human body
CO 4	To equip the students to analysis of human fundamental movements, human gait and posture

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	2			1	1	1
2	3	3	2			1	1	1
3	3	3				1	1	1
4	3	3					1	1

MSBCP102 **Techniques of Track & Field Events (Practical I)**

Instruction : 3 hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

1. 100 m sprint, 200 m sprint and 400 m sprint technique
2. Shot put, javelin throw, hammer and discus throw technique
3. Long jump, triple jump, high jump and pole vault technique.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the student to learn the sprinting techniques and their performance
CO 2	To make the student to learn the throwing events and their performance
CO 3	To make the student to learn the jumping events and their performance

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	2	3				2	2	3
2	2					2	2	
3	2	3				2	2	2
4	2					1	2	1

MSB AEC001	**Communicative skills**		
	Instruction : 2hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit I

Listening: Barriers of Listening skill-Approaches to Listening –How to improve Listening exercises. Speaking: Paralanguage: Sounds, stress, intonation- Art of conversation – Presentation skills – Public speaking- Expressing Techniques.

Unit II

Reading: Kinds of Reading – Causes of reading difficulties – Reading strategies – exercises. Writing: Effective writing – Paragraph – Essay- Reports – Letters- Articles – Notices, Agenda & Minutes.

Unit III

Communication: Modes of Communication- Barriers – Interpersonal skills – Negotiation skills – Non- Verbal communication – Etiquettes

Unit IV

Group Dynamic skills: Group Discussion – Team building & Team work – Be a manager or leader – Decision making – creativity – Time & Stress management skills.

Unit V

Interview sills: Types of Interviews – Preparing for interview – Preparing a CV – Structuring the interview - Mock Interview - Quick Tips.

Reference:

1. Second Edition of "Communication Skills" Published by Carrier Skill Library.
2. Effective Communication Skills – A Book of MTD Training.
3. The Language Sound of Language by Michael Dobrovolsky and Francis katamba

2 **COURSE OUTCOMES: Students are able to**

CO 1	To develop communication skills by providing theoretical knowledge of the mechanism of effective communication
CO 2	To impart advanced training in standard pronunciation, word stress and intonation
CO 3	To train students in the correct use of English in a formal way
CO 4	To improve the learners' vocabulary by familiarizing them with the ways of word formation

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	3			3	2	2
2	3	2	3			3	2	1
3	3	2	3			3	2	2
4	3	2	3			3	2	1

Co-curricular Activities	**NSS/SWACHH BHARAT**		
	Instruction : -	**Credits : 2**	**Assessment : -**

1 **SYLLABUS**

1. NSS

A student has to enroll in NSS first year and serve in NSS for at the start of period of two years (120 hours each year) and production of regular certificate; he /she will be awarded two credits.

2. SWACHH BHARAT

A student has to serve for 15 days in village and produce a report signed by village administration officer to acquire the two credits.

COURSE OUTCOMES: Students are able to

CO 1	To make the student to learn the National social serve schemes and their importance in the society
CO 2	To make the students to understanding the importance of clean and green in the living environment

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	1	1				1	2	
2	1					2	1	

MSBCT 201	KINESIOLOGY		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit-I Kinesiology, meaning, history, scope and importance- muscle fiber architecture- uni-joint, two joint and multi joint muscles factors affecting muscular force generation; force velocity relationship, length tension relationship, electromechanical delay - functional role of skeletal muscles- structure of shoulder joint and shoulder girdle - origin, insertion and action of shoulder joint muscles and shoulder girdle muscles- - common injuries of the shoulder- Exercise program to stretch and strengthen the shoulder joint muscles. Unit-II Structure of elbow joint- and wrist joint - Origin, insertion and action of elbow joint and wrist joint muscles- common injuries of elbow and wrist- Exercise program to stretch and strengthen the elbow joint and wrist joint muscles. Unit-III Structure of pelvic girdle and hip joint - Origin, insertion and action of pelvic girdle and hip joint muscles- common injuries of hip joint - Exercise program to stretch and strengthen the pelvic girdle and hip joint muscles. Unit-IV Structure of knee joint and ankle joint - Origin, insertion and action of knee and ankle joint muscles- common injuries of knee and ankle - Exercise program to stretch and strengthen the knee and ankle joint muscles joint muscles Unit-V Structure of spinal column - Origin, insertion and action of spinal column muscles- Common injuries of spinal column-Exercise program to stretch and strengthen the spinal column muscles joint muscles. Reference: 1. Kathryn Lutgens et al. Kinesiology (Scientific Basis of Human Motion), Brown and Bench mark, 1992. 2. Robert Frost. Applied Kinesiology. Berkeley.2002. 3. Christy Cael. Functional anatomy, Lippincott.2010. 4. Joseph.E. Muscolino. The Muscular System Manual (3rd edition). Elsevier, 2010. 5. Pamela K Lavange & Synthia C. Norkin. Joint structure & function. F.A. Davis company, 2005. 6. Donald A. Newmann. Kinesiology of Musculoskeletal System. Mosby. 7. Bernard Kingston. Understanding muscles. Chapman & Hall 8. Susan J. Hall, Basic Biomechanics, McGraw Hill Education, 2004. 9. Lynn S. Lippert. Clinical kinesiology and anatomy (4th edition). F.A. Davis Company. 2006. 10. Roger Bartlett, Introduction to Sports Biomechanics Analyzing Human Movement Patterns, Routledge, 2007.		

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make students understand the in foundations of kinesiology
CO 2	To make them aware about the fundamental movement of human body
CO 3	To make them learn the role and functions of muscles
CO 4	To enable them to learn the exercise program to strengthen and stretch the muscles
CO 5	To make them to acquire a strong foundations in kinesiology

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	2			1	1	1
2	3	3	1			2	1	1
3	3	3	1			1	1	1
4	3	3				1	1	1
5	3	3				1	1	1

MSBCT 202	**BIOMECHANICAL INSTRUMENTATION AND MESUREMENT**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit-I

Spots and exercise biomechanist- role and functions- research, scientific support services, education, consultancy- Analysis services; qualitative analysis, quantitative analysis- Procedures; ethics, pre analysis preparation, detailed reporting.

Unit-II

Motion analysis using video- equipment considerations- video cameras, picture quality, frame rate, shutter speed, manual iris and low light sensitivity, gen lock capability, recording medium, recording and storage device, specification of computer, capture software, video playback system, coordinate digitiser- data collection procedures- two dimensional and three dimensional video recording- reporting a video motion analysis study.

Unit-III

Motion analysis using online systems - Equipment considerations- data collection procedures- processing, analysing and presenting motion analysis data- reporting a motion analysis study. Force and pressure measurement - Force platform- construction and operation- technical specification- calibration- applications- Pressure distribution measurements- reporting a force or pressure analysis study.

Unit-V

Surface electromyography- equipment considerations- data collection procedures; electrode configuration, location and orientation, skin preparation, cross talk- sampling- processing, analysing and presenting EMG- reporting an EMG study.

Unit-V

Isokinetic Dynamometry-Applications of isokinetic dynamometry- mechanical basis of isokinetic dynamometry measurements- isokinetic equipment considerations-

isokinetic experimental and data collection procedures- processing, analysing and presenting isokinetic data- reporting an isokinetic study.

Reference:
1. Paul Grimshaw et al. Sports & Exercise Biomechanics, Taylor & Francis Group, 2007.
2. Susan J. Hall. Basic Biomechanics, McGraw Hill Education, 2004.
3. Peter McGinnis. Biomechanics of Sport and Exercise, Human Kinetics, 2005.
4. Kathryn Lutgens et al. Kinesiology (Scientific Basis of Human Motion), Brown and Bench mark, 1992.
5. Roger Bartlett. Introduction to Sports Biomechanics Analyzing Human Movement Patterns, Routledge, 2007.
6. Knudson, Duane V. Fundamentals of biomechanics, Springer, 2007.
7. Vladimir, Medved. Measurement of human locomotion, CRC Press, 2001
8. John Mc Lester, & Peter St. Pierre, Applied biomechanics, Thompson, 2008.
9. Carl J. Payton & Roger M. Bartlett, Biomechanical evaluation of movement in sports and exercise, Routledge, 2008.
10. Roger Bartlett. Introduction to Sports Biomechanics, Spon Press, 1997

2 **COURSE OUTCOMES: Students are able to**

CO 1	To familiarize the students with basic electronic devices
CO 2	To introduce the students the basic properties of high speed cameras and calibrations
CO 3	To enhance their ability to asses and analyse human locomotion
CO 4	To provide students with a strong mechanical foundation to acquire the professional competence, knowledge and skills
CO 5	To study electromyography and force platform used for kinetic quantity measurement
CO 6	To provide knowledge about advanced equipment and their significant practical applications in biomechanics

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	1	1	3			2	1	2
2	1	1	3			2	1	2
3	1	1	3			2	1	3
4	1	1	3			2	1	3
5	1	1	3			2	1	3
6	1	1	3			2	1	3

MSBCT 203	PALPATION TECHNIQUE AND KINANTHROPOMETRY		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit-I Palpation technique- need and importance, palpation of bones, bony edges and prominence, muscle bellies, tendons, and ligaments. Palpation of shoulder complex, elbow complex, and hand. Palpation of hip and groin, knee joint, foot, spine and pelvis. Unit-II Anthropometry – history, need, scope and importance- preliminary considerations- subject- data collection- anthropometry equipment. Anthropometry profile- human body composition- densiometry; under water weighing, dual energy X ray absorptiometry, skin fold method, bioelectrical impedance. Anthropometric model - adipose tissue, muscle, bone. Unit-III Anthropometric land marks – definitions, vertex-supra sternale, epigastrale, thelion, acromiale, radiale, stlion, dactylion, iliocristale, iliospinale, trochanterion, tibial mediale and laterale. Heath carter somatotype method - anthropometric and photoscopic somatotype methods- endomorphymesomorphy- ectomorphy- Anthropometric landmarks- reference land marks- marked land marks- basic measurements. Skinfold measurement – locations of skinfold sites - cheek-chin-pectoral, axilla, abdomen iliac crest, supraspinale, subscapular, triceps, biceps, patella-mid thigh, proximal calf, medial calf. Waist hip ratio- body mass index- fat free index. Unit-IV Anthropometric measurement – length and breadth measurement – technique and procedures- Length - Acromiale-Radiale length (arm), Radiale-Stylion length (forearm), Mid-stylion-Dactylion length (hand), Iliospinale Height (obtained height plus box height), Trochanterion Height (obtained height plus box height), Trochanterion-Tibiale Laterale length (thigh), Tibiale Laterale Height (leg), Tibiale Mediale-Sphyrion Tibiale (tibia length), Foot length. Breadths - Biacromial breadth, Biiliocristal breadth, Transverse Chest breadth, Anterior-Posterior Chest Depth, Biepicondylar Humerus breadth, Wrist breadth, Hand breadth, Biepicondylar Femur breadth, Ankle breadth, and Foot breadth. Unit-V Anthropometric measurement - Girth- Head Girth, Neck Girth, Arm Girth (relaxed), Arm Girth (flexed and tensed), Forearm Girth, Wrist Girth, Chest Girth, Waist Girth, Omphalion Girth (abdominal), Gluteal Girth (hip), Thigh Girth (upper), Mid-Thigh Girth, Calf Girth, and Ankle Girth. Heath carter somato typing, testing and classification procedure - report generation technique. Reference: 1. Bernhard Reichert. (2015). Palpation technique (2nd Edition), Thieme Publishers, Delhi. 2. Roger Eston, Kinanthropometry and Exercise Physiology Laboratory Manual: Tests, Procedures and Data: Volume One: Anthropometry (Volume 1) 3rd Edition. 3. ISAK Kinanthropometry manual Web link: https://www.isak.global/WhatIsIsak/#GoToKina		

2 **COURSE OUTCOMES: Students are able to**

CO 1	To learn the palpation technique of bones, bony landmarks, skeletal muscles and tendons of human body
CO 2	To understand the concepts of human body measurement
CO 3	To identify the bony landmarks of human body
CO 4	To acquire the technique of measuring human body segments length, girth, and breadth
CO 5	To learn the technique of measuring percent body fat using skin fold measurement
CO 6	To assess and categorize the human body into endomorph, mesomorph and ectomorph

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	2			1	1	
2	3	2	2			1	1	
3	3	2	2			1	1	
4	3	3	2			1	1	
5	3	3	2			1	1	
6	3	1	2			1	1	

MSBCP 201	**Sports Biomechanics and Kinesiology (Practical - II)**		
	Instruction : 3 hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

1. Shoulder complex
2. Elbow and wrist
3. Hip and spine.
4. Knee and ankle

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students to learn the identification of human bones and their landmark.
CO 2	To help the student to understanding the human movements and their planes
CO 3	To equip the students to learn the joint and muscles functions in human body
CO 4	To equip the students to analysis of human fundamental movements, human gait and posture

3

MAPPING (CO's and PO's)

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	3			1	1	1
2	3	2	3			1	2	1
3	3	2	3			1	2	1
4	3	2	3			1		1

MSBCP 202

Techniques of Track & Field Events (Practical - II)

Instruction : 3 hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1

SYLLABUS

1. 100 m, 110 m hurdles and 400 m hurdles
2. Middle and long distance events and relay events
3. Basketball, handball, and volley ball skills and technique

2

COURSE OUTCOMES: Students are able to

CO 1	To make the student to learn the hurdles techniques and their performance
CO 2	To make the student to learn the distance running events and their performance
CO 3	To make the student to learn the sports and games and their performance

3

MAPPING (CO's and PO's)

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	1			1	2	1
2	3	3	1			1	2	1
3	3	3	1			1	2	1

MSB SEC001

Fundamentals of Information Technology

Instruction : 2 hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1

SYLLABUS

Unit I

Introduction to Computers - Computer – Meaning and definition – types of computer- Components of computer –Languages – LAN and WAN - Application software used in Sports Biomechanics and Kinesiology .Basic Computer Organization: input and output devices –Storage Devices – Software and Hardware.

Unit II

Storage Fundamentals - Primary Vs Secondary Storage, Data storage & retrieval methods. Primary Storage: RAM ROM, PROM, EPROM, EEPROM. Secondary Storage: Magnetic Tapes, Magnetic Disks. Cartridge tape, hard disks, Floppy disks Optical Disks, Compact Disks, Zip Drive, Flash Drives.

Unit III

Software: Types of software - System Software: Operating System, Utility Programs Programming Language: Machine Language, Assembly Language, High Level Language their advantages & disadvantages. Application software and types: Word Processing, Spread Sheets Presentation, Graphics, DBMS software.

Unit IV

Operating System & Data Communication - Functions, Measuring System Performance, Assemblers, Compilers and Interpreters. Batch Processing, Multiprogramming, Multi Tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux. Communication Process, Data Transmission speed, Communication Types (modes), Data Transmission Medias, Modem and its working, characteristics, Types of Networks, LAN Topologies, Computer Protocols, Concepts relating to networking.

Unit V

E mail: meaning – need- opening email account, inbox and outbox, creati,ng and sending mails, replying and forwarding mail, attachment files- Skype- installation procedure- opening Skype account- video and audio conversation, voicemail, chat , group video call, send files, screen sharing, calls to mobile and landline. LinkedIn - opening LinkedIn account- profile, headlines, post & activity, jobs, chat, group conversation. Twitter - opening account- creating profile, tweet, Re tweet, follow and hash tag- E-learning - MOOC - coursera.

Reference:

1. P.J.Barker, Walter Thombson. Basic computer studies, Oliver & Boyd, 1970.
2. Anita Goel. Computer fundamentals, Pearson education India, 2010.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To understand basic concepts and terminology of information technology
CO 2	To understanding of personal computers and their operations
CO 3	To acquired basic skills and be able to use the main personal computer applications
CO 4	To learn and explore latest information technology

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	2			1	2	1
2	3	3	2			1	2	1
3	3	3	2			1	2	1
4	3	3	2			1	2	1

<table>
<tr><td>Co-curricular Activities</td><td colspan="3">MOOC</td></tr>
<tr><td></td><td>Instruction : -</td><td>Credits : 2</td><td>Assessment : -</td></tr>
<tr><td>1</td><td colspan="3">SYLLABUS

A student has to enroll any relevant MOOC course and submit the completion certificate to the department to acquire the two credits</td></tr>
<tr><td>2</td><td colspan="3">COURSE OUTCOMES: Students are able to

<table><tr><td>CO 1</td><td>To make the student to learn the multiskills related to curriculum from the web resources in international standard</td></tr><tr><td>CO 2</td><td>To make the students to understanding the importance of web learning and their importance</td></tr></table></td></tr>
<tr><td>3</td><td colspan="3">MAPPING (CO’s and PO’s)

<table><tr><td rowspan="2">course outcomes</td><td colspan="8">Program Outcomes</td></tr><tr><td>PO 1</td><td>PO 2</td><td>PO 3</td><td>PO 4</td><td>PO 5</td><td>PO 6</td><td>PO 7</td><td>PO 8</td></tr><tr><td>1</td><td>3</td><td>1</td><td>2</td><td>1</td><td></td><td>1</td><td>1</td><td>1</td></tr><tr><td>2</td><td>3</td><td>3</td><td>3</td><td></td><td>1</td><td>3</td><td>3</td><td>3</td></tr></table></td></tr>
<tr><td>MSBCT 301</td><td colspan="3">MECHANICS OF TRACK AND FIELD PERFORMANCE</td></tr>
<tr><td></td><td>Instruction : 4hr / week</td><td>Credits : 4</td><td>Assessment : 25+ 75=100</td></tr>
<tr><td>1</td><td colspan="3">SYLLABUS
.
Unit-I
Track events (Sprint - 100m, 200m and 400m) History, legends, world record, skills, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder’s performance. Types of Crouch Start – Bunch start-Medium start-Elongated start - Running – Stride length - Take-off distance - Flight distance - Landing Distance - Stride Frequency - Action of leg - Supporting phase-Driving phase - Recovery phase - Action of arms - Action of trunk - Finish - Types of Finish - Start - Running – Finish- Spikes – Types of spikes - Starting block

Unit-II
Hurdles (100m, 110m and 400m hurdles) History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder’s performance. Hurdles – High hurdles-Approach-take-off-Flight-Landing- Running between hurdles-Intermediate hurdles-Low hurdles

Unit-III
Throws (Shot-put, hammer, discus and javelin) History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder’s performance. Shot-put - Shot-put - O’Brien style-Initial stance-Glide-Delivery-Reverse - Rotation style-distance prior to release-Physique-Position-Distance after release-Height of release-Speed of release-Forces exerted -Angle of release –Air resistance - Advantages and Disadvantages of O’Brien and Rotation techniques. Hammer - Hammer Throw – Preliminary swing-The first turn-The second turn-The third turn-The delivery-Air</td></tr>
</table>

resistance Speed of release-Angle of release-Height of release. Discus - Discus Throw – Initial stance –Preliminary swings-Transition-Turn-Delivery-reverse-Aerodynamic factors. Javelin-Javelin Throw - Types of Grip –Carry- Run – Transition, Throw, and RecoverySpeed, Angle, Height of release-Aerodynamic factors influencing flight-Advantages and Disadvantages of different Grips- Aerodynamic Javelin.

Unit-IV

Jumps (Long jump, Triple jump, High jump and Pole vault) History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. Long Jump-Hang style - Hitch Kick style - Approach run – Take-off - Flight in the Air - Landing – Take-off distance-Flight distance-Speed, angle, height of take off-air resistanceAdvantages and Disadvantages of different styles. Triple Jump - Hop - Step and Jump- Approach Run – Take-off - Flight in the Air – Landing. High jump- straddle- fosbury flop- run up- take off- bar clearance- landing- height of take – off- physique – body composition at take off- flight height- vertical velocity at take off- clearance height- body position at peak- pole vault- carry- take off- clearance- landing- take off- swing height- clearance height- kinetic energy at take off- strain energy at take off- work done during ascent- mechanical energy losses - kinetic energy- usage and advantage of fiberglass- analysis of recent world pole vaulters.

Unit-V

Middle and Long Distance and Relays (800m, 1500m, 5000m, 10000m , and 4x100m and 4x400m) History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance.

Reference:

1. The Sports Book (3rd Edition). D.K publishers.
2. Will Freeman. Track & Field Coaching Essentials. Human Kinetics. 2014.
3. Joseph. L. Rogers. USA Track & Field Coaching manual. Human Kinetics.2000.
4. Ed House Wright. Winning track & field for girls. Mountain Lion. 2010.
5. Tom Ecker. Basic Track & Field Biomechanics (4th edition). 2015
6. The Olympic and World Records book, Imagine Publishing, 2016.
7. James G. Hay, Biomechanics of Sports Technique, Prentice-Hall, 1993.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To equip the students to learn fundamental skills and techniques of track and field events
CO 2	To familiarize with mechanical principles involved in skills and technique track and field events
CO 3	To understand and conduct the qualitative and quantitative analysis in track and field events
CO 4	To acquire the skills of reviewing the current research studies

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	2	2	3			1		
2	2	3	3			1		
3	2	3	3			1		
4	2	3	3			1		

MSBCT 302	MECHANICAL ANALYSIS OF SPORTS AND GAMES – PART I		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit-I Basketball and Handball History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Basketball- Qualitative and Quantitative analysis- Dribbling, types of passes - Chest pass - Overhead pass - Bounce pass - Baseball pass, Types of shooting-Set shotJump Shot-Layup shot. Handball - Dribbling-Passing-types of passing- Overhead pass-Types of shot –Jump shot - Playing surfaces-Types Unit-II Volleyball and Kabaddi History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews-Volleyball- Qualitative and Quantitative analysis- Serve, Types, Forearm pass Setting, Attack, Block, Floor defense - Kabaddi- offensive and defensive skills- match analysis. Unit-III Tennis and Table tennis History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Tennis-Qualitative and Quantitative analysis- Service, types of service- Rally – fore hand rally-Back hand rally-offensive and defensive techniques – Tennis Rackets –Types- Playing surfaces- Table tennis- Qualitative and Quantitative analysis-Grip, Stance, Footwork, Forehand drive, Backhand drive, Backhand push, Forehand push, Serve, Return of serve, Basic strokes-Drive, Push, Block, Smash; Advance stroke – Loop, Chop, Flip and Lob Unit-IV Badminton and Squash History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews – Badminton - Qualitative and Quantitative analysis - grip, foot work, service and types; short, flick, high , drive - clears, drop shot, smash, drive, net play - Squash- Qualitative and Quantitative analysis, Racket Grip, Squash Swing (Forehand swing and back hand swing) Unit-V Swimming History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews-Swimming - Qualitative and Quantitative analysis – Free style, Front crawl, Butterfly, Breast stroke, and Back crawl. Reference: 1. Hay, J. (1993). The Biomechanics of Sports Techniques, Benjamin Cummings. 2. Barth/Dietz. Learning swimming, Meyer & Meyer, 2002. 3. Cathy McGee, Coaching Basketball-Technical and Tactical skills, Human Kinetics, 2004. 4. Karen Palacios Jansen. Golf fitness. Taylor trade publishers, 2011. 5. Janusz Czerwinski & Frantisek Taborsky. Basic handball. European Handball Federation. 1997. 6. Renstrom. Hand book of Sports Medicine and Science Tennis. Blackwell science. 2002. 7. Philip Yarrow & Aiden Harrison. Squash steps to success (2nd edition). Human Kinetics. 2010.		

8. Richard McAfee. Table tennis-Steps to success. Human Kinetics. 2009.
9. John Edwards. Badminton. Crow wood. 2014.
10. Brahms. Badminton. Meyer & Meyer. 2009.
11. Barth/Nadman. Learning field hockey. Meyer & Meyer. 2005.
12. Robertson .E Gordon D et al. Research Methods in Biomechanics. New York: Human

2 **COURSE OUTCOMES: Students are able to**

CO 1	To provide the acquaintance about the history of games, legends, skills and technique
CO 2	To recognize the mechanical principles involved in various skills of a game
CO 3	To acquire the skills with conducting research and evaluate the data on particular skill and technique in the relevant game
CO 4	To enable the students to learn to prepare standard biomechanical analysis report.

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	2			1	1	1
2	3	2	2			1	1	2
3	3	2	2			1	1	2
4	3	2	3			1	1	2

MSBCT 303 **RESEARCH METHODS AND STATISTICAL PROCESS IN SPORTS SCIENCES**

Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

UNIT-I

Fundamentals of Research- Meaning and Definition of Research, Scope of Research in sports sciences, Qualities and Characteristics of Scientific Research - Criteria for locating and selecting a research problem - Delimitations and Limitations of a problem- Hypothesis and its formulation - Sampling- Sampling and Population, Sampling Techniques - Characteristics of a good sample - Sampling errors- Types of Research based on purpose – Basic research, Applied research, Action research – Types of research based on methods – Descriptive research, Experimental research.

UNIT–II

Variables - Independent, Dependant, Extraneous and Intervening, Experimental, Control variables. Research design – Types of Research design – Single group design, Repeated measures design, Static group comparison, Random groups design, Post-test only random group design, Related groups design, Rotation group design, Quasi experimental design and Factorial design - Methods of Data Gathering and Sampling – Survey, Questionnaire, Interview, Case study, Observation, Opinionnaire.

UNIT-III

Chapterization of Thesis / Dissertation - Front Materials, Body of thesis, Back materials, Method of Writing research proposal, Thesis / Dissertation - Method of writing abstract, full paper for presenting in a conference, publishing in journals, Mechanics of writing Research Report, APA referencing style, Plagiarism.

UNIT- IV

Introduction to statistics types, classification and basic concepts of statistics – Levels of measurement - Measures of central tendency – Mean Median and Mode – Measures of variability - Range, Mean deviation Quartile Deviation and standard deviation. Introduction to Normal distribution – Normal curve – Characteristics of Normal Curve – Properties of Normal curve - Testing of Hypothesis: Hypothesis – Type I & II error- Parametric and Non parametric statistics.

UNIT- V

Test of significance of a single Mean – Difference between two means for small and large sample tests – paired t – test for difference of mean. One way and two way analysis of variance – Post hoc tests - Scheffe's, Newman, Duncan, Tukey – Analysis of covariance. Pearson product moment correlation – Rank order correlation – Bi-serial Correlation-bhi coefficient - Detrahoric correlation- Partial and Multiple correlation – Chi square – contingency coefficient - SPSS Package – Introduction and application – creating, saving and opening a data file – Data entry and analysis of descriptive statistics, dependent and independent t-test, one way and two way ANOVA, ANCOVA, Repeated Measure and correlation – Naming the variables – editing the output file.

Reference:

1. Clarke, David H. Clarke, Harrison H. Research Process in Physical Education, New Jersey: Prentice Hall Inc. 1984.
2. Jerry R. Thomas, Jack K. Nelson and Stephen J. Silverman., Research Methods in Physical Activity (5th Ed), New York: Human Kinetics. 2005.
3. Chris Gratton and Ian Jones., Research Methods for Sports Studies, London: Routledge, Taylor & Francis Group, 2004.
4. John W. Best and James V. Kahn., Research in Education (9th Ed.,), New Delhi: Prentice Hall of India Pvt. 2006.
5. Robertson .E Gordon D et al. Research Methods in Biomechanics. New York: Human Kinetics. 2004.
6. Darren George & Paul Mallery. IBM SPSS Statistics 23 step by step. Routledge. 2016.
7. Kathleen et al. An introduction to statistical analysis in research. Wiley. 2018.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To equip students with a basic concepts of research
CO 2	To enable the students to learn the sampling techniques
CO 3	To enable students to chose the most appropriate research method / design to address a particular research question
CO 4	To equip the students to prepare a research proposal for grants
CO 5	To enable the students to prepare a research thesis/report/article for a journal
CO 6	To enable the students to learn the basic concepts of statistics
CO 7	To acquire the skills of parametric and non parametric statistical methods and apply the appropriate technique for a research data analysis

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	1	1	1	3	3	3
2	3	2	1	1	1	3	3	3
3	3	2	1	1	1	3	3	3
4	3	2	1	1	1	3	3	3
5	3	2	1	1	1	3	3	3
6	3	3	1	1	1	3	3	3
7	3	3	1	1	1	3	3	3

MSBCP 301	**Sports Biomechanics and Kinesiology (Practical III)**		
	Instruction : 3hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

1. Video camera basic and biomechanics software tools
2. 2D and 3D analysis procedures
3. Biomechanics laboratory set up model

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students to learn the video cameras and its operations
CO 2	To help the student to understanding the biomechanical software tools for human movement analysis
CO 3	To equip the students to 2D and 3D analysis procedure
CO 4	To equip the students to biomechanical laboratory setup

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	3			2	1	3
2	3	3	3			2	1	3
3	3	3	3			2	1	3
4	3	3	3			2	1	3

MSBCP 302	**Technique of Sports and Games skills (Practical III)**		
	Instruction : 3hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

1. Kabaddi, tennis and table tennis skills and technique
2. Badminton, squash and swimming skills and technique
3. Hockey, football and cricket skills and technique

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the student to learn the kabaddi techniques and their performance
CO 2	To make the student to learn the Racquet events and their performance
CO 3	To make the student to learn the hockey, football cricket, swimming techniques and their performance

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	3			2	1	3
2	3	3	3			2	1	3
3	3	3	3			2	1	3
4	3	3	3			2	1	3

MSBAEC 002	**Personality Development**		
	Instruction : 2hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit I

Introduction to Personality Development - The concept personality- Dimensions of theories of Freud & Erickson- personality – significant of personality development. The concept of success and failure: What is success? - Hurdles in achieving success - Overcoming hurdles - Factors responsible for success – What is failure - Causes of failure. SWOT analyses.

Unit-II

Attitude & Motivation - Attitude - Concept - Significance - Factors affecting attitudes - Positive attitude - Advantages –Negative attitude - Disadvantages - Ways to develop positive attitude - Difference between personalities having positive and negative attitude. Concept of motivation - Significance - Internal and external motives - Importance of self-motivation- Factors leading to demotivation.

Unit-III

Self-Esteem - Term self-esteem - Symptoms - Advantages - Do's and Don'ts to develop positive self-esteem – Low selfesteem - Symptoms - Personality having low self esteem - Positive and negative self-esteem. Interpersonal Relationships – Defining the difference between aggressive, submissive and assertive behaviours - Lateral thinking.

Unit -IV

Other Aspects of Personality Development - Body language - Problem-solving - Conflict and Stress Management - Decision-making skills -Leadership and qualities of a successful leader - Character-building -Team-work - Time management -Work ethics – Good manners and etiquette.

Unit-V

Employability Quotient - Resume building- The art of participating in Group Discussion – Acing the Personal (HR & Technical) Interview -Frequently Asked Questions - Psychometric Analysis - Mock Interview Sessions.

<table>
<tr><td></td><td>Reference:
1. Hurlock, E.B (2006). Personality Development, 28th Reprint. New Delhi: Tata McGraw Hill.
2. Stephen P. Robbins and Timothy A. Judge(2014), Organizational Behavior 16th Edition: Prentice Hall.
3. Andrews, Sudhir. How to Succeed at Interviews. 21st (rep.) New Delhi.Tata McGraw-Hill
1988.
4. Heller, Robert. Effective leadership. Essential Manager series. Dk Publishing, 2002
5. Hindle, Tim. Reducing Stress. Essential Manager series. Dk Publishing, 2003
6. Lucas, Stephen. Art of Public Speaking. New Delhi. Tata - Mc-Graw Hill. 2001
7. Mile, D.J Power of positive thinking. Delhi. Rohan Book Company, (2004).
8. Pravesh Kumar. All about Self- Motivation. New Delhi. Goodwill Publishing House. 2005.
9. Smith, B . Body Language. Delhi: Rohan Book Company. 2004</td></tr>
<tr><td>2</td><td>COURSE OUTCOMES: Students are able to
<table><tr><td>CO 1</td><td>To develop the personality and life skills</td></tr><tr><td>CO 2</td><td>To help the students understand basic leadership qualities and personality traits</td></tr><tr><td>CO 3</td><td>To make students understand how setting goals in life is important</td></tr><tr><td>CO 4</td><td>To develop all-round personalities with a mature outlook to function effectively in different circumstances</td></tr><tr><td>CO 5</td><td>To become self-confident individuals by mastering inter-personal skills, team management skills, and leadership skills</td></tr></table></td></tr>
<tr><td>3</td><td>MAPPING (CO’s and PO’s)
<table><tr><td rowspan="2">course outcomes</td><td colspan="8">Program Outcomes</td></tr><tr><td>PO 1</td><td>PO 2</td><td>PO 3</td><td>PO 4</td><td>PO 5</td><td>PO 6</td><td>PO 7</td><td>PO 8</td></tr><tr><td>1</td><td>3</td><td>2</td><td>1</td><td></td><td></td><td>2</td><td>3</td><td>2</td></tr><tr><td>2</td><td>3</td><td>2</td><td>1</td><td></td><td></td><td>2</td><td>2</td><td>1</td></tr><tr><td>3</td><td>3</td><td>2</td><td>1</td><td></td><td></td><td>2</td><td></td><td>3</td></tr><tr><td>4</td><td>3</td><td>2</td><td>1</td><td></td><td></td><td>2</td><td></td><td>1</td></tr></table></td></tr>
<tr><td>Co curricular activities</td><td colspan="3">Internship</td></tr>
<tr><td></td><td>Instruction : -</td><td>Credits : 2</td><td>Assessment : -</td></tr>
<tr><td>1</td><td>SYLLABUS

INTERNSHIP
A student has to attend the internship programme for a period of two weeks in the summer vacation of first year. He/she will be visiting the established sports biomechanics laboratories to gain hands on experience and submit the internship report in the department at the start of third semester to acquire two credits.</td></tr>
</table>

2 **COURSE OUTCOMES: Students are able to**

CO 1	To enable the students to learn the basic skills and techniques of sports and games
CO 2	To learn and apply the mechanical principle on the technique of sports skill
CO 3	To understand the technique of qualitative and quantitative analysis
CO 4	To equip the students to carryout 3D analysis on sports skills and generate a valid report

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2		1	2	3		
2		2	3				1	2
3	3			1	1	3	1	
4	3	3	2		2		1	1

MSBCT 401	**MECHANICS OF SPORTS AND GAMES SKILLS II**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit-I

Hockey and football History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Hockey- Qualitative and Quantitative analysis –Dribbling- Pushing – Scooping-slap shot-Drag push and Drag flick- Hockey Sticks- Types of sticks- Playing surfaces - Football- Qualitative and Quantitative analysis - Kicking –instep kick-inside of the foot kick- passing-inside of the foot pass- Receiving -Throw in- Dribbling – Heading-Volley.

Unit-II

Cricket History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Cricket- Qualitative and Quantitative analysis - batting: forward defense, backward defense, drives, cut, pull, and sweep - Bowling: Pace bowling, types and technique; medium pace, Spin bowling: types, leg spin, off spin and their improvisation – Fielding: catching, ground fielding, close and deep fielding- Wicket keeping.

Unit-III

Boxing and fencing History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Boxing-Qualitative and Quantitative analysis- Foot work- a) Stand-up base b) Cross footwork c) Circling; Punches - a) Jab b) Cross c) Hook d) Uppercut; Blocks, parries and evasive techniques - a) Catch b) Side parry c) High front cover d) Low front cover e) Hook / side cover f) Shoulder roll g) Slip h) Duck i) Bob and weave - Fencing- Qualitative and Quantitative analysis- Lunge (attacking) - flunge (saber fencing) - Passatta sotto (movement with a twist) - Parry (defensive move) - Counter attack (attack) - Riposte (counter attack) - Remise (series of attack) - Beat (attack) – Feint.

Unit-IV

Gymnastics History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Men - Qualitative and Quantitative analysis -Floor exercise, parallel bar, horizontal bar, vaulting table. pommel horse and Roman rings – Women - Qualitative and Quantitative analysis -Uneven bars, Floor exercise, Balance beam and Vaulting table

Unit-V

Golf and cycling History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Golf - Qualitative and Quantitative analysis - carry-speed of Release-Direction of Release-Height of Release-Air resistance- The Run-Putting-Techniques-Grip-Stance-The swing-back swing-Down Swing-Impact-Follow through - Cycling- analysis of velodrome and outdoor cycling events.

Reference:

1. Hay, J. (1993). The Biomechanics of Sports Techniques, Benjamin Cummings.
2. Martin Toms. Routledge International book of gold science, Taylor & Francis, 2018.
3. Emeric Arius. Biomechanics of human motion (2nd edition). CRC Press. 2017.
4. Elaine Cheris. Fencing steps to success. Human Kinetics. 2002.
5. Gabi Amzaleg. Boxing technique. Create Space Independent Publishers. 2018.
6. Gary Blower. Boxing technique tactics skills. Crowood. 2012.
7. Rodrigo R. Bini & Felipe P. Carpes. Biomechanics of cycling. Springer.2014.
8. Robertson .E Gordon D et al. Research Methods in Biomechanics. New York: Human Kinetics. 2004

2 **COURSE OUTCOMES: Students are able to**

CO 1	To enable the students to learn the basic skills and techniques of sports and games
CO 2	To learn and apply the mechanical principle on the technique of sports skill
CO 3	To understand the technique of qualitative and quantitative analysis
CO 4	To equip the students to carryout 3D analysis on sports skills and generate a valid report

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	2	3	3			2	1	2
2		3	3			1	1	2
3	2	3	3			1	1	2
4	1	3	3			2	1	2

MSBCT 402	HUMAN GAIT		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit-I Fundamentals of gait - Meaning of gait, gait cycle divisions, Rancho Los Amigos gait terminology. Gait parameters - Temporal variables - stance time, single limb and double support time, swing time, stride and step time, cadence, speed. Spatial variables- stride length, step length and width, degree of toe out. Joint motion – Sagittal, frontal and Transverse plane joint angles. Functional sub divisions of gait cycle - Passenger unit, locomotor unit. Locomotor functions – Propulsion, stance stability, shock absorption, energy conservation. Unit-II Normal gait – Ankle foot complex – motion, muscle control and functional interpretation. Knee - motion, muscle control and functional interpretation. Hip - motion, muscle control and functional interpretation. Head, trunk, and pelvis - motion, muscle control and functional interpretation. Arm - motion, muscle control and functional interpretation. Total limb function- initial contact, loading response, mid stance, terminal stance, pre-swing, initial swing, mid swing, terminal swing. Unit-III Pathological gait - Pathological mechanisms – deformity, muscle weakness, sensory loss, pain, spasticity. Abnormal gait - Structural impairment - leg length discrepancy, increased Q-angle, increased tibial torsion, increased pronation and supination of the foot. Functional impairment - Parkinson's gait, calcaneal gait, gluteus medius gait, gluteus maximus gait, antalgic gait, arthrogenic gait, ataxic gait, hemiplegic gait, scissors gait, foot drop gait, stiff knee gait, psoatic limp gait. Walking aids, types, prescription and indication. Unit – IV Kinematic methods of gait analysis - Observational gait analysis - Motion analysis – Qualitative analysis – Quantitative analysis – 2 Dimensional analysis, 3 Dimensional analysis - Motion marker systems- sagittal, coronal and transverse plane landmarks. Electrogoniometers, Accelerometers. Unit - V Kinetic methods of gait analysis – Electromyography – Ground reaction force and vector analysis – Instrumented walkways – Energy expenditure – normal walking speed, fast walking speed, and running. Reference: 1. NihatOzkay&Margareta Nordin. Fundamentals of Biomechanics: Equilibrium, Motion and Deformation, Springer International Publisher, 2017. 2. Margareta Nordin& Victor Hirsch Frankel. Basic Biomechanics of the Musculoskeletal System, Lippincott Williams & Wilkins, 2001. 3. Arthur E. Chapman. Biomechanical Analysis of Fundamental Human Movement. Human Kinetics, 2008. 4. David A. winter. Biomechanics and Motor Control of Human Movement (4th edition). john Wiley & sons, 2009 5. Jacquelin Perry. Gait Analysis; Normal and Pathological functions (2nd edition). SLACK incorporated, 2010. 6. Michael Whittle. Gait Analysis; An Introduction, Butterworth-Heinemann, 2007.		

2 **COURSE OUTCOMES: Students are able to**

CO 1	Know the basic parameters of human gait
CO 2	Characterize normal human gait
CO 3	Know the methods of gait analysis and assessment
CO 4	Sketch the normal ranges of motion of the various joints during a gait cycle
CO 5	Describe various types of pathological gait
CO 6	Identify causes and compensation mechanisms for pathological gait
CO 7	Describe measurements used in analysis of human movement

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	1	3	1	1	1	1
2	3	3	1	3	1	1	1	1
3	3	2	1	3	1	2	1	1
4	3	2	1	3	1	2	1	1
5	3	2	1	3	1	3	1	1
6	3	2	1	3	1	2	1	1
7	3	2	1	3	1	2	1	1

MSBCT 403 **SPORTS PERFORMANCE ANALYSIS**

Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit-I

Sports Performance analysis – meaning, need and importance of sports performance analysis, careers opportunities in sports performance analysis – purpose of sports performance analysis – match analysis, work rate analysis. Sports performance analysis methods and procedures

Unit-II

Notational Analysis - Sport-specific notational systems; computerised notational analysis; notation in individual sports; notation in team sports; augmented feedback through video-based technologies; modelling of competitive sport; analysis of structures of sports informing performance indicators; flowcharts and presentation models of sports performance; reliability and validity of notational data; data processing; probability analysis; literature searching; critical evaluation of literature.

Unit-III

Analysis of Sports Technique - Observation of movement; systematic models of qualitative technique analysis; deterministic models of technique analysis; principles of movement (position, orientation, velocity, acceleration, force production); quantitative analysis of performance; accepted 2D filming protocols; comparison to model proformas; assessment of reliability; justification of methods.

Unit-IV

Athlete monitoring and analysis - Time-motion analysis in sport; analysis of athlete tracking systems; GPS and accelerometer analysis of training and competition; monitoring and analysis of sport-specific physical and psychological variables; physiological monitoring; external sources of data relating to sports performance; wind gauge, photo finish, hawk eye technology, goal line technology, hot spot, reliability of data and sources.

Unit-V

Softwares in sports performance analysis – Dartfish, Sports code, Quintic, Kinovea, and Longomatch. Technical requirements, installation procedure, tools, features and report generation.

Reference:

1. Hughes M. and Franks, I. Essentials of performance analysis in sport. Routledge. 2015..
2. McGarry, T., O'Donoghue, P. and Sampio J. Handbook of sports performance analysis. Routledge. 2013.
3. Peter & Lucy. Data analysis in sports. Routledge. 2015.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students to learn the fundamental and advance strategies of performance analysis
CO 2	To enable the students to acquire the video capturing technique
CO 3	To make the students to learn and acquire the skills of using sports performance analysis software
CO 4	To enable the students to acquire the skills of sports performance analysis
CO 5	To enable the students to diagnose the strength and weakness of a player / team
CO 6	To create a platform for the students to choose sports perform analysis as a career

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	3	1	1		1	2
2	3	2	3	1	1		1	2
3	3	2	3	1	1		1	2
4	3	2	3	1	1		1	1
5	3	2	3	1	1		1	2
6	3	2	3	1	1		1	3

MSBCP 401	Sports Biomechanics and Kinesiology (Practical IV)		
	Instruction : 3hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

1. Force plate
2. EMG
3. Isokinetic Machine

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students to learn the force plates and its operations
CO 2	To help the student to understanding the EMG and its analysis
CO 3	To equip the students to Isokinetic Machine operations and testing procedures

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	3			2	1	3
2	3	3	3			2	1	3
3	3	3	3			2	1	3

MSBCP 402	Technique of Sports and Games Skills (Practical IV)		
	Instruction : 3hr / week	**Credits : 2**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

1.Boxing and fencing
2. Gymnastics
3.Golf and Cycling

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the student to learn the boxing and fencing techniques and their performance
CO 2	To make the student to learn the gymnastics events and their performance
CO 3	To make the student to learn the golf and cycling techniques and their performance

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	3			2	1	3
2	3	3	3			2	1	3
3	3	3	3			2	1	3

	Thesis		
	Instruction :	**Credits : 10**	**Assessment : 25+ 75=100**
1	**SYLLABUS**		
2	**COURSE OUTCOMES: Students are able to**		
3	**MAPPING (CO's and PO's)**		
MSBDSE 101	**Mathematics in Biomechanics**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit-I Algebra • Introduction and basic operation • Solving equations • Formulas and literal equations • Applied problems • Vector algebra basic operations Unit-II Matrix • Introduction and basic operations • Matrix multiplication • Algebraic properties of matrix operations • Invertible matrices • Special matrices; Triangular, Symmetric, Diagonal • Elementary matrices for matrices • System of equations an introduction • System of linear equations (Gaussian elimination) • System of linear equation (two and three variables) • Introduction to determinants • Eigenvalues and Eigen vectors • Diagnolisation of Matrices Unit-III Trigonometry • Introduction • Units of measurements of angle • Relation between the Length of an arc of a Circle and the Circular measure of its Central angle • General Angle (Conterminal Angle) • Angle in the Standard Position • Trigonometric Function • Trigonometric Function of any Angle • Fundamental Identities • Signs and values of the Trigonometric function Unit-IV Calculus (Differentiation) • Functions of single variables • Concept of limit, continuity, and differentiability • Definition of derivative • Using the definition to compute derivatives • Techniques of differentiation • Derivatives of trigonometric function • Taylor's series • Functions of two variables, limit, continuity, partial derivatives • Concept of maxima and minima • Power series, Fourier series Calculus (Integration) • Fundamental and mean value – theorems of integral calculus • Evaluation of definite and improper integrals • Integration by parts • Integration by rational numbers • Substitution • Trigonometric substitution • The area problem and the definite integral Unit-V Ordinary differentials equations • First order equation (linear and non- linear) • Second order differential equations with variables coefficients • Variation of parameters methods • Higher order linear differential equations with constant coefficients Partial differential equations • Separations of variables • Laplace equation • Solution of one dimensional heat and wave equations		

Reference:
1. Peter H. Selby & Steve Slavin. Practical Algebra: A Self -Teaching Guide, 2nd Edition
2. Jiri Nedoma, Jiri Stehlík, Ivan Hlavacek, Josef Danek, TatjanaDostalova, Petra Preckova. Mathematical and Computational Methods in Biomechanics of Human Skeletal Systems: An Introduction, 2011.
3. Jiri Nedoma& Jiri Stehlik. Mathematical and Computational Methods and Algorithms in Biomechanics: Human Skeletal Systems, Wiley, 2011.
4. Marvin Bittinger. Basic College Mathematics, Global Edition, 12th Edition, Pearson, 2014.
5. Knudson Duane V. Fundamentals of biomechanics, Springer, 2007.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To enable the students to learn the basic mathematics related to biomechanics
CO 2	To make the students to apply mathematical concepts and principles to perform computations in biomechanics
CO 3	To enable the students to apply mathematics to solve problem related to biomechanics
CO 4	To equip the students to acquire a strong mathematic foundation which facilitate in learning MATLAB and simulation and modelling.

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	1			1	2	3
2	3	3	1			1	2	2
3	3	3	1			1	2	2

MSBDSE 102	**Foundations of Fitness and Exercise Prescription**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

UNIT-I

Fitness – health related fitness, skill related fitness-components of health related fitness - components skill related fitness – Pre activity screening- guidelines, questionnaire, Risk stratification – measurement of resting and exercise blood pressure and heart rate –Body composition – BMI, WHR, Skin fold, Bioelectrical impedance, Hydrostatic weighing.

Unit-II

Muscular fitness- muscular strength– hand grip strength test, 1 RM test, Isokinetic test – Muscular endurance – curl up, push up – Flexibility – sit and reach test. Cardio respiratory fitness Maximal test - Beep test - Maximal Oxygen Consumption Test (VO2max) - Walking / Running Tests - Balke 15 minute test - Cooper 12 minute test - Sub maximal tests-Cycle Test- Astrand Rhyming Bicycle Ergometer Test - Step test - Harvard Step Test - Queens College Step Test - YMCA 3 Minute Step Test - Harvard step test - AAHPERD Health related physical fitness test.

Unit-III

Skill related fitness test – speed – 50m test – Reaction time – Ruler drop test - Tests of Agility- Illinois Agility Run-Shuttle Run test (25 yards) - Zig Zag Test - T Test - Hexagon test-Tests of balance - Stork Stand Test - Balance Beam Test – Modified Bass Test of Dynamic Balance- Power - Margaria Kalamen Anaerobic Power Test. Test, Measurement and Evaluation - Criteria for selection of a standard test – Validity- Reliability - Objectivity – Norms.

UNIT-IV

Warm up – Cool down - Principles of training - FITT principle - Cardio respiratory exercise prescription – Heart Rate Reserve method (HRR), Maximum Heart Rate method, RPE scale – Training methods – Slow continuous method, Fast continuous method, Interval training, High Intensity Interval training, Fartlek training, Functional training.

Unit-V

Resistance training – types of resistance training, Muscular strength, muscular power, muscular endurance, and muscle hyper trophy – Frequency – repetitions- set – recovery – exercise to strengthen major muscles of the body. Flexibility – types of flexibility–active, passive, static, dynamic, ballistic – PNF - Stretching exercise for major muscles of the body.

Reference:

1. ACSM's Health/Fitness Facility Standards and Guidelines, New York: Human, Kinetics, 1992.
2. ACSM's Health related Physical Fitness Assessment manual, Lippin Cott, 2008.
3. Michael Boyle. Functional Training for Sports. Human Kinetics, 2004.
4. Clake, H. Harrison. Application of Measurement to Health and Physical Education, New Jersey: Prentice Hall Inc. 1976.
5. Jensen, Clayne, R & Cyntha C. Hirst. Measurement in Physical Education and Athletics, MacMillan Publishing co., Inc New York, 1982
6. Juan Carlos. Functional Training. Human Kinetics. 2016
7. Arnold G. Nelson & Jouko Kokkonen, Stretching anatomy. Human Kinetics. 2007.
8. Edmund O. Acevedo and Michael A. Starks. Exercise Testing and Prescription lab Manual, USA: Human Kinetics Publishers, 2003.
9. Claudio Gil Soares de Araujo. Flexi test, USA: Human Kinetics Publishers, 2004.
10. Thomas and Roger. Essentials of strength training and conditioning, 3rd edition, Human Kinetics, 2008.
11. Vern Gambatta. Athletic Development. Human Kinetics, 2007.
12. Ryan George. Free weight training anatomy. Ulysses Press. 2016.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students understand the concepts of fitness
CO 2	To equip the students to learn the tests to measure each component of fitness
CO 3	To acquire the skills of pre exercise screening
CO 4	To learn the principles of training
CO 5	To equip the students to prescribe the exercise to the clients
CO 6	To understand the fitness norms and prepare fitness report of the clients

3

MAPPING (CO's and PO's)

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	1	1		1		
2	3		1	1	1		1	2
3	3	3	1	1				

MSBDSE 201	**Exercise and Sports Physiology**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1

SYLLABUS

Unit I

Exercise physiology- definition, need and importance. Energy, work and power - Forms of energy- chemical, kinetic and potential- ATP - role, breakdown, re-synthesis of ATP- The principle of coupled reactions; exothermic and endothermic reactions- ATP resynthesis: three energy systems – ATP/PC (alactic) – The lactic acid system – The aerobic system - Detail required to include the type of reaction (aerobic or anaerobic), the chemical or food fuel used, the specific site of the reaction, the controlling enzyme, energy yield, specific stages within a system, and the by-products produced

Unit II

Energy continuum The type of exercise (duration and intensity) – the onset of blood lactate accumulation/OBLA) -The effect of the level of fitness, availability of oxygen and food fuels, and enzyme control on the energy system used - The recovery process: returning the body to its pre-exercise state - The oxygen debt / excess post exercise oxygen consumption (EPOC) - The alactacid and lactacid debt components, including the processes that occur and the duration of each component Replenishment of myoglobin stores and fuel stores, and the removal of carbon dioxide - implications of recovery process to be considered when planning training sessions, for example training intensities, work/relief ratios.

Unit III

Principles of training: Specificity, progression, overloads (FIT), reversibility, moderation, and variance - The physiological implications of a warm up and cool down (for example, reduce the delayed onset of muscular soreness – DOMS) - periodisation of training to include the macro, meso and micro cycle- Awareness of the implications of the principles when applied to the candidate's own training.

Unit IV

Components of fitness (a) Aerobic capacity - Definition – factors affecting-training, age and sex - Methods of evaluating aerobic capacity (for example, multi-stage fitness test, PWC170 test) - Assessment of the candidate's own VO2 max., matching their result against the aerobic demand of their chosen activity -Types of training-continuous running, repetition running, fartlek and interval training - - Energy system and food/chemical fuels used during aerobic work - Physiological adaptations after aerobic training- Strength - Definition- types of strength – Strength endurance – maximum strength – Explosive/elastic strength – Static and dynamic strength -Factors affecting strength-, Types of training used to develop strength -The repetition, sets and resistance guidelines used to improve each type of strength - Use of multi-gym, weights, plyometrics and circuit/interval training (work intensity, work duration, relief interval, number of work/relief intervals)- Energy system and food/chemical fuels - physiological adaptations after training, including neural and physiological changes to

skeletal muscle- physiological adaptation to flexibility , Body composition, Balance, co ordination, Reaction time and speed training.

Unit V

Erogenic aids - An awareness of current methods of performance enhancement - The effects of each aid - Which athletes would benefit from each aid - Nutritional aids: – Carbohydrate loading – Pre/post competition meals – Food/fluid intake during exercise : Use of creatine supplements Blood doping and recombinant erythropoietin (Rh EPO) -Effects of caffeine -Effects of alcohol - Anabolic steroids (e.g. Nandralone)- Human growth hormone (HGH)

Reference:

1. Clegg C, Exercise Physiology and Functional Anatomy, Feltham Press, 1995.
2. McArdle W et al. Essentials of Exercise Physiology, Lippincott Williams and Wilkins, 2005.
3. Wilmore J and Costill D, Physiology of Sport and Exercise, Human Kinetics, 2004.
4. John Porcarie et al. Exercise Physiology. F.A. Davis company, 2015.
5. K. Birch, D. MacLaren. & K. George. Sports & Exercise Physiology. 2005

2 **COURSE OUTCOMES: Students are able to**

CO 1	To understand basic sports physiology and the physiological factors affecting health, fitness and performance
CO 2	To familiarise with knowledge of health and skill related components of physical fitness
CO 3	To explore how the body adapts sports & exercise activities.
CO 4	To identify exercise needs of a person/team and design appropriate exercise interventions

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	3	1	1		1		
2	3		1	1	1		1	2
3	3	3	1	1				
4	3	3	2	1		2	2	2

MSBDSE 202	Psychology of Sports Performance		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit I Individual aspects of sport performance: Personality - definition- theories of personality- trait perspective - extroversion/introversion, neuroticism/ stability, Type A/Type B: Social learning perspectives – interactionist approaches- Justification of the limitations of personality profiling in sport – Attitudes - meaning- The nature of attitudes,- inconsistencies and prejudice in sporting situations -components of attitudes cognitive, affective, behavioural-changing attitudes from negative to positive, including knowledge of: Cognitive dissonance – Persuasive communication. Motivation - Definition- Atkinson and McClelland's theory of achievement motivation (the need to achieve and the need to avoid failure)- Awareness of sport-specific achievement motivation (i.e. competitiveness). Unit II Group dynamics of sport performance - Groups and teams - Definition of a group/team- Knowledge of Steiner's model of group performance- Awareness of problems associated with productivity of a group/team, including: – Motivational factors (social loafing) – Co – ordination/co – operation factors (Ringlemann effect)- Knowledge of factors affecting the formation and development of a cohesive group/team. Leadership - meaning- importance leadership- Characteristics of leaders, including: – Autocratic/task-oriented – Democratic/social oriented – Laissez-faire - Emergent and prescribed leaders .Theories of leadership, including: – Trait theories – Social learning theories – interactionist theories - Fiedler's contingency model - Chelladurai's multi-dimensional model of leadership. Unit III Mental preparation for sport performance - Commitment - Goal settings - understand the importance and relevance to sport - Factors affecting the setting of goals. Self-confidence - Sports confidence - The concepts of trait sports confidence, competitiveness orientation, state sports confidence - Self-efficacy – Performance accomplishments – Vicarious experiences – Verbal persuasion – Emotional arousal. Concentration- attentional control - cue utilisation - attentional styles. Emotional control - Definition of activation and arousal - Awareness of their relationship to personality, ability level, and complexity of the task - Peak flow experience and the zone of optimum functioning theory - Definition of anxiety- The nature and influences of anxiety, including: The trait/state distinction Multi-dimensional theory (cognitive anxiety and somatic anxiety)- Sports competition anxiety. Anxiety management to improve performance– Cognitive techniques (mental rehearsal/imagery, positive self talk, thought stopping, rational/ positive thinking) – Somatic techniques (progressive muscular relaxation, biofeedback relaxation) Unit IV Competition effects on sport performance - Social facilitation and audience effects - Knowledge of the positive (facilitation) and negative (inhibition) effects of others (including an audience and co-actors) on performance -Awareness of the links with levels of arousal, and the heightening of the dominant response (Zagonc) - The causes and effects of evaluation apprehension (Cottrell) - Awareness of the distraction effect - Awareness of the Home field Advantage Phenomenon - The use of strategies to combat the effects of social inhibition, particularly the use of selective attention and mental rehearsal. Aggression -The difficulties associated with the definition of aggression as opposed to assertion -Definition of channeled aggression-Causes of		

aggressive behaviour - Theories of aggression (in sporting situations) including: – Instinct theories – Frustration-aggression hypothesis – Aggressive-cue hypothesis (Berkowitz) – Social learning theories- Methods of eliminating aggressive tendencies of performers.

Unit V

Consequences of sport performance - Attribution theory - Reasons for success and failure Weiner's model - The use of attributional retraining - Strategies for the promotion of mastery orientation and the avoidance of learned helplessness.

Reference:

1. Cox R. Sport Psychology: Concepts and Applications, McGraw Hill, 2000.
2. Gill D. Psychological Dynamics of Sport and Exercise (2nd edition), Human Kinetics, 2000.
3. Jarvis M. Sport Psychology: A student's handbook, Routledge, 2006.
4. Ellis Cashmore. Sports and Exercise Psychology. Routledge. 2008.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To make the students familiarise with concept of psychology applied in sports performance
CO 2	To integrate personal relevance of the selected theories, techniques, and skills to one's own sport experiences
CO 3	To develop an understanding of how psychological factors influence performance in sport and physical activity settings
CO 4	To develop the ability to think critically about issues in sport and physical activity.
CO 5	To establish a solid foundation of knowledge regarding psychological theories and research in sports setting

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	2	1	3			1		
2	2	1	3				2	3
3	2	1	3			1		3
4		1	3				2	
5	2	1	3			1		

MSBDSE 301	Sports Technology		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit-I Sports Technology- meaning- definition- scope-need and importance of sports technologies – history of science and technology in sport-timeline of technology in sports-principle and purpose of instrumentation in sports-technological impact on sports- technologies enhancing sports: issues and controversies- equipment extending the body- disability and prosthetics; technology, policy and sport; inclusion/ exclusion. Unit-II Science of Sports Materials - adhesives- nano glue, nano modeling technology, nano turf- footwear production, factors and application in sports, constraints, foams-polyurethane- polystyrene, Styrofoam, closed cell and open cell foams, Neoprene, foam, Smart materials: Shape Memory Alloy (SMA), thermo chronic film, high density modeling foam. Unit-III Surface of Playfields -modern surface for playfields, construction and installation of sports surfaces, types of materials: synthetic, wood, polyurethane. Artificial turf, modern technology in construction of indoor and outdoor facilities – use of computers and software's in match analysis and coaching.Sports Design: The body and new structures of sport, cyborg of sport. Enhancing the future of sports performance- sports design and innovation strategies, sports technologies and human factors,sportsinjuires and preventions strategies. Unit-IV Modern Equipment - playing equipments: Balls: types, materials and advantages- Bat/ Stick/ Racquets: types, materials and advantages. Clothing and Shoes: types, materials and advantages. Measuring equipments: Running, throwing and jumping events – protective equipments: types, materials and advantages sports equipment with nano technology, advantages. Sports and fitness Wearable Equipment - Goniometer/ Torsiometer- Dynamometer- pinchmeter- Accelerometer- Myometer- Gyroscope- Heart rate monitor- GPS tracker- EMG sensor - Moov Motion Tracker- Magnetometer. Unit-V Training Gadgets: Basketball: Ball feeder, Mechanism and advantages- Cricket: bowling machine, mechanism and advantages - Tennis: serving machine, mechanism and advantages- Volleyball: serving machine, mechanism and advantages- Lighting facilities: methods of erecting flood light and measuring luminous- video coverage: types, size, capacity, place and position of camera in live coverage of sporting events- use of computer and software in match analysis and coaching- key performance indicators used to assess tactical and technical performance, collected data related to key performance indicators using notational analysis, create performance profiles and communicate data effectively through verbal and visual means. Reference: 1. Dr. Hoshiyar Singh, Sports Technology, KSK Publishers, 2017. 2. Franz Konstanstin Fuss, AleksanderSubis, martin Strangewood, Rabindra Mehta, Routlede Handbook of Sports Technology and Engineering, Routledge, 2013. 3. Peter culley, John Pascoe, Sports Facilities and Technologies, Routledge, 2009.		

4. Sharon Dixon,The Science of Engineering of Sports Surface: Routledge Research in Sports Technology and Engineering, Routledge, 2015.
5. Hambers R, Gabbett TJ, Cole MH, Beard A. The Use of Wearable Microsensors to Quantify SportSpecific Movements – A Systematic Review. Sports Med, 2015.
6. Wundersitz DW, Josman C, Gupta R, Netto KJ, Gastin PB, Robertson S. Classification of team sport activities using a single wearable tracking device. J Biomech, 2015.
7. T. Madalinski, Sport, Technology and the Body: The Nature of Performance New York: routledge,2009.
8. Steven George Hayes, PraburajVenkatraman, Materailas and Technology for Sportswear and Performance apparel, CRC press: Taylor & Francis,2016.
9. Roberts P. suhumaker, osma K solieman, hsinchunchen, Sports Data Mining, springer,2010.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To enable students to learn the fundamental of sports technology
CO 2	To equip the students to learn the technology used in sports
CO 3	To understand the different types of playfield surfaces, sports equipment's and its advantages
CO 4	To familiarise the students with the latest technology involved in sports and games

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	3			1		
2	3	2		1	1		2	2
3	3	2	3			1		3
4	3	2					3	

MSBDSE 302	MAT LAB		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit-I

Quick start • Desktop basics • Matrices and arrays • Workspace variables • Character strings • Calling function • Plots and programming scripts Unit-II

Language fundamentals • Matrices and magic squares • Expressions • Entering commands • Indexing • Types of arrays

Unit-III

Mathematics • Linear algebra • Operations on nonlinear functions • Multivariate data • Data analysis

Unit-IV

Graphics • Basic plotting function • Creating mesh and surface plots • Display images • Printing graphics • Working with graphic objects

Unit-V

Programming • Control flow • Scripts and functions

Reference:

1. Amos Gilat. MATLAB- An introduction with applications. Wiley. 2013
2. Brian Hahn and Dan Valentine, Essential MATLAB for Engineers and Scientists (Fifth Edition)
3. Stormy Attaway, Matlab: A Practical Introduction to Programming and Problem Solving 4th Edition. Elsevier. 2017
4. Jim & John. MATLAB for dummies. Wiley. 2015.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To enable the students understand the procedures, algorithms, and concepts require in solving specific problems
CO 2	To enable the students to carry out simple numerical computations and analyses using MATLAB
CO 3	To familiarize the students on the basic MATLAB software
CO 4	To prepare the students to use MATLAB in their project works.
CO 5	To equip the students to utilize experimental, statistical and computational methods and tools necessary for 3D motion analysis

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	3			1		
2	3	2		1	1		2	2
3	3	2	3			1		3
4	3	2					3	
5	3	2	1	1	2		1	1

MSBDSE 401	HUMAN POSTURE AND CORRECTIVE EXERCISE		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**
1	**SYLLABUS** Unit-I Posture – definition – static and dynamic posture – importance and benefits of good posture - causes of poor posture poor posture, compensatory posture. Vertebral alignment – development of postural curves - Standing posture – lateral view, anterior view, and posterior view. Sitting posture, good lying/sleeping posture. Postural synergies – fixed support synergies – ankle synergy, hip synergy, stepping synergy – change in support strategies – head stabilizing strategies. Unit –II Analysis of Standing Posture – Plumb line - Sagittal plane alignment and analysis - Deviations from Optimal Alignment in the Sagittal plane - Claw toes, Hammer toes, Flexed knee posture, Hyper extended knee posture (Genu Recurvatum), Excessive anterior pelvic tilt, Lordosis and Kyphosis, Forward Head Posture - Frontal plane optimal alignment and analysis - Deviations from optimal alignment in the frontal plane - Pes Planus (Flat Foot), Pes Cavus, Genu valgum (knock knee), Genu varum (bowleg), Squinting or cross-eyed patella, Grasshopper-eyes patella, patella alta, Scoliosis. Unit-III Analysis of Sitting Postures - Muscle activity, Muscle activity in Sitting versus Standing postures, Interdiskal Pressures and Compressive Loads on the Spine, analysis of lying posture, Effects of Age, Pregnancy, Occupation, and Recreation on Posture – postural evaluation chart - Ergonomics & application in work environment. Unit-IV Muscle imbalance – functional evaluation of muscle imbalance - Muscle Analysis of Standing Posture - Posterior View – pelvic position – tilting and rotation, buttock region – Asymmetrical gluteal muscles, Hamstrings – Adductors - Triceps Surae - Shape of the Heel, Foot Posture, Spinal Extensors, Scapular Region, Line of Neck and Shoulder - Anterior View - Pelvic Tilt, Abdominal Wall, Anterior Thigh Muscles, Arm Position, Pectoral Muscles, Deltoids, Sternocleidomastoid and Scalenes, Facial and Head Alignment - Lateral View - Head Position. Unit-V Corrective exercise - evaluation of shoulder - alignment analysis, movement analysis, muscle length, muscle strength, corrective exercise for the shoulder – The trunk and spine- evaluation, movement analysis, muscle length, muscle strength, corrective exercise for the trunk and spine – The pelvis, hip and knee- evaluation, movement analysis, muscle length, muscle strength, corrective exercise for the pelvis, hip and knee. Reference: 1. Levangie PK, Norkin CC; Joint Structure & Function- A Comprehensive Analysis; Jaypee brothers, New Delhi; 2006. 2. Kapandji IA; The Physiology of Joints; Churchill Livingstone, Edinburgh; 1998. 3. Magee J D. orthopedic physical assessment. W.B. saunders ompany. 4. Grisaffi D. Posture and core conditioning Published by David Grisaffi and Personal Fitness Development in the United States of America. 5. Kendall, F. P., Mccreary, E. K., & Provance, P. G. (1993). Muscles Testing and Function (4th Ed). Baltimore: Williams &Wilkins.		

6. Frank C C., Lardner assessment and treatment of muscle imbalance, human kinetics.
7. Kesh Patel, Corrective exercise: A practical approach, Rutledge, 2014.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To learn the fundamental concepts of posture
CO 2	To understand the correct technique of static and dynamic posture
CO 3	To learn the abnormal postural deviations
CO 4	To learn and assess the posture and its deformities and produce a postural assessment report
CO 5	To indentify the abnormal postural deformities and suggestion of suitable corrective exercise

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	3	2	1	2	3	1	2	
2	3		1	2	3		1	1
3	3	2		2	3	2		1
4	3		1	2	3		3	
5	3	2	3	2	3	1		

MSBDSE 402	**MODELLINIG AND SIMULATION**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit-I

Introduction to Simulation: Simulation, Advantages, Disadvantages, Areas of application, System environment, components of a system, Model of a system, types of models, steps in a simulation study. Simulation Examples: Simulation of Queuing systems, Simulation of Inventory System, Other simulation examples.

Unit – II

General Principles: Concepts in discrete - event simulation, event scheduling/ Time advance algorithm, simulation using event scheduling. Random Numbers: Properties, Generations methods, Tests for Random number- Frequency test, Runs test, Autocorrelation test.

Unit-III

Random Variate Generation: Inverse Transform Technique- Exponential, Uniform, Weibull, Triangular distributions, Direct transformation for Normal and log normal Distributions, convolution methods- Erlang distribution, Acceptance Rejection Technique Optimisation Via Simulation: Meaning, difficulty, Robust Heuristics, Random Search.

Unit – IV

Input Modelling: Data collection, Identification and distribution with data, parameter estimation, Goodness of fit tests, Selection of input models without data,

Multivariate and time series analysis. Verification and Validation of Model – Model Building, Verification, Calibration and Validation of Models.

Unit-V

Output Analysis – Types of Simulations with Respect to Output Analysis, Stochastic Nature of output data, Measures of Performance and their estimation, Output analysis of terminating simulation, Output analysis of steady state simulations. Simulation Softwares: Selection of Simulation Software, Simulation packages, Trend in Simulation Software

Reference:

1. Jerry Banks, John S Carson, II, Berry L Nelson, David M Nicol, Discrete Event system Simulation, Pearson Education, Asia, 4th Edition, 2007, ISBN: 81-203-2832-9.
2. Geoffrey Gordon, System Simulation, Prentice Hall publication, 2nd Edition, 1978, ISBN: 81-203-0140-4.
3. Averill M Law, W David Kelton, Simulation Modelling & Analysis, McGraw Hill International Editions-Industrial Engineering series,4th Edition, ISBN: 0-07-100803-9.
4. Narsingh Deo, Systems Simulation with Digital Computer, PHI Publication (EEE), 3rd Edition, 2004, ISBN : 0-87692-028-8.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To introduce basic concepts of the simulation and modeling
CO 2	To equip the students to develop basic simulation and modelling skills
CO 3	To understand the various types of simulation, techniques and methods
CO 4	To familiarise the students with simulation modelling techniques in 3D motion analysis

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	2		3	1		1	3	
2	2	3	2		2			3
3	2		3	1		1	2	1
4	2		1					

MSBGE 101	**KINESIOLOGY**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit-I

Kinesiology: Meaning, history, scope and importance. Anatomical reference position- reference planes- reference axis- sagittal plane movement- frontal plane movement- transverse plane movement. Directional terms – joints movement terminology. Muscle – functions - structure- fiber architecture-structural classification of muscle- types of muscle fiber. Behavioural properties of muscle- types of contraction- role of muscles-uni joint- two joint and multi joint muscles. Factors affecting muscular force generation- force velocity relationship, length tension relationship, and short stretch cycle- electromechanical delay- - common muscle

injuries. Bone: composition and structure of bone tissue - function- types of bone- axial and appendicular skeleton- Joints-classification of joints- articular cartilage- articular fibrocartilage- articular connective tissue- - common bone injuries.

Unit-II

Structure of shoulder joint and shoulder girdle- origin, insertion and action of shoulder joint muscles and shoulder girdle muscles- common injuries of shoulder joint and shoulder girdle- exercise programme to stretch and strengthen the shoulder joint muscles. Structure of elbow and wrist joint – origin, insertion and action of elbow and wrist joint muscles- common injuries of elbow and wrist joint- exercise programme to stretch and strengthen the elbow and wrist joint muscles. Structure of spinal column- origin, insertion and action of spinal column muscle- common injuries of spinal column- stretching and strengthening exercise programme to spinal column muscle.

Unit-III

Structure of pelvic girdle and hip joint- origin, insertion and action of pelvic girdle and hip joint- common injuries of hip joint- exercise programme to stretch and strengthen the pelvic girdle and hip joint muscles. Structure of knee and ankle joint- origin, insertion and action of knee and ankle joint muscles- common injuries of knee and ankle – exercise programme to stretch and strengthen the knee and ankle joint muscles.

Unit-IV

Gait - Meaning, phases of gait cycle- stance phase, swing phase. Temporal variables- stance time, single limb and double limb support time- swing time, stride and step time cadence, speed. Spatial variables stride length, step length, and width, degree of toe out. Abnormal gait: structural impairment- increased Q- angle. increased pronation and supination of the foot- Functional impairment- Parkinson's gait, calcaneal gait, gluteus medius gait, gluteus maximus gait, antalgic gait, scissors gait, foot drop gait.

Unit-V

Posture - Definition – static and dynamic posture- poor posture and compensatory posture. Muscle analysis of standing posture- posterior view- pelvic position- tilting and rotation, buttock region-line of neck and shoulder- Anterior view- pelvic tilt, abdominal wall , facial and head alignment- Lateral view – head position. Analysis of standing posture- sagittal plane alignment and analysis-,lordosis and kyphosis. Frontal plane alignment analysis-pes planus,pes cavus, genu valgum, genu varum, scoliosis.

Reference:

1. Levangie PK, Norkin CC; Joint Structure & Function- A Comprehensive Analysis; Jaypee brothers, New Delhi; 2006.
2. Kapandji IA; The Physiology of Joints; Churchill Livingstone, Edinburgh; 1998.
3. Magee J D. orthopedic physical assessment. W.B. saunders ompany.
4. Grisaffi D. Posture and core conditioning Published by David Grisaffi and Personal
5. Fitness Development in the United States of America.
6. Kendall, F. P., Mccreary, E. K., & Provance, P. G. (1993). Muscles Testing and
7. Function (4th Ed). Baltimore: Williams &Wilkins.
8. Frank C C., Lardner assessment and treatment of muscle imbalance, human kinetics.

2 **COURSE OUTCOMES: Students are able to**

CO 1	To equip the students with foundations of kinesiology
CO 2	To familiarize the students with muscle origin, insertion and action
CO 3	To equip the students on gait analysis.
CO 4	To enable the students to learn posture analysis

3 **MAPPING (CO's and PO's)**

course outcomes	Program Outcomes							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1	2	3	1	1		2	3	3
2		3	1		1		3	3
3	2	3	1	1		2	3	3
4	2	3	1				3	3

MSBGE 201	**SPORTS BIOMECHANICS**		
	Instruction : 4hr / week	**Credits : 4**	**Assessment : 25+ 75=100**

1 **SYLLABUS**

Unit – I

Sports Biomechanics – meaning, definition, need and importance biomechanics in yoga. Branches of biomechanics – statics, dynamics, kinematics and kinetics. Motion- types of motion, linear, angular and general motion. Planes and axis.

Unit-II

Kinematics - Linear and angular kinematics. Distance, displacement, speed, velocity and acceleration in linear and angular motion. Linear and angular momentum- Scalars and vectors. Principles of projectile motion. Impulse - Impulse momentum relationship.

Unit-III

Kinetics - Force – Inertia, internal force, external force, torque, gravitational force, centripetal force, centrifugal force, ground reaction force, friction, types of friction, pressure, characteristics of force. Lever – types of lever, centre of gravity, line of gravity, balance, stability and equilibrium, types of equilibrium, factors affecting equilibrium. Newton laws of motion. Work, power and energy, conservation of mechanical energy.

Unit-IV

Fluids - Motion in Water and Air – fluid-relative velocity- laminar flow and turbulent flow – buoyancy- Archimedes principles- flotation-drag- coefficient drag-form drag-wave drag- lift – coefficient lift-foil- Bernoulli principle- Magnus force-propulsive drag theory-propulsive lift theoryvortex generation- stroke technique.

Unit-V

Cartesian coordinate system, qualitative and quantitative analysis – biomechanical analysis of fundamental human movement- walking-running-jumping and throwing. Analysis of human posture and postural deformities. Sports performance analysis.

Reference:

<table>
<tr><td></td><td>1. Suasn J. Hall, Basic Biomechanics, McGrew Hill Education, 2004.
2. Joseph hamil et al. Biomechanical Basis Of Human Movement, Wolter Kluwer, 2015
3. Knujdson, Duane V. Fundamnetal of Biomechanics, Springer, 2007.
4. Peter McGinnis, Biomechniacs of Sports and Exercise, Human kinetics, 2005.</td></tr>
<tr><td>2</td><td>COURSE OUTCOMES: Students are able to
<table>
<tr><td>CO 1</td><td>To equip the students to learn the basic of sports biomechanics</td></tr>
<tr><td>CO 2</td><td>To learn to apply the principle of physics in solving tasks associated with human locomotion</td></tr>
<tr><td>CO 3</td><td>To learn the internal and external forces of human movement</td></tr>
<tr><td>CO 4</td><td>To learn the principle of aerodynamics and hydrodynamics</td></tr>
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<tr><td>3</td><td>MAPPING (CO’s and PO’s)
<table>
<tr><td rowspan="2">course outcomes</td><td colspan="8">Program Outcomes</td></tr>
<tr><td>PO 1</td><td>PO 2</td><td>PO 3</td><td>PO 4</td><td>PO 5</td><td>PO 6</td><td>PO 7</td><td>PO 8</td></tr>
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TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

CHENNAI-600 006



SYLLABUS
M.PHIL - EXERCISE PHYSIOLOGY AND NUTRITION
(REGULAR)

DEPARTMENT OF EXERCISE PHYSIOLOGY AND NUTRITION

Tamil Nadu Physical Education and Sports University

Chennai.

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

M.Phil - EXERCISE PHYSIOLOGY AND NUTRITION
CHOICE BASED CREDIT SYSTEM (CBCS)

REGULATIONS:

The CBCS for the one year M.Phil Degree Programme will be implemented from the academic year 2009 – 2010.

1. ELIGIBITLITY FOR ADMISSION:

A candidate shall be admitted to the degree M.Phil. (Exercise Physiology and Nutrition) only if he / she produce satisfactory evidence to the effect that he / she has successfully completed M.Sc Exercise physiology and Nutrition, M.Sc Physiology, M.Sc Nutrition and Dietetics, M.Sc Exercise Therapy and Nutritional care, or its equalant degree approved by the Syndicate of Tamil Nadu Physical Education and Sports University.

2. COURSE OF STUDY:

The normal duration of M.Phil programme shall be 2 semester (1year). A Student should complete the M.Phil programme within 3 years.

3. SEMESTERS:

An academic year is apportioned in to two semesters.

Odd Semester - July to November

Even Semester- December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days.

4. CHOICE BASED CREDIT SYSTEM (CBCS)

The CBCS in M.Phil programme would have the following two components and the minimum credit requirements for each component to be completed in one year are:-

1. CORE COURSES		- 20 Credits
2. DISSERTATION		- 06 Credits
3. VIVA		- 02 Credits
4. VPP		- 02 Credits
	TOTAL	- 30 Credits

SUB. CODE	CORE COURSES	L	T	P	C	IN	EX	TOTAL
	THEORY – SEMESTER – I							
13101	Research Methods and Statistics in Exercise physiology and Nutrition	5	0	0	5	40	60	100
13102	Performance based Exercise physiology and Nutrition	5	0	0	5	40	60	100
	THEORY – SEMESTER – II							
13201	**DISSERTATION TITLE PAPER**	5	0	0	5	40	60	100
13202	Computer Operation , Communication Skills and Educational Skills	5	0	0	5	40	60	100
13203	**DISSERTATION**	0	0	6	6	40	60	100
13204	**VIVA**	0	0	0	2	0	50	50
13205	**VPP**	0	0	2	2	50	0	50
	TOTAL	**20**	**0**	**8**	**30**	**250**	**350**	**600**

5. ASSESSMENT

Assessment of the student's attainment will be true-fold consisting of continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 40-60.

a) Continuous Internal Assessment (CIA)

The CIA marks shall be awarded based on the following:

Best Scores of two tests out of three tests - 20

Seminar /Assignment / Quiz - 10

Model Exam - 10

40

b) Attendance from date of commencement of courses

1. 80 % and above- permitted to write the Exam.
2. 75% to 79% - with condonation fee Rs.300
3. 65% to 74% - penalty Rs.1000 carryover (appear the exam along with the second semester)
4. 60% and below Re do the course.

c) End Semester Examination (ESE)

Except in the case of project-work and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 60.

6. EVALUATION

The following procedure will be followed for evaluation

a) The answer scripts are evaluated by both internal and external examiners (Double valuation)

b) If there is 10% difference between the two examiners, a third revaluation is conducted, which will be final.

c) The Question paper pattern under CBCS will include

Part -A-10XI =10 marks – No choice- Question pattern only

Part -B- 5X4 = 20 marks – Either or – Five Questions

Part -C- 3X10 = 30 marks – Five Questions.

d) For a pass in each paper, the candidate is required to secure at least 50% in the end semester Examinations.

e) A Student will be issued, Hall ticket only if one produces "No Dues" certificates form the concerned department, the laboratory, the Registrar's Office and the Library.

f) The Award of Grades is as Follows.

Row Scores	Grade	Description	Grade Points
90 and above	S	Superior	9.0 – 10.0
80 to 89	A	Very Good	8.0 – 8.9
70 to 79	B	Good	7.0 – 7.9
60 to 69	C	Very Fair	6.0 – 6.9
50 to 59	D	Satisfactory	5.0 - 5.9
Less than 50	F	Failure	

If a student has any *grievance* relating to his/her CIA, he/She may, within three working days of the declaration of the Scores/thereof, prefer an appeal through his/her class Advisor to the appear committee, which will consists of the HOD, class Advisor and course teacher. The Appeals committee will review/peruse the student's records work. Any appeal should be made along with an appeal fee of Rs.200/- per course /paper. The decision of the appeals committee shall be *final.*

Double valuation system will be adopted for ESE valuation and therefore revaluation is not permitted whereas re totaling can be done by paying a fee of Rs.300/- per paper.

7. VILLAGE PLACEMENT PROGRAMME (VPP):

Village placement programme will be organized for 4 days in the third semester.

Assessment of Students performance in VPP:

The number of credits allotted for VPP camp will be two. The marks allotted for each camp will be 50. Each student participating in the camp will be evaluated for 50 marks. The criteria for evaluation of VPP will be as follows.

Criteria	**Maximum Marks**
1. Interaction with villages/ Spotting the Talents	10
2. Participation/Attitude towards work / Finding out the Pattern of eating	10
3. Participation in interaction &discussion	10
4. Organizing and decision-making ability /Nurturing	10
5. Report writing/ability to work in a team/ Training and Coaching	10
Total -	50

SUBJECT CODE-13101
RESEARCH METHODS AND STATISTICS IN EXERCISE PHYSIOLOGY AND NUTRITION

UNIT – I:

Introduction: Meaning, Nature and Scope of Research. Importance of Research in General and with special reference to Exercise Physiology and Nutrition – Characteristics of Research and Research Worker – Basic, Applied and Action Research – their relationship and differences-Methodology of Research.

UNIT-II:

The problem: Locating the problem – Selection of Problem – Developing problem statement – Meaning and significance of Hypothesis – Types of hypothesis. Sampling: Sampling & Population, Sampling Techniques, sample selection, characteristics of good sample. Tools and techniques of Data Collection: - Check List, Data Schedule, observation, openionnaire, Interview, Questionnaire, Rating Scale.

UNIT – III:

Laboratory Research: Experimental Designs – Experimental methods – Control of Experimental factors – Research Report – Difference among abstract, Research proposal and Research Report – Format of Research Report – Tables and figures – Footnotes and Bibliography.

UNIT-IV:

Introduction to Statistics: Type, Classification and basic concepts of statistic – Measures of central tendency – Measures of variability – Normal probability curve – Properties of normal curve – problems based on Normal curve – Testing of hypothesis – Problems based on't' test .

UNIT-V:

Need for analysis of variance : One way analysis of variance – Two way analysis of variance – Analysis of covariance- Concept of correlation – Rank correlation – Partial and multiple correlation – Biserial correlation – Chi-square – Contingency coefficient – Mann Whiteney U test – Kruskal Wallis H test.

Reference:

1. John .W.Best, (2003), Research Education 4th ed. (New Delhi: Prentice Hall of India).
2. M.L.Kamalesh, (2002), Methodology of Research in Physical Education, New Delhi: Metropolitan.
3. David H. Clarke and Harrison H., Clarke (2004) , Research Process in Physical Education , 2nd ed.(Eaglewood Cliffs New Jercy Prentice Hall Inc.,)
4. Veit Richard, (2000), Research – The Student's Guide, New York: Macmillan Publishing Company.
5. Sadhu A.N. Singh Amarjith (2003) Research Methodology in Social Sciences 4th ed. (Bombay Himalaya Publishing House.

SUBJECT CODE-13102 –

PERFORMANCE BASED EXERCISE PHYSIOLOGY AND NUTRITION

Unit–I:

Factors affecting performance – Causes of fatigue – The task dependency model: Central and peripheral causes of fatigue – Central mechanism of fatigue – Central governor model of fatigue – Accumulation and depletion hypothesis of peripheral fatigue – Muscle temperature and fatigue – Myoelectric manifestation of fatigue- Effects of fatigue on strength, reflexes and coordination.

Unit–II:

Work test to evaluate performance – Laboratory assessment of Physical performance Theory and ethics- Direct and indirect measurement of maximal aerobic power – Lactate threshold to evaluate performance – Determination of anaerobic power.

Unit–III:

Training for performance- Training principles – Training to improve aerobic power – Training to improve anaerobic power- Training to improve muscular strength – Training to improve flexibility – Training to improve coordinative abilities – Common training mistakes.

Unit–IV:

Training for female athletes– important factors to be considered when women involved in vigorous training – Exercise, Training and Menstruation – Menstruation and performance – Training during pregnancy- Sports training for children – Sports training for special population - diabetics and asthmatics.

Unit-V:

Nutrition – Role of different nutrients to improve performance in weight category sports, Endurance sports, Team sports, semiskilled and skilled sports – Nutritional supplements to improve Sports performance – Body composition and performance – Somatotype and performance.

Reference Books:

1. Applied Exercise and Sports Physiology – Terry J. Housh, Dona J Housh – Herbert A.deVries – Holcomb Hathway Publisher.
2. Exercise Physiology – Theory and application to fitness and performance –Scott K.Powers, Edward T Howley – Brown and Benchmark Publishers.
3. Physiology of Sports and Exercise – Jack H.Wilmore and David L Costill –Human Kinetics

SUBJECT CODE-13202
COMPUTER OPERATION, COMMUNICATION SKILLS AND EDUCATIONAL SKILLS

UNIT – I

Basics of computer – hardware-software-networking computer- LAN-WAN-introduction to internet –internet services-www-sending mail-receiving mail-web pages-web site- web server-search engine-survey of article/literature using internet.

UNIT – II

Word document –creation – formatting feature – mail merge- find and replace-spelling and checkers-spread sheet-simple calculations power point – lay outs-audio-video – images usages-with power point-data base-creation-primary key and other constraints-simple SQL statements- create-insert-update-delete-select-commit-format and tools-connecting data base using VB -creating simple graphical user interface applications using VB

UNIT – III

What is communication- role of communication in the present scenario- barriers to communication- types of communications-written versus oral – telephone communications face to face to face interactions- written letter writing-report writing-memos-note making-agenda preparation.

UNIT IV

Soft skills-interview skills- preparing an inter view- presentation skills-body language-speaking-pronunciation-structuring of a presentation-grouping discussion-skills in listening and expressing effectively.

UNIT - V

Pedagogy: meaning , theories of pedagogy (Benjamin bloom, jean piaget, Indian educational theories (Gandhi))-educational psychology-concept learning life skills of sex educations-integrating skills development- modernizing education and skill development-basic and higher education- issues and challenges.

References:

1. "Soft skills", University of Madras, Chennai.
2. "Communication skill", University of Madras, Chennai.
3. Mangal s.k(2002) advanced educational psychology , prentice hall of India, new Delhi
4. Sampath .k. (1998) Educational technology, New Delhi.
5. Keemar .k. (1997) Educational technology, new age publisher, New Delhi.
6. Kuppusamy. b. (1984) advanced educational psychology, New Delhi.

M.Phil - Exercise Physiology and Nutrition

03201 D

AREA OF DISSERTATION
(SURVEY STUDY)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology: Survey study methods: Meaning- Definition- Assumptions- Major steps- characteristics and sources- precaution in selecting an object of case studies. Advantages and limitations. Procedure to select the Case. Collection of data from the case- parents- spouse- children- physical education teacher- coaches-co players- Spectators & fans- society members Schedules and Questionnaire: Meaning of a schedule- types of schedule and steps in framing schedule- types of questionnaire: Meaning- forms- process- validity and reliability- advantages and limitations.

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean Median, Mode and Standard Deviation. Independent t Test - Correlation: Pearson Product moment Correlation – Spearman Rank order correlation- Chi- Square- Factor Analysis .

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

Best John W and James Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

Kothari C.R. (1985) Research Methodology, NewDelhi: Wiley Eastern Limited.

Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

REFERENCE BOOKS:

1. Greg Mclatchie, Mark Harries, Clyde Williams, John king, (2003), "ABC of Sports Medicines", BMJ Books.
2. Roger M.Enoka, (2002), " Neuromechanics of human movement", Human kinetics.
3. Kelli McCormack Brown, David Q.Thomas, Jerome E.Kotecki, (2002), "Physical Activity and Health an Interactive Approach", Jones and Bartlett Publishers.
4. Barbara Herlihy, Nancy K.Maebius, Caithin Duckwall,(2003), "The human body in health and illness", Saunders.
5. Kate Woolf- May, Steve Bird, Polly Davey, Jane Fallows, (2006), "Exercise prescription physiological foundations", Churchill living stone.
6. Gordon Edlin, Eric Golanty (2004), "Health and wellness", Jones and Bartlett Publishers.
7. K.Lee Lerner, Brenda Wilmoth Lerner, (2007), "World of sports science", Thomson.
8. Fraser, Colman, Miller, Pare,(2005), ''Synopsis of Disease of the Chest" Saunders.

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

Department of Exercise Physiology and Biomechanics

M.Phil in Sports Biomechanics and kinesiology (Regular)

Choice Based Credit System (CBCS)
Subject matter and Evaluating System
Norms, Rules and Regulations

1. PREAMBLE :

The Master of Philosophy in **Sports Biomechanics and Kinesiology** (M.Phil) programme is meant for candidates desirous of pursuing Research programme in **Sports Biomechanics and Kinesiology** and for preparing a professional Sports Biomechanists/ Kinesiologists/ Sports Scientists/Educators and in colleges and university departments.

2. REGULATIONS

The syllabus is for one year M.Phil Degree programme under CBCS system - Regular) is implemented from the academic year 2012 – 13 onwards.

3. ELIGIBITLITY FOR ADMISSION:

A Candidate shall be admitted to the M.Phil degree in **Sports Biomechanics and Kinesiology** if he / she produce satisfactory evidence to the effect that he/she has successfully completed Master of Science Degree in **Sports Biomechanics and Kinesiology**, or its equivalent Degree approved by the syndicate of the Tamil Nadu Physical Education and Sports University, Chennai.

For securing admission to the M.Phil Programme, candidates must have secured 55 % of marks in the respective PG Degree programme or any equivalent programmes in the case of inter – disciplinary subjects. However, the minimum marks for the SC/ ST candidates would be 50 %.

4. SCHEME OF SELECTION:

An Entrance test and interview would be administered for all the applicants, the performance in that would be taken into account along the marks scored in the PG programme. The written Test would comprise objective Questions for 75 marks and the interview would carry 25 marks. The Rank list will be prepared accordingly.

5. COURSE OF STUDY:

M.Phil, Programme shall be of duration of one Academic year with two semesters. A student should complete the M.Phil Programme within three years after registration. The Total working days of each semester shall be 90 days exclusive of the period of the admission and examination etcetera. The medium of Instruction and examination shall be English.

6. SEMESTERS:

An Academic year is of two semesters.

First Semester – July to November
Second Semester - December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days.

7. CHOICE BASED CREDIT SYSTEM (CBCS):

The CBCS in M.Phil, programme would have the following components and the minimum credit requirements for each component to be completed in one year are:

Core Courses	- 20 Credits
Dissertation	- 8 Credits
Internship	- 2 Credits
Total	30 Credits

8. COURSE WEIGHT:

Courses will be designed with weightage depending upon the content, duration and specialization.

9. CREDIT DISTRIBUTION

SEMESTER – I (First Year)					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
2 ~~16~~101	Research Methodology and Statistics in Sports Biomechanics and Kinesiology	5	0	0	5
	Area of specialization	5	0	0	5
	√				
2 ~~16~~102	Sports Biomechanics				
	Total	10	0	0	10

SEMESTER II (First Year)					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
16201	Area of Dissertation	5	0	0	5
16202	Computer Operations Communication & Educational skills (pedagogical skill includes practical Training in teaching)	5	0	0	5
16203	Dissertation	0	6	6	6
16204	Viva – Voce		2	2	2
16205	Internship	0	2	2	2
	Total	10	10	10	20
	Grand Total(Semester I & II)	20	10	10	30

L- Lecture Hour T- Tutorial Hour P – Practical Hour C- Credits

10. ASSESSMENT

Assessment of the students is consisting of continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 40: 60.

11. CONTINUOUS INTERNAL ASSESSMENT (CIA)

a) The CIA marks shall be awarded based on the following:

Theory	Marks
Best Scores of two tests out of three tests	20
Model Exam	10
Seminar	10
Total	40

12. END SEMESTER EXAMINATION (ESE)

Except in the case of project-work and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 60. Standard practical examination for 60 marks will be conducted with external examiner.

13. EVALUATION

The following procedure will be followed for evaluation

a) The answer scripts are evaluated by both internal and external examiners (Double valuation)

b) If there is 10% difference between the two examiners, a third revaluation is conducted, which will be final.

c) Theory papers : Duration Three Hours – External

Part A (10 x 1) - 10 (Question type)
Part B (5 x 4) - 20 (Either or type)
Part C (3 x 10) - 30 (Essay type – 5 questions)

60 marks

d) For a pass in each paper, the candidate is required to secure at least 50% in the semester Examinations .

14. THE AWARD OF GRADES IS AS FOLLOWS.

Marks	Grade	Description	Grade Points
90 and above	S	Superior	9.0 – 10.0
80 to 89	A	Very Good	8.0 – 8.9
70 to 79	B	Good	7.0 – 7.9
60 to 69	C	Very Fair	6.0 – 6.9
50 to 59	D	Satisfactory	5.0 - 5.9
Less than 50	F	Failure	

If a student has any grievance relating to his/her CIA, he/She may, within seven working days of the declaration of the Scores/thereof, prefer an appeal through his/her class Advisor to appear committee, which will consists of the HOD, class Advisor and course teacher. The Appeals committee will review/peruse the student's records work. Any appeal should be made along with an appeal fee of Rs.200/- per course /paper. The decision of the appeals committee shall be final.
Double valuation system will be adopted for ESE valuation and therefore revaluation is not permitted whereas retotaling can be done by paying a fee of Rs.300/- per paper. Within in 15 days from the publication of results.

15. SCHEME OF EXAMINATIONS:
MARKS DISTRIBUTION

SEMESTER – I (First Year)				
Subject Code	**Title of the Paper**	**Internal**	**External**	**Total**
16101	Research Methodology and Statistics in Physical Education	40	60	100
	Area paper of specialization	40	60	100
16102	Sports Biomechanics			
	Total	80	120	200

SEMESTER- II (First Year)				
Subject Code	**Title of the Paper**	**Internal**	**External**	**Total**
~~16~~201	Area of Dissertation	40	60	100
~~16~~202	Computer Operations Communication & Educational skills (pedagogical skill includes practical Training in teaching)	40	60	100
~~16~~203	Dissertation	40	60	100
~~16~~204	Viva – Voce	---	50	50
~~16~~205	Internship	50	---	50
	Total	170	230	400
	Grand Total(Semester I & II)	250	350	600

MPSBK 16101

RESEARCH METHODOLOGY AND STATISTICS IN SPORTS BIOMECHANICS AND KINESIOLOGY

UNIT I Research : Criteria of locating and selecting a research problem. Hypothesis meaning, types and formulation and research hypothesis . Variables and its types. Fixing the level of significance and degrees of freedom for a research problem. Construction and standardization of questionnaire. Recent research trends in sports biomechanics and kinesiology.

UNIT II Research Design: Meaning , types , significance and criteria for selecting a suitable research design : Quasi experiment – Cross sectional design – longitudinal design – Double blind placebo design – repeated measures design – rotated group design – Independent factorial design – mixed factorial design . Descriptive Research: Case study, survey method.

UNIT III Mechanism of writing research proposal: report and synopsis. Method of writing abstract and full paper for presenting in a conference and to publish in journals. Chapterization and thesis format. Criteria for establishing research laboratories in sports biomechanics and kinesiology.

UNIT IV Statistical concepts : Data – Normality of Data - Normal curve , Meaning, purpose, calculation Type I, II,III & IV errors and advantages of " t "test – simple analysis of variance (one way ANOVA) – Factorial design – two way and three way factorial design – repeated measures ANOVA- Two way ANOVA with one factor repeated ANOVA – post hoc tests. Application of MS Excel and SPSS for statistical calculations.

UNIT V Analysis of Còvariance: Meaning, purpose, calculation and advantages. Pearson Product Moment Correlation, Rank order correlation – Biserial Correlation – Partial and Multiple Correlation, prediction and discriminant analysis and wherry dolittle method – Phi Correlation - Chi square, Contingency coefficient . Concept and calculations of Mann Whitney U test, Kruskal Wallis H test - Concepts of multivariate ANOVA and ANCOVA (MANOVA, MANACOVA) - concept of Factor Analysis .

Reference:

1) Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.,

2) Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

3) Clarke, H. Harrison and Clarke David H. (1972) Advanced Statistics, New Jercy: Prentice Hall Inc.

4) Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

5) Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

6) Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

7) Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

8) Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

9) Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

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UNIT I

Biomechanical characteristics of Walking-Gait cycle-Swing phase-Stance phase - Biomechanical characteristics of Running –Biomechanics of Jumping-Mechanical characteristics of Throwing-under arm throw-Side arm throw-Over arm throw-biomechanics of pushing and pulling. Comparison of qualitative and quantitative movement analysis-Free body diagrams-Sampling theorem-Mathematics in Biomechanics-Algebra-Vector algebra-Vector composition-vector resolution- Trigonometry-Pythagoras equation-The rule of signs-Arithmetic operations--Cartesian co-ordinate system-one dimensional, two dimensional and three dimensional movements-SI units- conversion table of units.

UNIT II

Qualitative Analysis of Human Movement-Prerequisite Knowledge for a Qualitative Analysis-Planning a Qualitative Analysis-Tools for Measuring Kinematic Quantities-Cinematography and Videography-Optoelectronic Motion Analysis-Optoelectronic Cameras-Optoelectronic Targets-Calibration-Target sets and Biomechanical Models-Accelerometers-Goniometry-Electrogoniometers.

UNIT III

Tools for Measuring Kinetic Quantities-Electromyography-Dynamography-Vector Algebra-Vector Composition-Graphic Solution of Vector Problems-Trigonometric solution of Vector Problems-Force Plate-interpreting GRF –time curve-GRF related variables-Pressure measurement-units of pressure-Electromyography-Isokinetic Dynamometry.

UNIT-IV

Qualitative analysis of sports movements- Stages in structured approach to analysis of human movement in sport-Preparation-Observation-Evaluation and diagnosis-Intervention-Quantitative methods-Wind Gauge-Photo finish-Electronic distance measurement-Research Journals in Biomechanics.

UNIT-V

The Use of Videography in Recording Sports Movements- Videography-Recording the Movement- Digital Videography- Problems and Sources of Error in Motion Recording- Experimental Procedures- Two-Dimensional Recording Procedures-

Three-Dimensional Recording Procedures- Data Processing- Data Smoothing, Filtering and Differentiation- Body Segment Inertia Parameters- Data Errors.

Reference:

1. *Paul Grimshaw et.al,* ***Sports & Exercise Biomechanics,*** *Taylor & Francis Group, (2007).*

2. *Susan J.Hall,* ***Basic Biomechanics****, McGraw Hill Education, 2004.*

3. ***Biomechanics of Sport and Exercise****, Peter M.McGinnis, Human Kinetics, 2005.*

4. *Kathryn Lutgens et al.* ***Kinesiology (Scientific Basis of Human Motion)****, Brown and Bench mark, 1992 .*

5. *Roger Bartlett,* ***Introduction to Sports Biomechanics Analyzing Human Movement Patterns****, Routledge, 2007.*

6. *Knudson, Duane V.* ***Fundamentals of biomechanics****, Springer, 2007.*

MPSBK 16201

AREA OF DISSERTATION

The Syllabus for the University Examination may be prepared by the Guide himself based on the following guidelines and the topic.

The relevant Questions may also be prepared accordingly.

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing and training procedures – Statistical Technique.

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design.

UNIT – IV Data Collection : Data Collection – Methods of Data Collection – Processing and Analysis of data – Statistical Technique – Testing Hypothesis – Interpretation – Technique of interpretation – Computer Analysis of data.

UNIT – V Significance of Research Writing – Steps in Research Writing – Lay out – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports – Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

1) Best W John and James V Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

2) Kothari C.R. (1985) Research Methodology NewDelhi: Wiley Eastern Limited.

3) Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.,

4) Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

5)Clarke, H. Harrison and Clarke David H. (1972) Advanced Statistics, New Jercy: Prentice Hall Inc.

6) Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

7) Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

8) Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

9) Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

10) Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

11) Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

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MPSBK 16202

COMPUTER OPERATIONS, COMMUNICATIONS AND EDUCATIONAL SKILLS

UNIT : I Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT : II Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create insert – update – delete – select – commit – front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB.

UNIT: III What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face to face interactions (situations) – Written – Letter Writing – Report Writing – Memo's – Note making - Agenda preparation.

UNIT :IV Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking , Pronunciation , structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT: V Pedagogy : Meaning, Theories of pedagogy (Benjamin Bloom, Jean Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills, sex education – Integrating skill development, modernizing education and skill development – Basic and higher education : Issues and challenges.

COMPUTER OPERATIONS – SYLLABUS - PRACTICALS

1. MS – WORD

1. Create advertisement is MS WORD
2. To illustrate the concept of mail merging in word.
3. Document creation with scientific notation
4. Test manipulation with scientific notation
5. Table creation, table formatting and conversion.
6. Mail Merger and letter preparation
7. Drawing and Flow Chart.
8. Show the different effect for the given text in the document.
9. Create a table of employee and calculate the next salary.
10. Design a table with merge cells and split cells technique.

2. SPREAD SHEET

11. To create a Spread Sheet to analyze the marks of the students in a class and to create appropriate charts.
12. Charts in Spread Sheets
13. Formula and Formula Editor
14. Inclusion of objects, pictures and graphics protecting the document and sheet.
15. Sorting and import/ export features.
16. Create suitable chart to show the census data in Indian Sports.
17. Create a suitable chart to show the students average in the class.
18. Create an electronic spread sheet of student marks, and find the total, average and respective class secured by each student.
19.
20. Generate the numbers vertically starting from 10 to 100 with step value 5.

3. POWER POINT

21. To create the presentation for the department using the power point.
22. Animation in Power point Presentation
23. Designing the Power point Presentation
24. Timing for the slides in Power point Presentation
25. Back ground designing in Power point Presentation
26. Designing the Power point Presentation using audio and Video.

4. INTERNET LAB

27. Browsing a Web Site.
28. Composing and Sending a Mail
29. Forwarding and replying to mails.
30. Downloading Articles / Web content.
31. Literature survey using search enquires

5. DBMS LAB

32. Creation of database table with constaints
33. Modification of data in a table.
34. 28 GUI applications using VB (Single calculator, dollar conversion etc.,)
35. Database Applications using VB (insert, update, delete).

References :

1. Peter Norton, " Introduction to Computers", 6th Edition , Tata Mcgraw Hill.
2. Ashok N. Kamthane, " Computer Programming", Pearson Education India.
3. Groff Weinberg, " The complete Reference SQL", 2nd Edition, Tata Mcgraw Hill.
4. Bott Special Edition using Microsoft Office 2007, Pearson Education India.
5. Gray W. Harsen and James V Harsen (1996) Data Base Management and Design, Prentice Hall
6. Jeffrey A Hotter, Mary B Prescolt, Fred R. Medadden (2002), Modern database Management, Prentice Hall.
7. Robert I T Futrell, Donald F. shafer Linda, (2002) Quality software project management Pearson Education, Asia.
8. ' Soft Skills' University of Madras, Chennai
9. ' Communication Skills," University of Madras, Chennai
10. Mangal .S.K. (2002) , Advanced Educational Psychology, Prentice Hall of India, New Delhi.
11. Sampath, K. et.al (1998) Introduction to educational technology, Sterling Publishers, New Delhi..
12. Keemar.K. (1997) Educational Technology, New Age International Publishers, New Delhi.
13. Chauhan S.S.(1985) Innovations in Teaching Learning Process , New Delhi : Vikas Publishing House.
14. Rajasekar . S. (2005) Computer Education and Educational Computing , Hyderabad : Neel Kamal Publications.
15. Jyohanty Jagannath (2004) , Modern Trends in Educational Technology, " Hyderabad : Neel Kamal Publications.
16. Vedanayagam E.G. (1988) Teaching Technology for College Teachers, New Delhi, Sterling Publishers.
17. Kumar K. (1997) Educational Technology, New Delhi : New Age International Publishers.

MPSBK ~~16~~21203

DISSERTATION

Dissertation should be submitted and Viva Voce will be held after that.

The dissertation should be written in simple language. The text should be in short, clear and concise. Careless construction of sentences and incorrect grammar should be avoided. Spelling and grammar check can be done with the help of expert and computer. The dissertation material should be neatly computerized in double space, on one side in A4 size bond paper with Times New Roman, 12 font size only.

Margin

The left margin of the dissertation should be typed in 1.5 inch and the other three margins of top, bottom and right should 1 inch on all the pages.

Pagination

There is two separate series of pagination. The first is for preliminary materials which are from title page to list of appendices. For this page, number is placed in lowercase(small) Roman numbers at the centre bottom of the page.

The page number for body of the dissertation/ thesis should be in Arabic numbers placed at the top right corner of the page but for first page of each chapter there is no number. It continues for all chapters including bibliography and appendices.

Each chapter should be started on a new page.

Numbers and Symbols

In the text, the number below 10 should be spelt out in words for eg.one, nine etc, Further, the number 10 and above should be expressed in figurers et.10, 11 etc. However, sentences beginning with numbers should be always spelt out in words.

The symbol of percent that is % should be used when a number is used for eg.21% . When a number is not given, the word percentage should be used, for e.g twenty one percent.

Informed Consent Form

It is essential that the subjects, their parents and concerned institutional authorities should be informed in writing by the scholar about the nature of the study and risks involved if any during testing and training. It is a must for a study which involves collection of blood and other samples from the subjects. Further, for supplementation studies clearance from concerned ethical committee is essential.

Reference :

Footnote system is not followed for M.Phil dissertation.

As footnote is not used, in the text, the author's name and the year of publication should be given in parentheses for chapter I,III, IV & V. But only the year of publication should be given in parentheses next to author's name for chapter II. For example : Shaver (1972).

Binding :

The dissertation must be card-board bound with laminated wrapped sheet. Spiral binding will not be accepted. Wrapper colour is yellow for M.Phil.

Submission :

Number of copies of dissertation and abstract to be submitted for M.Phil is 2 to the University (Excluding Guide, College and Candidate Copies).

* * * * * * *

MPSBK 16204

VIVA – VOCE

Viva – Voce will be conducted after the submission of dissertation as well as after the valuation of theory papers. The internal marks for viva- Voce is maximum of 40 and for the external . it is for the maximum of 60 . Altogether for the maximum of 100 marks. Questions will be asked in the Viva – Voce examination based on the dissertation of the student.

MPSBK ~~16~~ 21205

INTERNSHIP

The students will visit sports analysis labs nearby. Internship will be for ten days during II Semester. The assessment of the students is internal for 100 marks. Students should design programme in sports biomechanics analysis for an individual/team in any one of the sports.

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16201 A

AREA OF DISSERTATION
(EXPERIMENTAL STUDY)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing and training procedures .

UNIT – III Research Design – Meaning, need , Importance – Features – Types. Principles of Sampling – Population – Size – Steps in Sampling. Criteria for selecting a sampling design – characteristics – Types– Random Sampling – Complex Random Sampling design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean, Median, Mode and Standard Deviation. Test for difference between mean: Independent't' test- Dependent 't' test- - Repeated Measures ANOVA -Analysis of Covariance (ANCOVA). Post-hoc test: Scheffe's and Least Significant difference test (LSD).

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

Best John W and James Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

Kothari C.R. (1985) Research Methodology, NewDelhi: Wiley Eastern Limited.

Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

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Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

2 16201 B

AREA OF DISSERTATION
(COMPARATIVE STUDY)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing .

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design- Static group comparison design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean, Median, Mode and Standard Deviation. Test for difference between mean: Independent's' test- One way Analysis of Variance(ANOVA), Factorial Design (ANOVA)- Two way, Three way- Repeated Measurers ANOVA- Post-hoc test: Scheffe's and Least Significant difference test (LSD).

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

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Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

16201 C

AREA OF DISSERTATION
(RELATIONSHIP AND PREDICTION STUDIES)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology : Selection of subjects – variables – Justification – Scheduling – Apparatus and materials – Tests – Method of Testing .

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean, Median, Mode and Standard Deviation. Correlation: Pearson Product moment Correlation – Spearman Rank order correlation- Partial and Multiple Correlation - Regression Analysis.

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

References:

Best John W and James Leahn (1996) Research in Education, New Delhi : Prentice – Hall of India Pvt. Ltd.,

Kothari C.R. (1985) Research Methodology, NewDelhi: Wiley Eastern Limited.

Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

Best, John W. and Kalm James, V.(1980) Research in Education, New Delhi: Prentice Hall of India.

Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

Garret Henry E and Woodworth,R.S (1958) Statistics in Psychology and Education, Bombay : Allied publication pvt.Ltd.,

Thirumalaisamy. R(1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

Thomson AL,(1986) The Art of Using Computers, Boyd & Frasher Boston: Publishing Co.,

Craig Williams and Chris Wragg(2006) – Data Analysis and research for sport and exercise science, London Routledge Press.

Paul R kinnear and Colin D Gray (2006) –SPSS 14 Made Simple , New York: Psychology Press.

2)
~~16~~201 D

AREA OF DISSERTATION
(CASE STUDY)

UNIT – I Fundamental Concepts : Meaning, need ,nature , Aim, objectives and Scope of the topic – purpose, Justification and usefulness of the topic, statement of the problem. Hypothesis, Delimitations and Limitations, Front materials of the dissertation – Reviews.

UNIT – II Methodology: Case Study methods: Meaning- Definition- Assumptions- Major steps- characteristics and sources- precaution in selecting an object of case studies. Advantages and limitations. Procedure to select the Case. Collection of data from the case- parents- spouse- children- physical education teacher- coaches-co players- Spectators & fans- society members Schedules and Questionnaire: Meaning of a schedule- types of schedule and steps in framing schedule- types of questionnaire: Meaning- forms- process- validity and reliability- advantages and limitations.

UNIT – III Research Design – Meaning, need , Importance – Features – Types – Principles of Sampling – Population – Steps of Sampling Design – Criteria for selecting a sampling design – characteristics – Types – Size – Random Sample – Complex Random Sampling design.

UNIT – IV : Testing Hypothesis: Concepts and calculations of the following: Descriptive statistics: Mean Median, Mode and Standard Deviation. Independent t Test - Correlation: Pearson Product moment Correlation – Spearman Rank order correlation- Chi- Square- Factor Analysis .

UNIT – V Significance of Research Report Writing – Steps in Research report Writing – Types of Reports, Mechanics of Writing a Research Report – Precautions for writing Research Reports –Thesis format- Chapterization – Tabulation – Graphs / Figures, conclusion – Recommendation – Bibliography – Appendices .

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Clarke David.H and Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey : Prentice Hall Inc.

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Jerry R Thomas and Jack K Nelson(2000) Research Methods in Physical Activities, Illnosis : Human Kinetics;

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Thirumalaisamy (1998) Statistics in Physical Education, Karaikudi: Senthilkumar publishers.

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TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

DEPARTMENT OF SPORTS MANAGEMENT AND SPORTS PSYCHOLOGY AND SOCIOLOGY

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

CHENNAI – 600 127

APPROVED SYLLABUS FOR MASTER OF BUSINESS ADMINISTRATION (SPORTS MANAGEMENT)

UNDER CHOICE BASED CREDIT SYSTEM (CBCS)

2018-2019 ONWARDS

DEPARTMENT OF SPORTS MANAGEMENT AND SPORTS PSYCHOLOGY & SOCIOLOGY

EDUCATIONAL OBJECTIVES (PEOs)

PEO-1) Graduate will have successful academic and research career.

PEO-2) Graduates will have employment in public and private sectors and resolve economic, social and environmental issues.

PROGRAMME OUTCOMES (POs)

The post graduates are able to

PO -1: Explore current trends and key concepts in sport management.

PO – 2: Understand the dynamics of Sports Industry at the national and International Level.

PO -3: Develop analytical and decision-making skills.

PO -4: Inculcate essential business and marketing skills blended with specialized knowledge in sports management.

PO -5: Identify and evaluate recent changes in sport participation and policies and their implications on sports development.

PO -6: Inculcate the knowledge on sports governance for effectively managing sport organizations

PO -7: Demonstrate mastery on Analytics (Quantitative Aspects)

PO – 8: Develop peer group Learning and Working in groups

PO – 9: Use Application of Technology tools in business

PO –10: Demonstrate ethical, Social and Environmental Responsibilities in Business Environment

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO -1: Graduates will be able to apply managerial skills for effective governance of sports

PSO -2: Graduates will be able to understand and analyze the sports environment and take better decisions to cope with external challenges

MAPPING OF PEOs WITH POs

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X	X	X	X	X	X	X	X	X	X
PEO-2	X	X		X		X	X		X	X

PSM18CT101	**PRINCIPLES OF MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS** **UNIT I** Fundamentals of Management – Evolution of Management -Planning and Decision Making : Relationship with other managerial functions – Types of plans and their implementation – Management by objectives. **UNIT II** Organizing and Staffing: - Basic concepts of organizing and staffing. Departmentalization, delegation, decentralization – span of control – line and staff functions – reasons for and resolution of conflicts between line and staff functions. **UNIT III** Directing and Leading: Leadership- processes and approaches – Transactional and transformational leadership – Motivation – Important theories – Group Dynamics – Control and coordination: Basic concepts, elements, processes and techniques of control and co-ordination. **UNIT IV** Corporate social responsibility- ethics and values in business – social audit – Government regulation of business. **UNIT V** Communication – Characteristics of a good communication system- types of communication – barriers to communication – Recent trends in business and Management. **Text books :** *1. William F Glueck and Lawrence R Jaach, Business Policy and Strategic Management, Mc Graw Hill, 1984.* *2. Koontz and O' Donnel, Management, Mc Graw Hill, 1996.*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Gain the knowledge on • Functions of Management • Management by Objectives
	CO-2	Understand different ways of communication and barriers to communication
	CO-3	Acquiring knowledge on different types of Leadership and Training

3. MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1			1			2				3
2				1				1		
3	2				3			2		

1 – Low 2- Medium 3- High

4. MAPPING (CO's AND PSO's)

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	1
2	2	
3	3	

1 – Low 2- Medium 3-High

PSM18CT 102	**ORGANIZATIONAL BEHAVIOUR** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS** **UNIT I** Introduction To Organizational Behavior – Definition of OB – Various Disciplines contributing to OB – Harwthrone Experiment - Foundation Of Individual Behavior – Need And importance Of Organizational Behavior – Nature And Scope – Framework of Organizational Behavior Models. **UNIT II** Personality – Types – Factors Affecting Personality – Perception – Importance – Factors influencing Perception – Interpersonal Perception. Learning - Types of Learning Styles – Learning Process – Learning Theories. Motivation – Theories – Importance – Types – Motivation at Work **UNIT III** Values and Attitudes – Characteristics – Components – Formation And Measurement – Group Dynamics – Group Behavior – Formation – Types Of Groups – Stages of Group Development – Conflict Management – Nature of Conflict – Types of Conflict. **UNIT IV** Leadership – Meaning – Importance. Behavioral and Contingency Theories – Leadership Styles – Leaders Vs Managers; Power and Politics – Sources of Power – Power Centers – Organization Politics - Transactional Analysis (T.A) and Work stress. **UNIT V** Organizational Structure and Design – Organization Climate – Factors Affecting Organization Climate – Importance; Job Satisfaction – Organization Development – Organization culture – Organization Change – Current Trend in OB **Text books:** *1. Stephen Robbins, Organisational Behavior, Prentice Hall of India* *2. Udai Pareek, Understanding Organisational Behavior, Oxford University Press* *3. L.M.Prasad, Organisational Behavior, Sultan Chand & Sons* *4. Fred Luthans, Organisational Behavior, McGraw Hill Book Co.*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the scope and functions of Organizational Behavior
	CO-2	Identify the difference between Leader and a Manager
	CO-3	Understand the significance of Motivation

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	1			1			2		3
2	2		1					3		
3						2				2

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2		3
3		2

1 – Low 2- Medium 3-High

PSM18CT103	**BUSINESS LAWS** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS** **UNIT I** Indian Contract Act 1872: Contract – Meaning – Essential elements – Nature of contract – Performance of contract – Discharge of contract – Remedies for breach of contract – Quasi contracts. Indemnity and guarantee – Bailment and Pledge. **UNIT II** Law of Partnership: Introduction – Formation – Kinds of Partners – Authorities, Rights and Liability of Partners – Dissolution of Firm. **UNIT III** Sale of Goods Act: Sale and Agreement to sell. Condition and Warrantee, Transfer of Ownership – Performance of Contract of Sale – Remedies for Breach of Contract. Negotiable Instruments Act: Kinds of Negotiable Instruments – Dishonor and discharge of Negotiable Instrument. **UNIT IV** Company Law – Meaning, Definition, Formation of Company, Rights, Duties and Liabilities of Directors, Winding up of Company. **UNIT V** The Consumer Protection Act 1986. The Information Technology Act 2000 - Right to Information Act. Securities and Contracts Regulations Act 1956 - SEBI Act 1992. Depository Act 1996 - Foreign Exchange Management Act 1999. Competition Act 2005 **Text Books**: 1. *N.D.Kapoor, Mercantile Law – Sultan & Sons* 2. *Vakul Sharma, Cyber Law – Mac Milan* 3. *Akhileshwar Pathak, Legal aspects of business- Tata McGraw-Hill* 4. *Relevant Bare Acts*

2.	**COURSE OUTCOMES: students are able to**	
	CO-1	Understand the significance of legal aspects in Business
	CO-2	Identify the essential elements of Business Contract
	CO-3	Examine the Rights and Duties of Business Partner.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	2			2					3
2	2		1		1					1
3		1				2				2

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	2
2		1
3	2	3

1 – Low 2- Medium 3-High

PSM18 CT104	**MANAGEMENT ECONOMICS**
	Instruction : 4 hr / week ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS**

UNIT I

Basic Concepts, Scope, Importance and Definitions Relevant to Managerial Economics- Factors Influencing Managerial Decision – Managerial Economics and other Disciplines.

UNIT II

Demand - Meaning - Types – Determinants – Demand Functions – Demand Elasticity and Demand Forecasting Methods.

UNIT III

Production Function – Factor productivity and Returns to Scale – Statistical Production Function – Managerial uses of Production Function – Costs Concepts - cost analysis, breakeven analysis, short run and a long run cost functions, Cost – Output Relationship.

UNIT IV

Price - Determinants of Price - Pricing under Different Market Structures- Price Discrimination- Pricing of Joint Products- Pricing Methods in Practice.

UNIT V

Money Supply & Demand for Money – Inflation – Business Cycle - Government Policy – Fiscal & Monetary Policy – Indian Government Policy, National Income & Current Issues.

Text Books:

1. *Dominick Salvatore, "Managerial Economics in a Global Economy" 4th Edition, Thomson South-Western*
2. *V.L.Mote et al, "Managerial Economics", Tata McGraw-Hill Publishing Company Limited, India.*
3. *John Sloman, "Economics", Pearson Education, India.*
4. *Joel Dean, "Managerial Economics", Prentice – Hall of India.*
5. *Sumitra Pal, Managerial Economics, Cases & Concepts, Mac Millon India Ltd.,*
6. *G.S.Gupta, Macro Economics, Tata McGraw Hill Company Ltd., India*

2.	**Course Outcomes*:* Students are able to**	
	CO-1	Identify the Importance of Managerial Economics
	CO-2	Take effective Decision on Pricing Policy
	CO-3	Analyze the Break Even Point to decide on Quantum of Production

3

MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	1				1				1
2			3	1		2	1		3	2
3				2			3		2	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	
2	2	3
3		2

1 – Low 2- Medium 3-High

PSM18CT105	**MANAGEMENT ACCOUNTING** ***Instruction :4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS** **UNIT I** Basics of accounting – concepts and conventions – Management Accounting– Definition, Nature and Scope – Functions – Role of Management Accounting – Tools of Financial Analysis and Planning. **UNIT II** Preparation of Trial Balance, Trading Account, Profit and Loss Account and Balance Sheet of Business units. **UNIT III** Interpretation and Analysis of Financial Statements - Comparative Statement, Common Size Statement, Trend Analysis, Ratio Analysis– Liquidity, Profitability, Turnover and Proprietary Ratios – Interpretation of Ratios – Application to Decision Making – Uses and Limitation – Fund Flow and Cash Flow Statement **UNIT IV** Concept of Marginal Cost – Contribution – Applications of Marginal Cost, Cost Volume Profit analysis -decision making- make or buy, own or lease. Activity – Based Costing (ABC). **UNIT V** Standard costing and variance analysis- material and labour overhead- Budget and Budgetary control reporting various budgets - flexible budgets - ZBB. **Text Books:** 1. *Manmohan & S.N.Goyal, Principles of Management Accounting, Sahitya Bhavan Agra, 2000.* 2. *Jain & Narang – Advanced Accounting, Kalyani Publishers New Delhi* 3. *M.Y.Khan and Jain – Management Accounting, Tata McGraw Hill Publishing Co Ltd.,* 4. *T.Ramachandran – Accounting & Financial Management, Scitech Publications Chennai* 5. *S.N.Maheswari – Management Accounting, Sultan Chand & Sons, New Delhi*
2.	**COURSE OUTCOMES: Students are able to**

CO-1	Understand the Basic Concepts in Accountancy
CO-2	Prepare and Analyze Financial Statements
CO-3	Offer Concrete Suggestions for Financial Planning and Budgeting

3. **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2				1					2
2			3			2	3		3	
3			3		1		2		3	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2	2	
3	1	2

1 – Low 2- Medium 3-High

PSM18 CT106	**QUANTITATIVE METHOD IN BUSINESS**
	Instruction : 3hr / week ***Credits : 2*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:**

UNIT I

Probability – Introduction – Basic Concepts in Probability. Baye's Theorem; - Theory of Distributions – Binomial, Poisson and Normal. Decision Theory – Decisions under risk & uncertainty – Decision tree analysis.

UNIT II

Basic Concepts of differentiation and integration – Concepts of Marginal, average and total cost – Economic Order Quantity, Break Even Analysis. Presentation of Statistical Data – Tables and Graphs – Frequency Distribution and Histogram.

UNIT III

Basic Statistics – Introduction – Measure of Central Tendency & Dispersion – Mean, Median, Mode, Range and Weighted Average.

UNIT IV

Correlation and Regression- simple, partial and multiple correlation- simple, partial and multiple regressions- estimation using regression line.

UNIT V

Sampling Theory – Basic Concepts in sampling theory – T Test, Z Test – One way ANOVA, Two way ANOVA - χ^2 Test – Goodness of fit and Independent of Attributes.

Text Books:

1. *Statistics for Management by Richard I. Levin David S Rubin*
2. *Business Statistics by S.P.Gupta*
3. *Quantitative Techniques for Management by P.R.Vittal*
4. *Business Statistics by V.K.Kapoor.*

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Acquire in–depth knowledge on Probability Distribution
	CO-2	Identify the significance of Mathematics in Business
	CO-3	Understand the Basics concepts in Statistics

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		2	1			3		2	1
2	2		3		2		3		3	1
3	3		2				3		3	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	2
2		3
3	2	2

1 – Low 2- Medium 3-High

PSM18 CT107	**OPERATIONS MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **UNIT I** Production & Operations Management – Meaning, Scope, Functions, Relationship between POM & other functional areas of Management. Classification of Production Systems – Intermittent, Job shop, Batch, Continuous, Flow and Mass Production Systems. Product Design – Reverse Engineering **UNIT II** Process Planning – Steps in Process Planning – Make or Buy Decision. Computer Integrated Manufacturing – Computer Aided Design - Computer Aided Manufacturing – Flexible Manufacturing Systems. Production Planning & Control – Preplanning – Fore Casting – Scheduling - Dispatching – Routing – Expediting **UNIT III** Plant Location – Factors Influencing Plant Location, Importance of Environmental Health & Safety factors in deciding the location of plant - Cost Factor – Semi Quantitative Techniques, Plant Layout – Principles, Flow Patterns, Types of Plant Layout. Capacity Planning – Types of Capacity, Capacity Decision, Capacity Planning Strategies. **UNIT IV** Inventory – Definition, Classification of Inventories, Purchase Model, Manufacturing Model, Just in Time, Selective Inventory Control Techniques. Statistical Quality Control – Control Charts –Work Study – Method Study – Symbols, Charts, Diagrams. Time Study. **UNIT V** Maintenance Management – Types of Maintenance, Procedure for Maintenance. Fundamentals of Purchasing – Functions of Purchasing, Purchasing Procedure, Vendor Rating, Stores Management – Functions of Store Keeping, Store Records, Stock Verification. **Text Books**: *1. Senthil. M, Production & Operations Management, Pearson Education* *2. Monks, Joseph G, Operations Management, McGraw Hill International* *3. Adam Jr. Ebert, Production & Operations Management* *4. Buffa E.S., Modern Production & Operations Management*

2.	**COURSE OUTCOMES: Students will be able to**	
	CO-1	Gain knowledge on functions of Production and Operations
	CO-2	Classify the different Production Systems
	CO-3	Develop the steps in Process Planning

3. MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2				2	2				2
2		2		1					3	
3	1		3							

1 – Low 2-Medium 3- High

4. MAPPING (CO's AND PSO's)

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2	2	
3	2	

1 – Low 2- Medium 3-High

PSM18 CT108	**MARKETING MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **UNIT- I** **Introduction to Marketing Management**: Market and Marketing – the Exchange Process – Functions of Marketing – Importance of Marketing – The Marketing Process: Marketing Mix – The Traditional 4Ps – the Modern Components of the Mix – Developing an Effective Marketing Mix – Marketing Planning and Control. **UNIT - II** **Marketing Environment**: Environmental Scanning – Techniques of Environment Scanning – Analysing the Micro and Macro – Difference between Micro and Macro Environment – Segmentation, Targeting and Positioning: Concept of Market Segmentation – Benefits of Market Segmentation – Requisites of Effective Market segmentation – The process of Market segmentation - Bases for Segmenting Consumer Markets. **UNIT - III** **Consumer Buying Behaviour**: Types of Buying Decision Behaviour – Henry Assael Model – Consumer Buying Decision Process – Buyer Decision Process for New Products – Buying Motives – Buyer Behaviour Models – Understanding the Marketing Research: Marketing Research Process – Customer Relationship Management(CRM): process – Significances. **UNIT - IV** **Product Management**: Classification of Products – Product Line Strategies – Product Mix Strategies: New Product Development – Packaging and Labelling – Product Life Cycle(PLC) – Brand and Branding – Advantages and Disadvantages of Branding – Brand name Selection – Types of Brands – Brand Equity – Brand Positioning – Pricing: Pricing Objectives – Factors Affecting Price Decisions – Pricing Policies/Methods – Significance of pricing. **UNIT - V** **Promotion Management**: Introduction to Advertising – Advertising Development – Budget Allocation – Media Selection – Fundamentals of Sales Promotion – Basics of Public Relations and Publicity – Personal Selling – Personal Selling Process – Sales Management Basics – HR Practices in Sales Management – Training and Compensation – Distribution Management: Need For Marketing Channels – Types of Channels – Decisions Involved in Setting up the Channel – Channel Management Strategies – Introduction to Logistics Management. **TEXT BOOKS:** 1. *Philip Kotler, Kevin Lane, Abraham Koshy-Marketing Management – A South Asian Perspective-Pearson/Prentice Hall India Ltd* 2. *Rajan Saxena – Marketing Management-Tata McGraw Hill* 3. *Ramaswamy & Namakumary-Marketing Management-Global Perspective-Indian Context-Mac Millon India Ltd*

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Understand the Fundamentals of Marketing
	CO-2	Identify the different Marketing Environments
	CO-3	Examine the Buyer Behaviour for effective Marketing

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			2	1					
2	1	2		2		3			2	1
3	1		3		1			1		

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	
2	3	1
3	2	1

1 – Low 2- Medium 3-High

PSM18 CT109	**FINANCIAL MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **UNIT I** Nature, Scope and Objectives of Finance Function — Role of finance Manager. Sources of long term finance-Equity Shares, Preference shares, Debentures, borrowing from lending institutions- short term financing through money market, International sources of Financial Instruments. **UNIT II** Capital budgeting- Concept- Significance- Methods of appraisal- Pay back method, Average return, Net present value, Internal rate of return - Simple Problems. **UNIT III** Cost of Capital- Significance-Concept-Cost of debt, Equity, Preference share Capital, Retained Earnings, and Weighted Average cost of Capital. **UNIT IV** Capital Structure- Determinants - Optimal Capital Structure- Capital Structure theories- Net income approach- Net operating income approach - MM approach - Dividend policies- Types – Dividend theories - Valuation under Gordon and Walter Theory - MM theory - Factors affecting dividend decisions. **UNIT V** Working Capital Management-Definition –Types of Working Capital, Factors affecting working. Capital requirements - Management of cash - optimum level of cash - stochastic model. Management of receivables. Inventory Management-Inventory Level and Techniques. **Text Books:** *1. IM Pandey – Financial Management, Vikas Publishing Co, New Delhi.* *2. S.N.Maheswari – Financial Management, Sultan & Sons, Delhi* *3. M Y Khan & P K Jain - Financial Management, Tata McGraw Hill, New Delhi.* *4. Prasanna Chandra – Financial Management, Tata McGraw Hill, New Delhi.* *5. Van Horne J. Financial Management & Policy Pearson Education, Delhi 2002.*

2	**COURSE OUTCOMES: Students will be able to**	
	CO-1	Formulate the Objectives and role of Financial Management
	CO-2	Identify the different Sources of Finance
	CO-3	Gain the knowledge on different Theories on Dividend

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	2				2				2
2			1	2			2			
3			2	1			3		2	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	
2	2	2
3	3	

1 – Low 2- Medium 3-High

PSM18 CT110	**HUMAN RESOURCE MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:** **UNIT I** Meaning, Nature and Scope of HRM - Personnel Management Verses HRM-Importance of HRM-Functions of HRM-Classification of HRM Functions- Organization of HRM Department-Qualities and Qualifications of HRM Managers **UNIT II** Meaning and Objectives of HRP – Benefits of HRP, Objectives of Recruitment – Company strategies and recruitment strategies – Job Analysis – Purpose & Techniques – Job Description – Job Specification –Searching for prospective Employees/Sources of Recruitment – Traditional sources – Modern sources – Factors affecting Recruitment. **UNIT III** Selection - Meaning and definition – Essentials of Selection Procedure – Steps in Selection Procedure –Application form – Written examination – Preliminary Interview – Psychological Tests – Final Interview – Medical examination – Reference checks – Line Manager's Decision – Job Offer – Employment – Placement– Induction and Retention of Employees. **UNIT – IV** Training & Development – Purpose – Need – Importance – Techniques (on the job & off the job) – Evaluation – Benefits – Management Development Programme – Knowledge Management - Job Enlargement – Job Enrichment – Job Evaluation – Meaning – Purpose - Techniques. Quality of working life – Issues in Quality of Working life– Quality Circles –Management By Objectives. **UNIT V** Wage & Salary Administration: Compensation Plan – Individual – Group – Incentives – Bonus – Fringe Benefits. Performance Appraisal – Meaning - Need and Importance – Objectives – Methods and Modern Techniques of Performance Appraisal – Requisite of Good Appraisal Plan – Problems in Performance Appraisal – Corporate Social Responsibility. **Text Books:** 1. *Venkatraman C.S & Srivastava G.K. Personnel Management and Human Resources, Tata MoGraw Hill, 1991* 2. *Arun Monappa, Industrial Relations, Tata MoGraw Hill, 1987* 3. *Dale Yoduer & Paul D Standohar Personnel Management and Industrial Relations, Sterling Publishers, 1990* 4. *C.B Mamoria, " Personnel Management" Himalaya Publishing House, 1995* 5. *P Subba Rao, " Essentrals of Human Resource Management and Industrial Relation" Himalaya Publishing House, 2004.*

2	**COURSE OUTCOMES: Students will be able to**	
	CO-1	Examine the Scope of Human Resource Management
	CO-2	Identify the Functions and Role of Human Resource Manager
	CO-3	Develop the need for Training and Development

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			1						
2	2	1	2			2		3		3
3	1				2				2	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1		3
2	2	2
3	3	

1 – Low 2- Medium 3-High

PSM18 CT111	**OPERATIONS RESEARCH**
	Instruction : 4 hr / week ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:**

UNIT I

Introduction to Operations Research – Linear Programming Problem – Graphical solution – Simplex Method and Special cases in linear programming.

UNIT II

Transportation Model – Initial Basic Feasible Solution – NWCR method – Vogel's Approximation method – LCM - Optimum solution – MODI Method.

UNIT III

Assignment problem - Travelling Salesman Problem- Queuing theory - Elements of Queuing system – Characteristics of Queuing System – Single channel Single server system – Single channel multi server system – Application.

UNIT IV

Sequencing problem - Network Analysis – Rules for constructing a network diagram –Merits and demerits of CPM & PERT.

UNIT V

Game theory – Saddle point - Applications of Game theory -Simulation – Monte Carlo Simulation. Replacement problems.

Text Books:

1. *N.D.Kapoor, Mercantile Law – Sultan & Sons*
2. *S.D. Sharma, Operations Research*
3. *Hamdy A. Taha, Operations Research – An Introduction*
4. *Gupta & Manmohan, Problems in Operations Research, Methods and Solutions.*
5. *Dharani Venkatakrishnan, Operations Research, Principles and Problems.*

2	**COURSE OUTCOMES: Students will be able to**	
	CO-1	Understand the concept of Optimization Techniques
	CO-2	Make effective Decision through resource management techniques
	CO-3	Acquire Knowledge on Network Construction for Project Management

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		2	2		2				1
2			3		1		3		3	2
3	3		2				3		3	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	1	3
2	3	2
3	2	

1 – Low 2- Medium 3-High

PSM18 CT112	**MANAGEMENT INFORMATIONS SYSTEMS** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:** **UNIT I** Information system: Managers' view – Concepts of systems – Strategic uses of Information Technology. Business perspective on information systems – Dimensions of information systems - Contemporary Approaches to Information Systems – Learning to Use Information Systems – New Opportunities with Technology. **UNIT II** Computer System Resources: Computer Hardware and Computer software – File and DBMS – Distributed System – Internet and Office Communications. **UNIT III** Application of Information System to functional Business Areas: Operational Information System – Tactical and Strategic Information system. Major types – ESS – DSS – MIS – TPS – Systems from a functional perspective – Introduction to BPO & KPO **UNIT IV** Planning and development of Information system: Systems as planned organizational change – Business process reengineering & process improvement – Overview of Systems Development – System analysis – Systems design. Alternative application development approaches. **UNIT V** – Enterprise Resource Planning – Introduction – Related Technologies – ERP Modules – Benefits of ERP and End user computing – Security and ethical issues of Information Systems. **Text Books**: 1. *Kenneth C. Laudon & Jane P.Laudon – Management Information Systems-Managing the Digital Form-Eighth Edition, Eastern Economy Edition* 2. *Alexis Leon, Enterprise Resource Planning – Tata McGraw Hill Publishing Co. Ltd., New Delhi – 2005* 3. *Raymond Meleod, JR Information Systems – Mac Millan Publishing Co. ltd – 4th Edition.* 4. *Gerald V.Post David L. Anderson, Management Information System-Solving Business Problems with Information Technology – Tata McGraw Hill Publishing Co. ltd, New Delhi* 5. *Gordan B.Davis Margrette H.Olsan, Management Information System, Conceptual Foundations, Structure & Development – Second Edition – Tata McGraw Hill Co. Ltd, New Delhi*

2	**COURSE OUTCOMES (COS): students are able to**	
	CO-1	Examine the Business Application of Information System
	CO-2	Analyze the different approaches to Information System
	CO-3	Acquire in–depth knowledge on Enterprise Resource Planning

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	2		2		1				
2	2				1	2			1	2
3	1		3	2					2	1

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	
2	2	2
3	2	3

1 – Low 2- Medium 3-High

PSM18 CT113	**TOTAL QUALITY MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:** **UNIT I** Introduction to Total Quality Management – Leadership – Information and Analysis –Managing in 21st century- global environment- cultural and ethical environment. **UNIT II** Human Resource Development and Management – Management of process quality – Customer focus and satisfaction – Bench marking. **UNIT III** Organizing for Total Quality Management – Productivity and Quality – Strategic Quality Planning. Cost of Quality. **UNIT IV** Processes and Quality tools – The Concept of Quality process – Total Quality Management – Quality improvement tools – Understanding process variation, Managing for quality- Japanese Management. **UNIT V** ISO 9000 Overview- Important steps in ISO Registration- ISO in Indian Companies. Criteria for Quality programs, Universal Standards of Quality – Reengineering. **Text Books :** 1. *Vincent K. Omachonu & Joel E. Ross, Principles of Total Quality.* 2. *Ron Collard, Total Quality.* 3. *Townsend & Gebhardt, Commit to Quality.* 4. *John Bark, Essence of TQM.* 5. *Willborn & Cheng, Global Management of Quality Assurance Systems.*

2	**COURSE OUTCOMES(COS): students are able to**	
	CO-1	Understand the significance of Total Quality Management
	CO-2	Formulate the new Strategies for Quality Planning
	CO-3	Develop the Bench Marking using Quality Tools

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1		2				3
2	1		3		2	1			2	2
3		2	2				2		2	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	3
2	2	
3	2	1

1 – Low 2- Medium 3-High

PSM18 CT114	**STRATEGIC MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:** **UNIT I** Overview of Strategic Management: Strategic Planning– Strategic Management process – Mission – Vision and Objectives. Changing Business Environment – Globalization – Technological Changes– Strategic responses of Organizations to Changing Environment. **UNIT II** Environment and Resources Analysis: Environment Analysis – Industry Analysis – Competitive Analysis – Internal Analysis – SWOT Analysis. Human Resource and Business Strategy – Changing work Roles – Portfolio – Process and Structure Related Strategic Responses and SHRM system. **UNIT III** Strategy Formulation and Choice: Corporate level strategy – Global Strategy – Business level strategy – Strategic Analysis and choice. Strategic HRM Practices and Facilitators. **UNIT IV** Strategy Implementation: Activating strategies – Structural Implementation – Behavioral Implementation – Functional and Operational Implementation. Management of Careers – National Cultures and International Management. **UNIT V** Strategy Evaluation and Control: Overview – Strategic control process – Operational control – Techniques – Future of Strategic Management. Economic Indicators of Human Resource Management. **Text Books:** *1.Arthur A Thompson and AJ Stickland III Strategic Management, New Delhi Tata McGraw Hill, 2002.* *2.Gerry Johnson Exploring Corporate Strategy Prentice Hall 2002* *3.Maisana Mazzucato Strategy for Business, New Delhi, Sage Publication 2002* *4.Craig Fleisher et.al. Strategic and Competitive Analysis Prentice Hall 2002* *5. Shaun Tyson. Strategic Prospects for HRM* *6. Miller & Dass Business Policy & Strategic Management* *7. V. Subba Rao Business Policy & Strategic Management* *8. Bhaskar Rao Ethical Choices in Business*

2	**COURSE OUTCOMES(COs):Students will be able to**	
	CO-1	Gain knowledge on different Business Environment
	CO-2	Make SWOT Analysis for the given Business Condition
	CO-3	Identify the Economic Indicators in Human Resource Management

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	3				2				3
2			3	2	3					
3	1			1					2	2

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	
2		2
3	2	1

1 – Low 2- Medium 3-High

PSM18CT115	**RESEARCH METHODS IN BUSINESS** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:** **UNIT- I** Research: Meaning – Scope and Significance – Types of Research – Research Process -Problems in Research – Significance of Research in Social Sciences – Identification –Selection and formulation of problem – Review of Literature – Formulation of Research Design – Features of Good Design – Factors affecting Research Design – Evaluation of Research Design. **UNIT- II** Formulation of Hypothesis-Types, Testing – Sampling Design: Censes Method and Sampling Method – Principles of Sampling – Methods of Sampling –Probability and Non-Probability Sampling Methods – Selection of a sample – Size – Criteria of Good Sample Design. Scaling Techniques: Meaning, Types of Scale - Scale Construction Techniques. **UNIT- III** Data Collection: Types of Data – Sources of Data – Primary Data and Secondary Data -Data Collection Methods – Observation – Survey – Questionnaire – Interview Schedule - Effective in Interview Techniques – Constructing Questionnaire – Format of Good Questionnaire – Differences between Schedule and Questionnaire – Pilot Study. Analysis and Processing of Data: Meaning – Editing – Coding and Tabulation – Diagrams. **UNIT- IV** Tests of Significance – Assumption about parametric and non-parametric tests – Parametric Tests –Chi Square, T-Test, F-Test and Z Test. Non-Parametric Tests U-Tests – Kruskal Wallis – Introduction to ANOVA – One Way –Two Way –Multivariate Analysis – Correlation and Regression. **UNIT- V** Report Writing –Layout of report – Mechanics of writing Research Report –Norms for using tables – Charts and Diagrams – Appendix – Index and Bibliography. ***Reference Books:*** *1.William C E mory, Business Research Methods, Richard D Irwin, NJ* *2.Donald R Cooper, Business Research Methods 7th Ed, McGraw Hill, 2001* *3.Krishnaswami OR, Methodology of Research for Social Science, Himalaya, Mumbai, 2001* *4.Anderson J. et.al, Thesis and Assignment writing, Wiley Eastern*

2	**COURSE OUTCOMES(COs):Students will be able to**	
	CO-1	Understand the Significance of Research
	CO-2	Formulate and Identify the Research Problem
	CO-3	Apply the knowledge of Statistics in Business Research

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			2						2
2		3			1				2	2
3	2		3			2	3		3	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	
2	1	2
3	3	1

1 – Low 2- Medium 3-High

PSM18 AE101	**BUSINESS COMMUNICATION** ***Instruction : 4 hr / week*** ***Credits : 2*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS:** **Unit–I: Basic forms of communication** Need for Communication; Forms of Communication Self-Development and Communication: Factors Affecting Communication; Essentials of good Communication Skills. **Unit–II: Corporate communication** Types of Corporate Communication; Barriers of Communication: **Principles of Effective Communication** - The Effective Communication Skills Questionnaire; Humour in Communication; Interpersonal Communication; Intrapersonal Communication; Understanding Audience Psychology. **Unit–III: Writing skills: Business letters** Written Communication—Significance In Business; Essentials of a Business Letter; Parts of a Business Letter; Forms of a Business Letter; Types of Business Letters; Writing a Good Business Letter. **Internal Communication -** Letters within the Organization; Letters to Staff; Circulars and Memos; Office Notes, Motivational Communication; Letters from Top Management; Writing without Hurting; Reminders and Follow-up; Employee Newsletters. **Report writing** - Types of Reports; Essentials of Good Report Writing; Committee Reports; Annual Reports. **Unit- IV: Public Relations** Definition of Public Relations; Benefits of PR in Sports; Tools-Media; Press Release; Press Conferences; Media Briefings; Non-media initiatives; How to manage media. **Unit-V: Sports Journalism & Media** Media as a Vehicle; Media as a Dashboard; Evolving nature of Sports Media in India; Opportunities in Sports Journalism; Big Data in Media. **References** 1. Effective communication- Urmila Rai and S.M. Rai (Himalaya Publishing House). 2. Business Communication-Doctor and Doctor (Sheth) Publishers Pvt. Ltd.) 3. Public Relations – A Case Based Approach – Jery Hendrix & Darrell C. Haynes. 4. The Significance of Sponsorship as a Marketing Tool in Sports Events – Oladunni Roselyn Abiodun

2	**COURSE OUTCOMES (COs): students are able to**	
	CO-1	Probe the need and Importance of Business Communication
	CO-2	Identify the Barriers in Communication
	CO-3	Communicate effectively and Develop Good Business Communication Skills

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	2		1	1					2
2	2					2				
3	2	2	3	2		1			2	3

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	
2	2	3
3	3	

1 – Low 2- Medium 3-High

PSM18 AE301	**PROFESSIONAL ETHICS** *Instruction : 2hr / week* *Credits : 2* *Assessment : 40 + 60*
1	**SYLLABUS:** **UNIT I** **INTRODUCTION:** Definition & nature Business ethics, Characteristics, Ethical theories; Causes of unethical behavior; Ethical abuses; Work ethics; Code of conduct; Public good. **UNIT II** **ETHICS IN SPORTS**– Nature, Characteristics and Needs, Ethical practices in the field of Sports, Sports Code of Conduct. **UNIT III** **SPORTS AS A PROFESSION**– Conflict between organization demand, Individual needs and professional ideal, Conflicts the Sports Managers face. **UNIT IV** **SOCIAL AND ETHICAL** - Responsibilities of different Sports Association - Sports Clubs - Sports Manager - Sports Coach- Sports Persons. Morale of Sportsmen. **UNIT V** **ETHICAL VALUES**- Importance, Sources of Value System, Types, Loyalty and Ethical Behaviour. - Respect for elders, Hierarchy and Status, non- violence and tolerance, cooperation. Rights and Duties. Holistic relation between Man- Attitudes- Beliefs. Ethical value system – its application in the field of sports. **REFERENCES** 1. S.A. Sherlekar, Ethics in Management, Himalaya Publishing House, 2009. 2. Beeslory, Michel and Evens, Corporate Social Responsibility, Taylor and Francis, 1978. 3. Philip Kotler and Nancy Lee, Corporate social responsibility: doing the most good for company and your cause, Wiley, 2005. 4. Subhabrata Bobby Banerjee, Corporate social responsibility: the good, the bad and the ugly, Edward Elgar Publishing, 2007. 5. Larue Tone Hosmer and Richard D., The Ethics of Management, Irwin Inc., 1995. 6. Joseph A. Petrick and John F. Quinn, Management Ethics - integrity at work, Sage, 1997.
2	**COURSE OUTCOMES (COs): students are able to**

	CO-1	Understand the nature of Business Ethics
	CO-2	Analyze the role Ethics in Sports
	CO-3	Resolve the Sports Conflicts through Ethical principles

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2									3
2	2	2		1	1			2		3
3			2	1					2	3

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	1	3
2	2	3
3		2

1 – Low 2- Medium 3-High

PSM18 SE201	**E - COMMERCE** *Instruction : 2hr / week* *Credits : 2* *Assessment : 40 + 60*
1	**SYLLABUS:** **Unit I** **Fundamental of E-Commerce** Traditional commerce and E commerce – Internet and WWW – role of WWW – value chains – strategic business and Industry value chains – role of E commerce. Driving forces – benefits and limitations of e-commerce. **Unit II** **Business Applications in E-Commerce** Retailing in E-commerce – market research on internet customers – e-commerce for service sector – Advertising in e-commerce – B2B ecommerce. **Unit III** **E-Commerce Infrastructure** Intranet, Internet & Extranet – Structure, Architecture, Applications & Business Models, search engines **Unit IV** **E-Commerce Payments and Security** Computer security classification – copy right and Intellectual property – electronic commerce threats - strategies for marketing – sales and promotion E-Payments and Internet fraud. Principles of e-fund transfer, credit and debit card usage, E-check and unified payment systems. **Unit V** **Issues in E-Commerce** Intelligent Agents - Definition and capabilities – limitation of agents – security –Legal, Ethics and Privacy issues – Protection needs and methodology - Consumer protection, Cyber laws, contracts and warranties. Taxation and Encryption Policies. **References Books:** 1. Efraim Turban et al., 'Electronic Commerce – A managerial perspective', Pearson Education Asia 2. Kalakota et al, 'Frontiers of Electronic Commerce', Addison Wesley. 3. Sandeep Krishnamurthy, 'E-Commerce Management – Text and Cases', Thomson Learning. 4. Greenstein Firsman, 'Electronic Commerce', Tata McGraw Hill. 5. Nabil Adam et al, 'Electronic Commerce – Technical, Business and Legal Issues'. Prentice Hall.

2	**COURSE OUTCOMES (COs): students are able to**	
	CO-1	Understand the Fundamentals of E-Commerce
	CO-2	Identify the major Issues related to Online Marketing
	CO-3	Examine the different Business Models available for E-Commerce

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2				1					2
2			1	3		2			2	
3	1	2		1					3	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2	2	
3	3	1

1 – Low 2- Medium 3-High

PSM18 DE101	**SPORTS ORGANIZATION AND ADMINISTRATION** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1	**SYLLABUS** **UNIT I** Social Context for Modern Sports: Need for New Structure in Sports Today. International Sports Environment: IOC and International Federations – National Sports Environment: National Olympic Committees – National Federations – Governmental and Quasi – Governmental Organizations – Sports Conflicts –Conflicts arising from Anti-Doping Tests. **UNIT II** Origin and Operations of Sports Organizations – Defining the Legal Status – Social Profile of the Sports Organization – Choosing a type of Organization: Environmental Indicators – Power and Authority – Delegation of Responsibilities – Organizational Charts – Sports Identity Vs Image – Establishing a Sports Identity. **UNIT III** Sports Organizations and their Environment: The nature of the Organizational Environment – Research on Organizational Environments – Controlling Environmental Uncertainty: Other Perspectives on the Organizational Environment. Relationship between Organizations's Environment and its Structure. **UNIT IV** Sports Organizations and Technology: Technology – Research on technology and Organizations – Critiques of the Technology Imperatives – Micro-Electronic Technologies – Relationship Between technology and Organizational Structure. **UNIT V** Cases of Strategic Approaches by some Olympic Sports Organizations: FIVB – FIH - IPC – WADA – ISC – ZOC – OCM – OS – Measuring the Performance of Olympic Sports Organizations. ***Reference Books:*** 1. *Ruben Acosta Hernandez, Managing Sports Organizations, Human Kinetics.* 2. *Trevor Slack, Milena M. Parent, Understanding Sports Organizations.* 3. *Jean – Loup Chappelet and Emmanuel Bayle, Strategic and Performance Management of Olympic Sports Organization.*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Examine the Social Context of Sports
	CO-2	Understand the significance of Technology in Sports
	CO-3	Measure the Performance of Olympic Sports Organizations

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2				1			2		2
2	2			2					3	2
3		3	3			2			2	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2	3	1
3	3	2

1 – Low 2- Medium 3-High

PSM18DE102	**SPORTS MANAGEMENT – PRINCIPLES AND PRACTICES** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS** **UNIT I** Managing Sports in the 21st Century: Defining Sports and Sports Management – Nature and Scope of the Sports Industry – Unique Aspects of the Sports Management – Sports Management Competencies – Future Challenges and Opportunities for Sports Managers – Future of Sports Industry/Organizations. **UNIT II** The Sports Manager: Basics of Sports Management – Managing in the Sports Environment – Managing People and Administrative Units – Management Functions in sports – Motivating Abilities: Fundamentals. **UNIT III** Planning in Sports Organizations: Planning Process – preparing the Organization for Planning – Participatory Strategic Planning – Long Term Planning – Creating a Medium Term National Plan. **UNIT IV** Controlling in Sports Organizations: Fundamentals of Budgeting – Preparing Budget – Allocating Resources – Control as Measurement and as Accountability – Financing and Budgeting Operations – Result – Oriented Budgeting – Controlling Deviations – The Challenges in Sports Today – Rising to New Challenges – Serving the Sports Organization's Clients. **UNIT V** The Future of Sports Management: Why Sports Managers need to understand Research – Commercial and Academic Researchers in Sports Management – Sports Management Research: Key Concepts – Research Process – Current Challenges in Sports Management Research – The Future of Sports Management Research. ***Reference Books:*** 1. *Jane B.Parks, Jerome Quarterman and Lucie Thibault, Contemporary Sports Management.* 2. *Ruben Acosta Hernandez, Managing Sports Organizations, Human Kinetics.* 3. *Trevor Slack, Milena M Parent, Understanding Sports Organizations.*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Manage the Sports Environment through Sports Research
	CO-2	Possess an Idea on Sports Budgeting
	CO-3	Assess the Challenges in Sports Management

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1		2				2
2	2		2	1			3		2	
3		3			2				2	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2	3	2
3	3	2

1 – Low 2- Medium 3-High

PSM18 DE103	**SPORTS MARKETING** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS** **Unit-I** **Sports marketing**: Definition – Marketing Myopia in Sport – Uniqueness of Sports Marketing – Model of the Sports Industry – Implementation of Sports Marketing Programme. **Unit-II** **Perspectives in Sports Consumer Behavior**: Environmental Factors – Individual Factors – Decision Making for Sports Involvement – Role of Research in Sports Marketing: Types of Primary Market Research – Common Problems in Sports Marketing Research. **Unit-III** **The Sports Product**: Its Core and Extensions – Key Issues in Sports Product Strategy – Managing Sports Brands: Benefits and Development of Brand Equity – Sales: Definition – Typical Sales Approaches Used in Sports – Selling Sports to the Community. **Unit-IV** **Pricing Strategies**: The Basics of Pricing – Core Issues – Special Pricing Factors – Advertising Media for Sports – Promotional Concepts, Practices and Components – Sponsorship: Definition – Growth of Sponsorship – Evaluating and Ensuring Sponsorship Effectiveness – Selling the Sponsorship – Ethical Issues. **Unit-V** **Place/Product Distribution**: Placing Core Products and their Extensions – The Facility – Marketing Channels – The Product-Place Matrix – Electronic Media Landscape – Media Impact on Sport Public Relations – Integrating Sales, Promotion, Sponsorship, Media and Community Relations – Cross Impacts among the Five P's – the Legal Aspects of Sports Marketing. ***References:*** 1. *Bernard J Mullin, Stephen Hardy, William A Sutton, Sport Marketing, Human Kinetics.*

2.	**COURSE OUTCOMES: students are able to**	
	CO-1	Identify the Uniqueness of Sports
	CO-2	Understand the Behaviour of Sports Consumers
	CO-3	Bring out the effective Strategies for Sports Marketing

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1	2			1		
2	1		2					2	2	2
3	1	2		1	2	3				3

1 – Low 2-Medium 3- High

4. MAPPING (CO's AND PSO's)

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2	2	2
3	2	2

1 – Low 2- Medium 3-High

PSM18 DE104	**SPORTS FACILITY MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS** **Unit-I** **Facility Management**: Meaning – The Facility Manager – Constituents – Managerial Functions – Computer Aided Facility Management – Strategies – Leadership – Outsourcing. **Unit-II** **Facility Planning**: Fundamentals – Planning for Existing and Future Facilities – Facility Site and Design: Site Location – site Cost – Site Selection – Facility Design and Construction – Construction Planning and Elements – Project cost – Completion and Analysis. **Unit-III** **Facility Systems**: Heating, Ventilation and Air-Conditioning – Energy Systems – Interior and Exterior Systems – Space Management – Facility Repair Management: Maintenance and Repair Program – Basic Maintenance. **Unit-IV** **Facility Marketing -** Sales – Financial Concepts – Revenue and Expenses – Budgeting – New Facility Financing – Selling of a Facility – Sports Facility Jobs – Employment Management – Training – Risk Management and Insurance. **Unit-V** **Facility Preparation**: Attracting Events – Event Preparation Implementing a Security Plan: Crowd Management – Crisis Management – Event Management in the Facility: Marketing Efforts and Costs – Marketing for the Future. **Reference:** **1.** Gil Fried, Managing Sports Facilities, Human Kinetics

2.	**Course Outcomes*:* Students are able to**	
	CO-1	Know about the different types of Sports Facilities
	CO-2	Acquire in–depth knowledge on Sports Facility Planning
	CO-3	Identify the Key factors required for a good Sports Infrastructure

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	2		2	2					
2	3		3				2		2	
3	1			2		2			2	3

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	3
2	2	2
3	3	2

1 – Low 2- Medium 3-High

PSM18DE105	**SPORTS PSYCHOLOGY AND SOCIOLOGY**
	Instruction :4 hr / week ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS**

Unit -I

Sports Psychology – Meaning and Definition of Sports Psychology – The Need and Importance of Sports Psychology in Physical Education and Sports – General Factors Affecting Sports Learning and Performance – Development of Sports Psychology – Motivation of Children and Youth in Sports – Perception – Reaction Time – Movement Time – Reflex Time – Response Time.

Unit-II

Motor Learning – Tension – Frustration – Depression – Stress – Anxiety – Motivation – Factors influencing Motivation – Achievement Motivation – Ways and Means of Motivation – Personality – Meaning – Traits of Sportsmen – Effect of Sports Participation on Personality.

Unit-III

Sports Sociology – Meaning and Definition of Sports Sociology – Sports and Socialization of the Individual – Culture – Definition and Culture – Functions of Culture and Sports.

Unit-IV

Social Institutions – Sports as a Social Institutions – Sports and its Relationship with Social Institutions – Growth of Commercial Sport – Sports and Politics – Sports and Religion – Sports and Social Stratification – Sports Participation and Career Success – Athletic Retirement and Social Mobility.

Unit-V

Women in Sports – Sports Women in Our Society – Participation Pattern among Women – Gender Inequalities – Consequence of Sports Competition – Evaluation Processes.

Reference:

1. *John D. Lauther, "Sports Psychology", Englewood, Prentice Hall Inc.*
2. *Robert N, Singer, "Motor Learning and Human Performance", New York: The Macmillan Co.*
3. *Microslaw Vauks and Bryant Cratty, "Psychology and the Superior Athlete", London, The Macmillan Co.*
4. *Robert N. Singer, "The Psychology Domain Movement Behavior" Philadelphia – Lea and Febiger*
5. *John D Lauther, "Psychology of Coaching", Englewood Cliffs, New Jersey Prentice Hall Inc 1983.*
6. *H.I.A. Whiting K. Karman, L.B. Hendry and M.G. Jones, "Personality and Performance in Physical Education and Sports", Hendry Kimpton Publishers, London.*
7. *Cratty B.J., "Social Dimensions of Physical Activity", New Jersey: Prentice Hall Inc.*

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Bring out the Need and Importance of Psychology in Sports
	CO-2	Understand the significance of Motivation in Sports
	CO-3	Analyze the Role of Women in Sports

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1		1		2		2
2	1		1	1				2		2
3		3	2		2					3

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	3
2	3	2
3	2	2

1 – Low 2- Medium 3-High

PSM18 DE106	**SPORTS TOURISM** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **Unit 1** **Sports and Tourism:** The Nature of Sport, Tourism and Sports Tourism - Classification Scheme for Sports Tourism - The Infrastructure of Sports, Tourism and Sports Tourism - The Characteristics of Participants. **Unit 2** **Sports in the Development of Tourism:** The influence of increased Sports Participation and Sports Tourism - Active and Passive Sports in the Holiday - active and Passive Sports during Non-holiday time - **Tourism in the Development of Sports:** Sports development based on available Tourism Resources and as a result of visiting Tourist Resources - Major Events used to stimulate Sports Development **Unit 3** **The Economic Impact of Sport Tourism**: Sports and Tourism as Economic Activities - Sports Activity Holidays - Major Sports Facilities and Events as an attraction for visitors - **The Socio-cultural impact of Sport Tourism:** Conceptual Background to Socio-cultural Impacts - Positive Impacts and Negative Impacts - Violence in and Surrounding Sport and Tourism. **Unit 4** **The Environmental Impact of Sport Tourism:** Concern for the Natural Environment - Increasing Participation in Outdoor Sports - Damage to the Natural Environment caused by Tourism - Impact of Holiday Resorts and Sports Tourism Activities on the Natural Environment - Impact of Sports Tourism on Urban Environments - **The Health Impact of Sport Tourism**: Health Implications of Sports Tourism Activities - Sports Tourism for People with Disabilities. **Unit 5** **Present Status and Future Prospects:** Administrative and Policy Issues- Sports Tourism Administrative Infrastructures in various Countries and its Implications on Sports Tourism Policy - Sport Tourism in the Twenty-First Century - Future Trends. **Reference Books:** 1. Joy Standeven and Paul de Knop, ***Sport Tourism,*** Human Kinetics 2. Mike Weed and Chris Bull, ***Sports Tourism: Participants, Policy and Providers,*** ELSEVIER 3. Mike Weed, ***Sport and Tourism: A Reader***, Routledge

2.	**COURSE OUTCOMES: Students will be able to**	
	CO-1	Acquire Knowledge on Sports Tourism
	CO-2	Identify the Economic Value of Sports Tourism
	CO-3	Derive the Future Prospects of Sports Tourism

3. MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			2		1				2
2	1		3			2	3		2	
3		3			2					2

1 – Low 2-Medium 3- High

4. MAPPING (CO's AND PSO's)

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1		2
2	3	
3	2	2

1 – Low 2- Medium 3-High

PSM18 DE107	**ADVERTISING IN SPORTS** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **UNIT 1** **INTRODUCTION TO ADVERTISING** – Concept and definition of advertisement – Social, Economic and Legal Implications of advertisements – Objectives of Advertising in Sports. **UNIT 2** **IMC IN SPORTS** – Concepts of Integrated Marketing Communication in Sports, Elements of Integrated Marketing Communication- Media plan – Type and choice criteria – Reach and frequency of advertisements – Cost of advertisements – Media strategy and scheduling. **UNIT 3** **BUSINESS OF ADVERTISING** – Advertiser- Advertising Agency and World of Media -Brand Manager- Duties and responsibilities of a Brand manager - Message development – Different types of advertisements – Layout – Design appeal – Copy structure – Advertisement production -Media Research – Testing validity and Reliability of ads – Measuring impact of advertisements **UNIT 4** **SPORTS PERSONALITIES AS BRAND ENDORSER**- Celebrities - Reputed sports persons - brand endorsed – Impact of Celebrities - Role of Public Relations in promoting sporting events. **UNIT 5** **SPONSORSHIP IN SPORTS** - Meaning and Objectives of Sponsorship, Advertising and Sponsorship, Developing Sponsorship proposal- Details of Sponsorship Agreement in National and International sports bodies. **TEXT BOOKS** 1. Wells, Moriarty & Burnett, Advertising, Principles & Practice, Pearson Education 7 th Edition, 2007. 2. Kenneth Clow. Donald Baack, Integrated Advertisements, Promotion and Marketing communication, Prentice Hall of India, New Delhi, 2003. **REFERENCES** 1. S. H. H. Kazmi and Satish K Batra, Advertising & Sales Promotion, Excel Books, New Delhi, 2001. 2. George E Belch and Michel A Belch, Advertising & Promotion, McGraw Hill, Singapore, 1998. 3. Julian Cummings, Sales Promotion, Kogan Page, London 1998. 4. E.Betch and Michael, Advertising and Promotion, McGraw Hill, 2003. 5. Jaishri Jefhwaney, Advertising Management, Oxford, 2008.

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Understand the concept of Advertisement
	CO-2	Gain the knowledge on Integrated Marketing Communications
	CO-3	Examine the Role of Brand in Sports Advertisements

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2									1
2	1		2	3		2	2		2	3
3		2		2	2					

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	1
2		3
3	2	2

1 – Low 2- Medium 3-High

PSM18 DE108	**SPORTS MEDIA & EVENT MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **UNIT 1** **SPORTS MEDIA**- Definition of Media - Introduction to different Sports Media – Impact of Sports Media – future of media. **UNIT 2** **SPORTS CHANNELS**- Introduction to Sport Communication - Careers in Sport Related Fields - Sport Publishing- Electronic-New Media. -Popular Sports Channels Operating in India. **UNIT 3** **COMPREHENSIVE STUDY ON DIFFERENT SPORTS CHANNELS**- Profile - Top Management- Functional Departments - Work Culture- Career Opportunities- Telecast rights for major Sporting Events- Program Mix- Advertising Opportunities. **UNIT 4** **SPORTS JOURNALISM**- Introduction- Scope- News - Value of Sports- Essential Qualification of Sports Writer -Presenter. **UNIT 5** **EVENT MANAGEMENT**- Meaning of Events, Event Management, Designing an Event- 5C's (Conceptualisation, Costing, Canvassing, Customisation, Carrying out). Key Elements of Events-Event Infrastructure- Organisers- Clients- Target Audience- Media- Venue - Role of Mass Media in Event Promotion. **References:** 1. Hall, Nichols, Moynahan, and Taylor (2007). Media Relations in Sport – 2 nd Ed. Morgantown, WV: Fitness Information Technology. 2. Managing Sporting Events – Jerry Solomon (Human kinetics) 3. Sports Journalism – Philip Andrews (Sage Publication)

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Know the concept of Sports Media
	CO-2	Acquire in–depth knowledge on Sports Journalism
	CO-3	Understand the types of Channels available for Event Management

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1				1			2		2
2	2	2			1			2		3
3	2		2	2		1			3	

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2	2	3
3	2	3

1 – Low 2- Medium 3-High

PSM18GE301	**MANAGEMENT CONCEPTS** ***Instruction :4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS** **UNIT I** Fundamentals of Management – Evolution of Management -Planning and Decision Making : Relationship with other managerial functions – Types of plans and their implementation – Management by objectives. **UNIT II** Organizing and Staffing: - Basic concepts of organizing and staffing. Departmentalization, delegation, decentralization – span of control – line and staff functions – reasons for and resolution of conflicts between line and staff functions. **UNIT III** Directing and Leading: Leadership- processes and approaches – Transactional and transformational leadership – Motivation – Important theories – Group Dynamics – Control and coordination: Basic concepts, elements, processes and techniques of control and co- ordination. **UNIT IV** Corporate social responsibility- ethics and values in business – social audit – Government regulation of business. **UNIT V** Communication – Characteristics of a good communication system- types of communication – barriers to communication – Recent trends in business and Management. ***Reference Books:*** *1. William F Glueck and Lawrence R Jaach, Business Policy and Strategic Management, Mc Graw Hill, 1984.* *2. Koontz and O' Donnel, Management, Mc Graw Hill, 1996.*

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Gain the knowledge on fundamentals of Management
	CO-2	Take effective Decision in the Business Environment
	CO-3	Exhibit Corporate Social Responsibility

3 **MAPPING (CO's and PO's)**

Course Outcomes	**Program Outcomes**									
	1	2	3	4	5	6	7	8	9	10
1	2			2						
2	1	3	3				3		2	2
3	2				1					3

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	1
2		2
3	2	1

1 – Low 2- Medium 3-High

PSM18 GE302	**BUSINESS COMMUNICATION** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **Unit–I: Basic forms of communication** Need for Communication; Forms of Communication Self-Development and Communication: Factors Affecting Communication; Essentials of Communication Skills. **Unit–II: Corporate communication** Types of Corporate Communication; Barriers of Communication: **Principles of Effective Communication** - The Effective Communication Skills Questionnaire; Humor in Communication; Interpersonal Communication; Intrapersonal Communication; Understanding Audience Psychology. **Unit–III: Writing skills: Business letters** Written Communication—Significance In Business; Essentials of a Business Letter; Parts of a Business Letter; Forms of a Business Letter; Types of Business Letters; Writing a Good Business Letter. **Internal Communication -** Letters within the Organization; Letters to Staff; Circulars and Memos; Office Notes, Motivational Communication; Letters from Top Management; Writing without Hurting; Reminders and Follow-up; Employee Newsletters. **Report writing** - Types of Reports; Essentials of Good Report Writing; Committee Reports; Annual Reports. **Unit- IV: Public Relations** Definition of Public Relations; Benefits of PR in Sport; Tools-Media; Press Release; one on ones; Press Conferences; Media Briefings; Non-media initiatives; How to manage media. **Unit-V: Sports Journalism & Media** Media as a Vehicle; Media as a Dashboard; Evolving nature of Sports Media in India; Opportunities in Sports Journalism; Big Data in Media. **References** 1. Effective communication- Urmila Rai and S.M. Rai (Himalaya Publishing House). 2. Business Communication-Doctor and Doctor (Sheth) Publishers Pvt. Ltd.) 3. Public Relations – A Case Based Approach – Jery Hendrix & Darrell C. Haynes. 4. The Significance of Sponsorship as a Marketing Tool in Sports Events – Oladunni Roselyn Abiodun

2.	**COURSE OUTCOMES: Students will be able to**	
	CO-1	Understand the basics of Communication
	CO-2	Communicate effectively through different Medias
	CO-3	Realize the benefits of Public Relations

3. MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1				2		
2	2		2			2			3	2
3	2	2			2			2		2

1 – Low 2-Medium 3- High

4. MAPPING (CO's AND PSO's)

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	1
2	2	
3	2	1

1 – Low 2- Medium 3-High

PSM18 GE401	**ENTREPRENEURSHIP DEVELOPMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **Unit I** The nature and importance of entrepreneurs – Definition of entrepreneur and entrepreneurship – Role of entrepreneurship in economic development – Future and drawbacks of entrepreneurship. Advantages and drawbacks of pursing entrepreneurship as a career **Unit II** Classification and functions of entrepreneur – characteristics and traits of entrepreneur. Male Vs female entrepreneurship. Rural entrepreneurship – Social entrepreneurship **Unit III** Managerial Vs. Entrepreneurial decision making – Intrapreneurship – Climate for Intrapreneurship – Establishing Intrapreneurship in organisation **Unit IV** Creating and starting the venture – creativity and business idea – the business plan – sources of capital – managing the enterprise – Buying an existing business - Franchising **Unit V** Strategies for growth and managing the implications of growth – Accessing resources for growth from external sources – Going public – Ending the venture - Financial support by the government, development banks and public sector banks Global aspects of entrepreneurship Contemporary issues. **References** 1. Hisrich, Peters and Sheperd, Entrepreneurship, Sixth edition, Tata McGraw Hill, 2. Peter Drucker Innovation and Entrepreneurship, Colins (Reprint) 3. Zimmerer and Scarborough, Essentials of entrepreneurship and small business management, fourth edition, Prentice Hall of India, 4. Charantimath, Entrepreneurship Development, Pearson Education, 5. Mohanty, Fundamentals of Entrepreneurship, Prentice Hall of India, 6. Kanka S.S., Entrepreneurial Development, S. Chand & Co.

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Understand the Concept of Entrepreneurship
	CO-2	Gain the Knowledge and Importance of Entrepreneurship
	CO-3	Basic Functions of an Entrepreneur

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			2						
2	2	2			2	3				2
3	1		2					1		3

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	3	2
2		2
3	2	

1 – Low 2- Medium 3-High

PSM18 GE402	**EVENT MANAGEMENT** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 20 + 20 + 60***
1.	**SYLLABUS:** **UNIT I - EVENT CONTEXT** History & Evolution – Types of events – Meetings, Incentives Conferences, Events (MICE) – Types of Meeting, Trade Shows, Conventions, Exhibitions- Structure of event industry – Event Management as a profession – Perspectives on event: Government, Corporate & Community – Code of Ethics. **UNIT II - EVENT PLANNING & LEGAL ISSUES** Conceptualizing the event – Host, sponsor, Media, Guest, Participants, Spectators – Crew – Design of concept – Theme and content development – Visualization – Event objectives – Initial planning – Budgeting – Event design and budget checklist – Preparation of functional sheets – Timing – Contracts and Agreements – Insurance, Regulation, Licence and Permits – Negotiation. **UNIT III - EVENT MARKETING** Role of Strategic Marketing Planning - Pricing – Marketing Communication Methods & budget – Elements of marketing communication – Managing Marketing Communication – Role of Internet – Sponsorship – Event sponsorship – Strategy – Managing Sponsorships – Measuring & Evaluating sponsorship. **UNIT IV - EVENT OPERATION** Site Selection – Types of location – Venue Requirements – Room, Stage, Audi-Visual, Lighting, Performers, Decors, Caterer, Photography & Videography – Protocols – Guest list – Guest demographics – Children at event – Invitation – Media – Freelance Event Operation – Road show - Food & Beverage – Entertainment – Event Logistics – Supply of facilities – Onsite logistics – Control of event logistics – Evaluation & Logistics. **UNIT V - SAFETY & EVENT EVALUATION** Risk assessment – Safety officer, Medical Manager – Venue, Structural safety – Food safety – Occupational safety – Fire Prevention – Sanitary facilities – Vehicle traffic – Waste Management. Event Impact – Event Evaluation Process – Service Quality - Customer Satisfaction. **TEXTBOOKS :** 1. Lynn Van Der Wagen, Event Management for Tourism, Cultural Business & Sporting Events, 4th Edition, Pearson Publications, 2014. 2. Lynn Van Der Wagen, & Brenda R. Carlos , Sucessful Event Management. 3. Judy Allen, Event Planning 2nd Edition, Wiley & Sons, Canada, 2014. 4. G.A.J. Bowdin, Events Management , Elseiver Butterworth

2	**COURSE OUTCOMES(COS): students will be able to**	
	CO-1	Know about Sports Events – Planning of Sports Events
	CO-2	Commercialization of Sports Events
	CO-3	Exhibit social responsibility through Sports Events

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	2		2	1			2		
2	1	2	3				2		3	2
3										3

1 – Low 2-Medium 3- High

4. **MAPPING (CO's AND PSO's)**

Course Outcomes	**Program Specific Outcomes**	
	1	**2**
1	2	
2	3	2
3	2	

1 – Low 2- Medium 3-High

PROGRAMME: M.Phil -SPORTS PSYCHOLOGY AND SOCIOLOGY

PROGRAM EDUCATIONAL OBJECTIVES

PEO-1	To produce scholars with aptitude for research and analytical abilities, who are well-equipped to engage in doctoral research, as well as can find employment in industry and the public service related to Sports Psychology and Sociology
PEO-2	To attain professional knowledge and practice to work in different fields of Sports Psychology and Sociology and also can become entrepreneur in their own establishments

PROGRAM OUTCOME

The student will be able to:

PO 1: Demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in Sports Psychology and Sociology.

PO 2: Equip with vital knowledge necessary to critically examine the background literature relevant to conduct rigorous research in Sports Psychology and Sociology.

PO 3: Understand and apply basic research methods in Sports Psychology and Sociology, including research design, data analysis and interpretation.

PO 4: Develop the knowledge and skills to engage in ethical research and practice.

PO 5: Show competence and the ability to use computers and other technology to conduct independent research in academic and/or applied settings.

PO 6: Demonstrate professional ethics, commitments and skills to engage in ethical research and in all aspects of professional practice.

PO 7: Develop the knowledge and skills to engage diversity and inclusion in Sports Psycho-Sociological studies.

PO 8: Develop the knowledge and skills to remain abreast of latest advancements and issues in their respective areas of research/interest**.**

PO 9: Develop strong written and oral skills to to communicate effectively in a variety of formats.

PO 10: Use critical and creative thinking, develop an attitude of inquiry and, when possible, the scientific approach to solve problems related to behaviour and mental processes necessary for professional development.

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PE0-1	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
PEO-2	**X**			**X**	**X**	**X**	**X**			**X**

PROGRAM SPECIFIC OUTCOME – M Phil SPORTS PSYCHOLOGY & SOCIOLOGY

PSO-I	Research scholars will have requisite knowledge to conduct research, analyse, articulate with concrete psycho-social skills, enabling the individuals to understand their behavior and managing them for enhanced individual wellbeing.
PSO-2	Research Scholars will be able to adhere to professional standards and expectations, create positive changes by empowered and diversified approaches towards the promotion of health and wellness among sports personnnel.

MPHSPS 101 RESEARCH METHODOLOGY AND STATISTICS

UNIT I - Research: criteria for locating and selecting research problems - subjects, variables – Hypothesis – Limitation – Delimitation – Review of related literature. Requirements for quality research and experimAental control – Application of research findings for excellence in sports.

UNIT II - Research Design: Meaning, Significance and Criteria for selecting suitable research design: Quasi experiment – Cross sectional design – longitudinal design – Double blind placebo design – repeated measures design – rotated group design – Independent factorial design – mixed factorial design.

UNIT III - Research Laboratory: Methods of finding instrument, tester and subject reliability - Construction Standardization and adaptation of Sports Questionnaire. Sampling – Types of Sampling, sampling techniques – Tools of Data collection – Interview schedule – Survey Method – Mechanism of Writing Research Proposal - Mechanism of Writing Research Report – Synopsis – Abstract – Bibliography – Preliminary and End Pages.

UNIT IV - Introduction to statistics : Types, classification and basic concepts of statistics – measures of central tendency – measures of variability – Normal probability curve – properties of normal curve – Problems based on Normal curve – Testing of hypothesis – Problems based on t Test and Normal.

UNIT V - Need for analysis of variance : One way analysis of variance – Two way analysis of variance – Analysis of Covariance – Concepts or Correlation - Rank order correlation - Partial and Multiple Correlation – Biserial Correlation – Chi Square – Contingency Coefficient – Mann Whiteney U test – Kruskal Wallis H Test.

REFERENCES:

1. *Clarke David. H and Clarke H. Harrison (1984)* ***Research process in Physical Education****, New Jersey: Prentice Hall Inc.*

2. *Best, John W. and Kalm James, V. (1980)* ***Research in Education****, New Delhi: Prentice Hall of India.*
3. *Kothari C.R. (1985)* ***Research Methodology*** *2nd revised ed., New Age International, Publisher; New Delhi.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Understand and apply appropriate research methods in Sports Psychology and Sociology, including research design, data analysis, and interpretation in their research work

2 Examine and collect relevant literature and apply scientific methods and techniques in research work

3 Exhibit competencies, acquire critical knowledge relate to their current research, able to use critical thinking to evaluate and interpret evidence.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	1	1	1	1		1	1		1
2	1	2	1	1	2	2	1	1	1	1
3		2			1	1			2	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand and apply appropriate research methods in Sports Psychology a Sociology, including research design, data analysis, and interpretation in th research work.
CO2	Examine and collect relevant literature and apply scientific methods a techniques in research work
CO3	Exhibit competency, acquire critical knowledge relate to their current research, able to use critical thinking to evaluate and interpret evidence.

PSOs/COs	PSO1	PSO2
CO1	**1**	
CO2	**1**	
CO3	**1**	

MPHSPS 102 - SPORTS PSYCHOLOGY AND SOCIOLOGY

Unit 1: Introduction : Introduction to and brief history of sports psychology - Scope and its Importance - The role of sports psychologist - Youth sport - Women in sport - Psychological assessment - Personality, Emotional and Mental Control, Concentration, Anxiety, Arousal and Stress Management.

Unit 2: Psychological Skills Training: Introduction to psychological skills training, Optimism in sports and exercise, locus of control, Motivation in Sport: Concept, definition, techniques and types of motivation, Perceived competence. Leadership, group cohesion, and audience effects, Team building and goal setting.

Unit 3: Injury and Rehabilitation : Aggression and violence in sports, Risk-sport athletes, injured athletes, injury and rehabilitation, The psychology of recovery and rehab, Body image and eating disorder in sports, Overtraining and Burnout, Athlete and substance abuse .

Unit 4 : August Count : The Law of Human Progress: Hierarchy of Sciences: Social statics and social dynamics.

Unit 5 : Emile Durkheim: Methodology of Social Sciences. Individual and Society. The Sociology of Religion. Theory of Suicide. Division of Labour. Anomie.

References:

1. *The sports psychology handbook – Shane Murphy Editor (2005) human kinetics Sports psychology: Matt Jarvis (2000)*
2. *The foundation of sports an exercise psychology 4th edition written by Roberts Weinberg and Daniel Gould.*
3. *Abraham of Morgan's : Masters of Social Thought.*
4. *Mukherjee : History of Social thought.*
5. *Shankar Rao : Sociology*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Demonstrate familiarity, and apply major concepts, theoretical perspectives, empirical findings, historical trends and the core domains of Sports Psychology and Sociology.

2. Learn the theories, applications and principles of the core areas of their research study undertaken.

3. Gain information related to their allied and supplementary areas of their research study undertaken, including methodologies adopted, assessment patterns and statistical tool.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1		1				2	1		1
2	1	2	2	1	1	1	1	1	1	2
3		1	2	1	2	1	1	1	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Demonstrate familiarity, and apply major concepts, theoretical perspectives, empirical findings, historical trends and the core domains of Sports Psychology and Sociology.
CO2	Learn the theories, applications and principles of the core areas of their resear study undertaken
CO3	Gain information related to their allied and supplementary areas of their researc study undertaken, including methodologies adopted, assessment patterns and statistical tool.

PSOs/COs	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

MPHSPS 201 - AREA OF DISSERTATION

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Understand and apply principles of Sports Psychology and Sociology to personal, social, and organizational issues in individual and team sports.

2 Understand and apply principles of Sports Psychology and Sociology to personal, social, and organizational issues in individual and team sports..

3 Have effective oral communication skills to disseminate research and scholarly activities like journal publications and conference proceedings

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	1	2	1		1	1	1	1	1
2		2		1		1	2		2	
3			1			1	1	2	2	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand and apply principles of Sports Psychology and Sociology to person social, and organizational issues in individual and team sports.
CO2	Understand and apply principles of Sports Psychology and Sociology to person social, and organizational issues in individual and team sports.
CO3	. 3 Have effective oral communication skills to disseminate research and scholarly activities like journal publications and conference proceedings

PSOs **COs**	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

MPHSPS 202 COMPUTER OPERATIONS, COMMUNICATIONS AND EDUCATIONAL SKILLS

UNIT I- Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT II- Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create – insert – update – delete – select – commit –front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB

UNIT III - What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face interactions (situations) – Written – Letter Writing – Report Writing – Memo's – Note making - Agenda preparation.

UNIT IV- Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking, Pronunciation, structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT V - Pedagogy : Meaning, Theories of pedagogy (Benjamin Bloom, Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills of sex education – Intergrading skill development, modernizing education and skill development – Basic and higher education : Issues and challenges.

References:

1. *'Soft skills', university of madras, Chennai*
2. *'Communication skills', university of madras, Chennai*
3. *Mangal .S.K. (2002). Advanced Educational psychology, prentice hall of India, New Delhi.*
4. *Sampath .K etal (1998) introduction to educational technology, sterling publishers, New Delhi.*
5. *keemar. K. (1997) Educational technology, New Age international publishers, New Delhi.*
6. *kuppusamy.B (1984). Advanced educational psychology, Sterling Publishers, New Delhi.*

COMPUTER OPERATIONS – SYLLABUS - PRACTICALS

1. **MS – WORD**

1. Create advertisement is MS WORD
2. To illustrate the concept of mail merging in word.
3. Document creation with scientific rotation
4. Test manipulation with scientific rotation
5. Table creation, table formatting and conversion.
6. Mail Merger and letter preparation
7. Drawing and Flow Chart.
8. Show the different effect for the given text in the document.
9. Create a table of employee and calculate the next salary.
10. Design a table with merge cells and split cells technique.

2. **SPREAD SHEET**

11. To create a Spread Sheet to analyze the marks of the students in a class and to create appropriate charts.
12. Charts in Spread Sheets
13. Formula and Formula Editor
14. Inclusion of objects, pictures and graphics protecting the document and sheet.
15. Sorting and import/ export features.
16. Create suitable chart to show the census data in Indian Sports.

17. Create a suitable chart to show the students average in the class.

18. Create an electronic spread sheet of marks, and find the total, average occurred in a calculation.

19.

20. Generate the numbers vertically starting from 10 to 100 with step value 5.

3. **POWER POINT**

21. To create the presentation for the department using the power point.
22. Animation in Power point Presentation
23. Designing the Power point Presentation
24. Timing for the slides in Power point Presentation
25. Back ground designing in Power point Presentation
26. Designing the Power point Presentation using audio and Video.

4. **INTERNET LAB**

27. Browsing a Web Site.
28. Composing and Sending a Mail
29. Forwarding and replying to mails.
30. Downloading Articles / Web content.
31. Literature survey using search enquires

5. **DBMS LAB**

32. Creation of database table with constaints
33. Modification of data in a table.
34. 28 GUI applications using VB (Single calculator, dollar conversion etc)
35. Database Applications using VB (insert, update, delete).

REFERENCES:

1. *Peter Norton, "Introduction to Computers", 6th Edition, Tata Mcgraw Hill.*

2. *Ashok N. Kamthane, "Computer Programming", Pearson Education India.*
3. *Groff Weinberg, "The complete Reference SQL", 2nd Edition, Tata Mcgraw Hill.*
4. *Bottm Special Edition using Microsoft Office 2007, Pearson Education India.*
5. *Gray W. Harson and James V Harson (1996) Data Base Management and Design, Prentice Hall*
6. *Jeffrey A Hotter, Mary B Prescolt, Fred R. Medadden (2002), Modern database Management, Prentice Hall.*
7. *Robert I T Futrell, Donald F. shafer Linda, (2002) Quality software project management Pearson Education, Asia.*
8. *Chandran S.S. (1985) Innovations in Teaching Learning Process, New Delhi : Vikas Publishing House.*
9. *Rajasekar .S (2005) Computer Education and Educational Computing, Hyderabad: Neelkamal Publications.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Demonstrate competency and the ability to use computers and other technology to accomplish various tasks in research.

2 Apply appropriate tools to present accurate information in an effective manner.

3 Demonstrate critical and innovative thinking and display competence in oral, written communication.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1								1	1	2
2		1			1					1
3	2	2			1					2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH CO

CO1	Demonstrate competency and the ability to use computers and other technology accomplish various tasks in research.
CO2	Apply appropriate tools to present accurate information in an effective manner
CO3	Demonstrate critical and innovative thinking and display competence in in oral and written communication.

PSOs Cos	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

MPHSPS 203 DISSERTATION

Students are required to submit a dissertation at the end of the year. The dissertation shall embody the record of original investigation under the guidance of a supervisor.

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COURSE OUTCOMES

At the end of the course, the student will be able to:

CO 1 Identify a research problem in the area of interest and apply basic research methods in Sports Psychology and Sociology

CO 2 Planning and implementation of techniques to solve their research problem.

CO 3 Ability to gather related literature, collect, analyse data and present findings in effective scientific manner.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	2	1	1	2	1	1	1	1	1
2		1						2		
3		2		1	1	1		1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Identify a research problem in the area of interest and apply basic research methods in Sports Psychology and Sociology.
CO2	Planning and implementation of techniques to solve their research problem.
CO3	Ability to gather related literature, collect, analyse data and present findings effective scientific manner

PSOs **COs**	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PROGRAMME: M.Phil.

SPORTS PSYCHOLOGY

PROGRAM EDUCATIONAL OBJECTIVES

PEO-1	To produce scholars with aptitude for research and analytical abilities, who are well-equipped to engage in doctoral research, as well as can find employment in industry and the public service related to Sports Psychology**.**
PEO-2	To attain professional knowledge and practice to work in different fields of Sports Psychology and also can become entrepreneur in their own establishments.

PROGRAM OUTCOME

The student will be able to:

PO 1: Demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in Sports Psychology.

PO 2: Equip with vital knowledge necessary to critically examine the background literature relevant to conduct rigorous research in Sports Psychology.

PO 3: Understand and apply basic research methods in Sports Psychology, including research design, data analysis and interpretation.

PO 4: Develop the knowledge and skills to engage in ethical research and practice.

PO 5: Show competence and the ability to use computers and other technology to conduct independent research in academic and/or applied settings.

PO 6: Demonstrate professional ethics, commitments and skills to engage in ethical research and in all aspects of professional practice.

PO 7: Develop the knowledge and skills to engage diversity and inclusion in Sports Psychological studies.

PO 8: Develop the knowledge and skills to remain abreast of latest advancements and issues in their respective areas of research/interest**.**

PO 9: Develop strong written and oral skills to to communicate effectively in a variety of formats.

PO 10: Use critical and creative thinking, develop an attitude of inquiry and, when possible, the scientific approach to solve problems related to behaviour and mental processes necessary for professional development.

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PE0-1	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
PEO-2	**X**			**X**	**X**	**X**	**X**			**X**

PROGRAM SPECIFIC OUTCOME – M Phil Sports Psychology

PSO-I	Research scholars will have requisite knowledge to conduct research, analyse, articulate with concrete psychological skills, enabling athletes to understand their behavior and managing them for enhanced their performance on and off the field.
PSO-2	Research Scholars will be able to adhere to professional standards and expectations, create positive changes by empowered and diversified approaches towards the promotion of health and wellness among sports personnel.

FIRST SEMESTER

MPHSPS 101 RESEARCH METHODOLOGY AND STATISTICS

UNIT I- Research: criteria for locating and selecting research problems - subjects, variables – Hypothesis – Limitation – Delimitation – Review of related literature. Requirements for quality research and experimental control – Application of research findings for excellence in sports.

UNIT II- Research Design: Meaning, Significance and Criteria for selecting suitable research design: Quasi experiment – Cross sectional design – longitudinal design – Double blind placebo design – repeated measures design – rotated group design – Independent factorial design – mixed factorial design.

UNIT III- Research Laboratory: Methods of finding instrument, tester and subject reliability - Construction Standardization and adaptation of Sports Questionnaire. Sampling – Types of Sampling, sampling techniques – Tools of Data collection – Interview schedule – Survey Method – Mechanism of Writing Research Proposal - Mechanism of Writing Research Report – Synopsis – Abstract – Bibliography – Preliminary and End Pages.

UNIT IV- Introduction to statistics: Types, classification and basic concepts of statistics – measures of central tendency – measures of variability – Normal probability curve – properties of normal curve – Problems based on Normal curve – Testing of hypothesis – Problems based on t Test and Normal.

UNIT V- Need for analysis of variance: One way analysis of variance – Two way analysis of variance – Analysis of Covariance – Concepts or Correlation - Rank order correlation - Partial and Multiple Correlation – Biserial Correlation – Chi Square – Contingency Coefficient – Mann Whitney U test – Kruskal Wallis H Test.

REFERENCES:

1. *Clarke David. H and Clarke H. Harrison (1984)* ***Research process in Physical Education****, New Jersey: Prentice Hall Inc.*

2. *Best, John W. and Kalm James, V. (1980)* ***Research in Education****, New Delhi: Prentice Hall of India.*
3. *Kothari C.R. (1985)* ***Research Methodology*** *2nd revised ed., New Age International, Publisher; New Delhi.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Understand and apply appropriate research methods in Sports Psychology, including research design, data analysis, and interpretation in their research work.

2 Examine and collect relevant literature and apply scientific methods and techniques in research work

3 Exhibit competencies, acquire critical knowledge relate to their current research, able to use critical thinking to evaluate and interpret evidence.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	1	1	1	1		1	1		1
2	1	2	1	1	2	2	1	1	1	1
3		2			1	1			2	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03- High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand and apply appropriate research methods in Sports Psychology, including research design, data analysis, and interpretation in their research work
CO2	Examine and collect relevant literature and apply scientific methods and techniques in research work
CO3	Exhibit competency, acquire critical knowledge relate to their current researc able to use critical thinking to evaluate and interpret evidence.

PSOs Cos	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

MPHS17102 - Area of Specialization - Applied Sports Psychology

Unit I-

Introduction: Definition, Nature and its Relationship with other sciences, Development, Scope of Sports Psychology, Motor Learning-Definition,Stages of Learning :Cognitive, Associative and Automotive Skills- Self Regulation and Bio-feedback modalities in Sports.

Unit II

Cognitive, Sensory and Motivational Process in Sports: Cognition: Definition, Characteristics of Cognitive Process in Sports**,**Attention and Perception: Defination, Ways of Focusing Attention, Importance of Perception in Sports. Motivation: Difination, Ways of Improving motivation in practice and Games, Motivating the self-motivated and problem athelete.

Unit III

Assessment of Psychological Factors for Enhancing Performance: Anger, Anxiety, Arousal and Aggression, Self Esteem, Emotion, Frustration, Locus of Control, Stress, Choking, Personality, Mood States.

Unit IV

Burn out – Athletes Burn out – Potential Causes of Burnout. Preventing Burnout – Coping: Stressor Appraisals – Psychological Preparation and Competition: Phenomenon of competitive sport, long term Psychological preparation for competition (arousal regulation, imagery, self-confidence, goal setting, concentration), short term psychological preparation (upcoming competition).

Unit V

Psychological Skills Training (PST) Definition, Importance of PST, Myths about PST, Psyching Up and Psyching Down strategies - Construction and Standardization of Sports Psychology Questionnaires, Procedures to use Psychological Questionnaire

Reference:

1. Weinberg, R. S, Gould D (2003) – Foundation of Sports &Exercise Psychology, 3rd Edition, Human Kinetics, South Australia.
2. Gurbakhsh S. Sandhu (2002)- Psychology in Sports _ A Contemporary Approach, Friends Publications, New Delhi.
3. Bierstedt. R. The Social Order, New Delhi: Tata McGraw Hill, 1970.
4. Fieher, J.H. Sociology 2nd Edition. London The University of Chicago Press. 1971.
5. Bottomore, T. B. Sociology- A Guide to Literature and Problems, New Delhi, Creavge Allen and Unwin (INDIA)

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 - Demonstrate familiarity, and apply major concepts, theoretical perspectives, empirical findings, historical trends and the core domains of Sports Psychology.

2 Learn the theories, applications and principles of the core areas of their research study undertaken.

3 Gain information related to their allied and supplementary areas of their research study undertaken, including methodologies adopted, assessment patterns and statistical tool.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1		1				2	1		1
2	1	2	2	1	1	1	1	1	1	2
3		1	2	1	2	1	1	1	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03- High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Demonstrate familiarity, and apply major concepts, theoretical perspectives, empirical findings, historical trends and the core domains of Sports Psychology
CO2	Learn the theories, applications and principles of the core areas of their research study undertaken.
CO3	Gain information related to their allied and supplementary areas of their research study undertaken, including methodologies adopted, assessment patterns and statistical tool.

PSOs COs	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3	**1**	

SECOND SEMESTER

MPHSPS 201 - AREA OF DISSERTATION

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Understand and apply principles of Sports Psychology to personal, social, and organizational issues.

2 Develop the knowledge and skills to engage in ethical research with recognition, understanding, and respect for complexity of sociocultural and ethical diversity.

3 Have effective oral communication skills to disseminate research and scholarly activities like journal publications and conference proceedings

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	1	2	1		1	1	1	1	1
2		2		1		1	2		2	
3			1			1	1	2	2	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03- High Level of Relevance

MAPPING OF PSOs WITH Cos

CO1	Understand and apply principles of Sports Psychology to personal, social, and organizational issues
CO2	Develop the knowledge and skills to engage in ethical research with recognition, understanding, and respect for complexity of sociocultural and ethical diversity.
CO3	Have effective oral communication skills to disseminate research and scholar activities like journal publications and conference proceedings

PSOs COs	**PSO1**	**PSO2**
CO1	**1**	
CO2		**1**
CO3	**1**	

MPHPSY202 - Computer Operation-Communication &Educational Skills

UNIT I - Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT II - Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create – insert – update – delete – select – commit –front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB

UNIT III - What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face interactions (situations) – Written – Letter Writing – Report Writing – Memo's – Note making - Agenda preparation.

UNIT IV - Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking, Pronunciation, structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT V - Pedagogy: Meaning, Theories of pedagogy (Benjamin Bloom, Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills of sex education – Intergrading skill development, modernizing education and skill development – Basic and higher education: Issues and challenges.

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COMPUTER OPERATIONS – SYLLABUS - PRACTICALS

1. **MS – WORD**

1. Create advertisement is MS WORD
2. To illustrate the concept of mail merging in word.
3. Document creation with scientific rotation
4. Test manipulation with scientific rotation
5. Table creation, table formatting and conversion.
6. Mail Merger and letter preparation
7. Drawing and Flow Chart.
8. Show the different effect for the given text in the document.
9. Create a table of employee and calculate the next salary.
10. Design a table with merge cells and split cells technique.

2. **SPREAD SHEET**

11. To create a Spread Sheet to analyze the marks of the students in a class and to create appropriate charts.
12. Charts in Spread Sheets
13. Formula and Formula Editor
14. Inclusion of objects, pictures and graphics protecting the document and sheet.
15. Sorting and import/ export features.
16. Create suitable chart to show the census data in Indian Sports.
17. Create a suitable chart to show the students average in the class.
18. Create an electronic spread sheet of marks, and find the total, average occurred in a calculation.
19.
20. Generate the numbers vertically starting from 10 to 100 with step value 5.

3. **POWER POINT**

21. To create the presentation for the department using the power point.
22. Animation in Power point Presentation
23. Designing the Power point Presentation
24. Timing for the slides in Power point Presentation
25. Back ground designing in Power point Presentation
26. Designing the Power point Presentation using audio and Video.

4. **INTERNET LAB**

27. Browsing a Web Site.
28. Composing and Sending a Mail
29. Forwarding and replying to mails.
30. Downloading Articles / Web content.
31. Literature survey using search enquires

5. **DBMS LAB**

32. Creation of database table with constaints
33. Modification of data in a table.
34. 28 GUI applications using VB (Single calculator, dollar conversion etc)
35. Database Applications using VB (insert, update, delete).

REFERENCES:

1. *Peter Norton, "Introduction to Computers", 6th Edition, Tata Mcgraw Hill.*
2. *Ashok N. Kamthane, "Computer Programming", Pearson Education India.*
3. *Groff Weinberg, "The complete Reference SQL", 2nd Edition, Tata Mcgraw Hill.*
4. *Bottm Special Edition using Microsoft Office 2007, Pearson Education India.*
5. *Gray W. Harson and James V Harson (1996) Data Base Management and Design, Prentice Hall*
6. *Jeffrey A Hotter, Mary B Prescolt, Fred R. Medadden (2002), Modern database Management, Prentice Hall.*

7. *Robert I T Futrell, Donald F. shafer Linda, (2002) Quality software project management Pearson Education, Asia.*
8. *Chandran S.S. (1985) Innovations in Teaching Learning Process, New Delhi : Vikas Publishing House.*
9. *Rajasekar .S (2005) Computer Education and Educational Computing, Hyderabad: Neelkamal Publications.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Demonstrate competency and the ability to use computers and other technology to accomplish various tasks in research.

2 Apply appropriate tools to present accurate information in an effective manner.

3 Demonstrate critical and innovative thinking and display competence in oral, written communication.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1								1	1	2
2		1			1					1
3	2	2			1					2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03- High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Demonstrate competency and the ability to use computers and other technology to accomplish various tasks in research
CO2	Apply appropriate tools to present accurate information in an effective manner.
CO3	Demonstrate critical and innovative thinking and display competence in or written communication.

PSOs COs	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

MPHPSY 203 – Dissertation

Students are required to submit a dissertation at the end of the year. The dissertation shall embody the record of original investigation under the guidance of a supervisor.

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COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Identify a research problem in the area of interest and apply basic research methods in Sports Psychology

2 Planning and implementation of techniques to solve their research problem.

3 Ability to gather related literature, collect, analyse data and present findings in effective scientific manner.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	2	1	1	2	1	1	1	1	1
2		1						2		
3		2		1	1	1		1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03- High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Identify a research problem in the area of interest and apply basic research methods in Sports Psychology
CO2	Planning and implementation of techniques to solve their research problem.
CO3	Ability to gather related literature, collect, analyse data and present findings in effective scientific manner

PSOs COs	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

M.SC. PSYCHOLOGY

PROGRAM EDUCATIONAL OBJECTIVES

PEO-1	To produce students with effective interpersonal skills and psycho-social skills to help individual to excel in the chosen profession
PEO-2	To enable the student to articulate the skill sets desired by employers who hire or select people who demonstrate the knowledge of Psychology

PROGRAM OUTCOME

The student will be able to:

PO1 Demonstrate fundamental knowledge and comprehension of the major concepts, and theoretical perspectives.

PO2: Understand the application of psychological theories in real life situations

PO3. Analyse the influence of psychological factors on mental processes and human behaviour.

PO4. Articulate a sound psychological approach to enhance performance to work effectively with diverse individual and groups

PO5 Demonstrate professional ethics and commitment in all aspects of professional practice.

PO6 Carry out researches on various domains of psychology.

PO7 Develop critical thinking and applies strategy on solving emotional and social problems in daily situations.

PO8 Plan to communicate to formulate effective arguments for report writing/presentation.

PO9 Relate to society by contributing by community engagement and justify to be a responsible global citizen

PO10 Focus on the professional realities of working as a psychologist.

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PE0-1				X	X		X	X	X	X
PEO-2	X	X	X	X	X	X	X	X	X	X

PROGRAM SPECIFIC OUTCOME-PSYCHOLOGY

PSO-I	Graduates will be able to analyse, articulate andenable the individuals to understand their behavior and managing them to lead a better living.
PSO-2	Graduates will be able to create positive changes by empowered and diversified approaches towards the promotion of health and wellness.

FIRST SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PPY18CT101	**Advanced General Psychology**	**4**	**0**	**0**	**4**
PPY18CT102	**Biological Basis of Behaviour**	**4**	**0**	**0**	**4**
PPY18CT103	**Research Methodology**	**4**	**0**	**0**	**4**
PPY18CP104	**Psychological Testing I**	**0**	**0**	**10**	**5**
	DSE - Elective I	**4**	**0**	**0**	**4**
	Communication Skills (AEC I)	**2**	**0**	**0**	**2**
Total					**23**
SECOND SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PPY18CT201	**Life Span Development**	**4**	**0**	**0**	**4**
PPY18CT202	**Psychopathology – I**	**4**	**0**	**0**	**4**
PPY18CT203	**Behavioural Statistics**	**4**	**0**	**0**	**4**
PPY18CP204	**Psychological Testing & Assessment – II**	**0**	**0**	**10**	**5**
	DSE - Elective II	**4**	**0**	**0**	**4**
	Fundamentals of Information and Technology (SEC)	**2**	**0**	**0**	**2**
	NSS / Community Engagement - Co curricular	**0**	**0**	**0**	**2**
Total		**25**			

THIRD SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PPY18CT301	**Fundamentals of counselling skills**	**4**	**0**	**0**	**4**
PPY18CT302	**Guidance and Counselling**	**4**	**0**	**0**	**4**
PPY18CT303	**Psychopathology – II**	**4**	**0**	**0**	**4**
	Case Studies & Project Work	**0**	**0**	**0**	**4**
	DSE - Elective III	**4**	**0**	**0**	**4**
	Generic Elective I	**4**	**0**	**0**	**4**
	Life Skills Management (AEC II)	**2**	**0**	**0**	**2**
	Village Placement Program – Co curricular	**0**	**0**	**0**	**2**
	Total				**28**
FOURTH SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PPY18CT401	**Counselling and behaviour management**	**4**	**0**	**0**	**4**
PPY18CT402	**Organizational Behaviour**	**4**	**0**	**0**	**4**
PPY18CT403	**Training and Development**	**4**	**0**	**0**	**4**
PPY18CT404	**Thesis**	**0**	**0**	**0**	**6**
	DSE - Elective IV	**4**	**0**	**0**	**4**
	Generic Elective II	**4**	**0**	**0**	**4**
Total					**26**

FIRST SEMESTER

PPY18CT101 - ADVANCED GENERAL PSYCHOLOGY

UNIT I

Introduction: Definition and Goals of Psychology: Approaches: Biological, Psychodynamic, Behaviorist, Cognitive, and Humanistic. Methods of Psychology: Experiment, Observation, Interview, Questionnaire and Case study. Fields and Scope of Psychology.

UNIT II:

The sensory and Perceptual process: Some general characteristics of Five Senses – Perception: Determinants of Perception: Form, Space and Depth – Attention: determinants of attention. Motivation: Physiological Basis of Motivation, Theories of Motivation – Emotions : Facial Expressions – Theories of Emotions.

UNIT III:

Learning, Memory and Forgetting: Learning: principles and methods – classical conditioning – operant conditioning – the principle for reinforcement – cognitive learning- Transfer of learning – reward and punishment in the control of learning. Memory and forgetting: Memory – Stages of Memory – Types of memory – Improving Memory – Forgetting: Theories of Forgetting, Kinds of Forgetting.

UNIT IV:

Intelligence, Thinking and Problem Solving: Definition, Theories of Intelligence, Measurement of Intelligence. Thinking and Reasoning: Concepts, Categories, Schemas and Scripts, Imagery and Cognitive Maps, Creative Thinking – Concepts, Problem Solving Approaches: Solution Strategies and Mental Sets.

UNIT V:

Personality: Definition, Trait and Type Approaches: Biological and Socio-Cultural Determinants, Techniques of Assessment: Psychometric and Projective tests.

REFERENCES:

Henry Glietman,James Gross, Danial Reisberg (2011) – Psychology, 8th Edition, Norton and Company, ISBN: 978-0-393-93250-8

Ronald Comer, Nancy Ogden, Adrian Furnham(2013) Psychology – IISBN: 978-1-119-94126-2

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Apply conceptual knowledge of the core areas of sensory process, perception, learning, intelligence and personality in Psychological context.

2. Examine the knowledge related to the approaches used in the field of psychology to understand human behaviour and mental process.

3. Will be able to relate behavioural issues through theoretical approaches and methods ethically by contributing to society as a responsible citizen.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1	1			2	1		
2	1	1		2	1		1		1	1
3		1	1	1	2		2	2	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Apply conceptual knowledge of the core areas of sensory process, perception, learning, intelligence and personality in Psychological context.
CO2	Examine the knowledge related to the approaches used in the field of psychology to understand human behaviour and mental process.
CO3	Will be able to relate behavioural issues through theoretical approaches and methods ethically by contributing to society as a responsible citizen

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2		**1**
CO3		**1**

PPY18CT102 - BIOLOGICAL BASIS OF BEHAVIOUR

UNIT I:

Introduction: The origins of biopsychology, Nature of biological psychology - Mind Brain relationship, Methods of study of research in biopsychology-anatomical methods, degeneration techniques, lesion techniques, chemical methods, stereotaxic surgery, micro-electrode studies, oscilloscope, polygraph, scanning methods & Ethical issues in research

UNIT II:

Neurons and Neuronal Conduction Structure of neurons, types, functions, neural conduction, communication between neurons, Synaptic conduction, Neurotransmitters

UNIT III:

The Structure and Functioning of the Nervous System Basic features of nervous system, Meninges, Ventricular system, Cerebrospinal fluid, Blood brain barrier, Peripheral nervous system: Cranial Nerves, Spinal Nerves, Autonomous nervous system; Major structures and functions, spinal cord, Brain: Fore brain, Mid brain, Hind brain, Cerebral cortex, temporal, parietal and occipital lobes; prefrontal cortex

UNIT IV :

Biopsychology of Cognitive Functions Learning: Neurophysiology of learning, Synaptic plasticity; Memory: Neurological basis of memory, Brain damage and dysfunction of memory Language: Lateralization, Evolution and neurophysiology of speech.
Disorders of reading writing: apasia, alexia & dyslexia.

UNIT V:

Biopsychology of Arousal Physiological correlations of Arousal: consciousness and sleep, Factors affecting consciousness. Sleep: Rhythms of sleeping and waking, neural basis of biological clocks, Stages of sleep, brain mechanisms of REM sleep and dreaming, physiological mechanisms of sleep and waking, disorder of sleep.

Essential Reading

Carlson, N.R. (2004). Physiological of behavior (8th.ed.). Boston: Allyn& Bacon.
Kalat, J.W. (2004). Biological psychology (8th.ed.). Belmont: Wadsworth/Thomson learning.

Recommended Reading

1. *Wagner, H., & Silber, K. (2004),Physiological Psychology, Garland Science, Abingdon: UK.*
2. *Rosenweig, M.R., Leiman, A.L. & Breedlove, S.M. (1999). Biological psychology: An introduction to behavioral, cognitive, clinical neuroscience. (2nd ed.). USA:Sinauer Associates, Inc.*
3. *Wallace, B. & Fisher, L.E. (1991). Consciousness and Behavior (3rd ed.). USA: Allyn& Bacon.*
4. *Pinel, J.P.J. (2000). Biopsychology (4th .ed.). Boston: Allyn& Bacon.*
5. *Kandel, E.R. Schwartz, J.H. &Jessel, T.M. (2000).Principles of neural science (4th .ed.). New york: McGraw-Hill.*
6. *Leukel, F. (1985). Introduction to physiological psychology (3rd. ed.). New Delhi: CPS Publish*ers.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of biopsychology; examine the relationshipof behaviour with respect to individual physiology.

2. Analyze factors that influence on individual health and employ ways and means to optimise the same.

3. Relate the role of the brain in human performance and apply psychological techniques and theories to human performance within diverse population

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1			1	2		
2		1		2			1	1		
3	1	2	2				2	2	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of biopsychology; examine the relationshipof behaviour with respect to individual physiology
CO2	Analyze factors that influence on individual health and employ ways and means to optimise the same
CO3	Relate the role of the brain in human performance and apply psychological techniques and theories to human performance within diverse population

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PPY18CT103 - RESEARCH METHODOLOGY

UNIT I

Definition of research – meaning need, importance and scope of research in sports psychology and sociology. Classification of research Basic research, Action research, applied research. Ethics in research. Recent Research trends in Sports Psychology and Sociology.

UNIT II

Descriptive research methods – need and importance of survey Study, case study, interview technique, Historical and philosophical research, observation, construction and standardization of Questionnaire.

UNIT III

Research Design: Definition, Types of Research Design: Experimental design – Single group design – Reverse group design – Repeated measures design – Static group design – Factorial design – fixing the level of Significance and degrees of freedom for a research problem.

UNIT IV

Sampling: definition, sampling planning – components – sample methods – probability and non – probability methods – sampling distribution – determining sample size – sampling error.

UNIT V

Contents in the research report: Introduction – Hypothesis – Delimitation – Limitation - Review of related literature – Summary – Conclusion – Recommendations. Research format: Style of writing research report. Mechanism of writing Research Proposal - Abstract – Synopsis – References – Appendixes – Contents – Tables – figures – preliminary – end pages.

REFERENCES:

1. *Clarke David. H and Clarke H. Harrison (1984)* ***Research process in Physical Education****, New Jersey: Prentice Hall Inc.*
2. *Best, John W. and Kalm James, V. (1980)* ***Research in Education****, New Delhi: Prentice Hall of India.*
3. *Kothari C.R. (1985)* ***Research Methodology*** *2nd revised ed., New Age International, Publisher; New Delhi.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

. 1. Illustrate basic and applied research to address issues in psychology.

2. Understand and apply basic research methods in psychology, including research design, data analysis, and interpretation
3. Examine the importance of the use of statistical analyses and reporting of results in research publications.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1		2	2		2		
2		2		2		2		1		
3	1	1			2	2		1	1	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Illustrate basic and applied research to address issues in psychology.
CO2	Understand and apply basic research methods in psychology, including research design, data analysis, and interpretation
CO3	Examine the importance of the use of statistical analyses and reporting of results in research publications

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPY18CP104 - PSYCHOLOGICAL TESTING AND ASSESSMENT- I

1. Depth Perception
2. Creativity
3. Emotional Intelligence
4. Learning
5. Memory
6. Motor Learning – Star Pattern Drawing
7. Bender Gestalt Visual Motor Test
8. Life Skills
9. Big Five Personality
10. Raven's Progressive Test of Intelligence

REFERENCES:

1. *Woodworth, R.S. and Scholsberg (1972), Experimental psychology. Holt, Rinehart & Winston.*
2. *Anastasi & Susana Urbina (2004) 7th Edition, Psychological Testing, Pearson Education Inc, New Delhi..*
3. *Parameseswaran & Ravichandran. (2003). Experimental psychology. Neel Kamal Publications.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically access the information by administering the psychometric assessments to study human behaviour and mental processes.
2. Administers psychometric tools and interprets the evaluation of the basic psychometric tests and read and summarize general ideas and conclusions from psychological sources accurately.
3. Understand the ethical values of interpretation of the assessment tools.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2			1			2	1		
2		2		1			2	2	1	2
3	1		1		2				2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Critically access the information by administering the psychometric assessments study human behaviour and mental processes.
CO2	Administers psychometric tools and interprets the evaluation of the basic psychometric tests and read and summarize general ideas and conclusions from psychological sources accurately
CO3	Understand the ethical values of interpretation of the assessment tools.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

SECOND SEMESTER

PPY18CT201 - LIFE SPAN DEVELOPMENT

UNIT I: Life span development: issues and Theories: Introduction - Life span approach: The context of development – the impact of culture on development – the study of human development: The continuity of development – Determinants of Development – Major contemporary theories: Psychoanalytic, Cognitive and Behavioral

UNIT II: The Beginning Year: Genetics, Pregnancy, Birth and infancy : Genetic Foundations – The process of Conception – Prenatal Development – Stages of Prenatal development - Effects of prenatal environment – Birth : The Birth Process – Child birth methods – Complications – Infancy : Physical, perceptual, Cognitive , social and personality Development

UNIT III:Early childhood, Middle Childhood and Adolescence : Physical : Size and Proportion- Motor Development- Physical fitness – puberty- language – Structure of Language- language acquisition - concrete operational thought – Moral reasoning information processing : Attention- Memory – Disabilities in children- personality : The Development of self – Freud and Erikson's stage of personality – social : The child's Social world : Aggression, pro social behaviour - social play- self socialization

UNIT IV: Adulthood: Early, middle and late Adulthood – Physical, Cognitive, Personality, occupational , Family, Social relations and Adjustment – The impact of growing older- Metal health and aging – relations with grandchildren- retirement

UNIT V: Old Age

Death, Dying and Bereavement: Death: The Final Stage of life – The Dying Process: Kubler - Ross's Stage of Dying – Near Death Experiences – Issues in the care of Dying – Hospital Care – Bereavement.

References:

1. *Gormly, A.V. and Brodzinsky, D.M. Lifespan Human Development. NY: Harcourt Brace College Publishers 1993*
2. *VendarZanden, J.W. Human Development . New Delhi: McGraw Hill. Inc. 1993*
3. *Human Development – Elizabeth Hurlock*
4. *Human Development - Papalia*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically assess information related to different developmental processes in a life span of a person.
2. List and evaluate the differences between the various methods of investigation used in developmental studies and the relationship between physiology, cognition, and emotion in the different developmental stages.
3. Identify and evaluate factors affecting the physical, social, emotional, psychological, and intellectual development of children, adolescents and aged.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2			1			2	1		
2		2		1			2	2	1	2
3	1		1		2				2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Critically assess information related to different developmental processes in a life span of a person
CO2	List and evaluate the differences between the various methods of investigation used in developmental studies and the relationship between physiology, cognition, and emotion in the different developmental stages
CO3	Identify and evaluate factors affecting the physical, social, emotional, psychological, and intellectual development of children, adolescents and aged.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPY18CT202 – PSYCHOPATHOLOGY -I

UNIT I : Introduction : Definition of psychopathology - Historical views of abnormal behavior - The stigma of abnormal behavior – Adaptive and Maladaptive behavior – Adaptation and Adjustment – Personal Maturity and Growth- Group well being and progress – Types of treatment facilities – Types of Mental Health specialists

UNIT II : Classification - Categories of Maladaptive Behaviour :
Systems of classification, basic features; DSM-V, ICD-10, similarities, differences – Advantages and Disadvantages of Classification – Major Diagnostic Categories –

UNIT III: Psychological factors and Physical Symptoms
The Bio- Psychosocial Model – Stress and illness – Psycho-Physiological Disorders- Classification of psycho physiological disorders – Rheumatoid Arthritis , low back pain, cancer, cardiovascular disorders- coronary heart disease – essential hypertension – headaches – migraine – tension headaches – asthma – eczema – peptic ulcers- colitis – genitourinary disorders – menstrual disorders

UNIT IV : Psychopathology of addiction and sexual disorders Substance use disorders – substance dependence – substance abuse – substance induced disorders – alcohol related disorders- other drugs. Sexual deviations- forms of sexual deviations - causes – treatment

UNIT V : Neuro psychological and somatoform and behavioural syndromes.
Dementia, delirium, head injury, epilepsy, other amnesic syndromes -Dissociative disorder, somatoform disorder- other neurotic disorder; Eating disorder : Anorexia, binge eating - sleep disorder - Clinical characteristics and etiology.

References:

1. *Ahuja N (2002). A short text book of Psychiatry (5th edition). New Delhi. Jaypee Brothers.*
2. *Sadock, B.J. &Sadock, V.A. (2003). Kaplan &Sadock's Synopsis of psychiatry: Behavioral sciences/clinical psychiatry (9th. Ed.). Philadelphia: Lippincott Williams & Wilkins*
3. *Hecker, S.E. & Thorpe, G.L. (2005). Introduction to clinical psychology: Science, practice & ethics. Delhi: Pearson Education, Inc.*
4. *Adams, H.E., Sutker, P.B. (2001). Comprehensive handbook of psychopathology (3rd Ed.).*
5. *New York: Kluwer Academic publishers.*
6. *Millon, T., Blaney, P., & Davis, R.D. (1998). The oxford textbook of psychopathology.*
7. *London: Oxford University Press.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of the biological, psychological, behavioural, cognitive, humanistic-existential and sociocultural models of abnormal behaviour and its influence on individual.

2. Analyse the different systems of classifications of maladaptive behaviour

3. Develop critical thinking and apply strategies on solving the emotional, behavioural and other psychopathological issues that affect people.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2		1	1			1			
2			1	2	1	1		1		
3	1	2	2				2	2	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of the biological, psychological, behavioural, cognitive, humanistic-existential and sociocultural models of abnormal behaviour and its influence on individual
CO2	Analyse the different systems of classifications of maladaptive behaviour
CO3	Develop critical thinking and apply strategies on solving the emotional, behavioural and other psychopathological issues that affect people

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PPY18CT203 – BEHAVIORAL STATISTICS

UNIT I : Introduction to statistics types, classification and basic concepts of statistics – Measures of central tendency – Mean, Median and Mode – Measures of variability: Range, Mean deviation Quartile Deviation and standard deviation.

UNIT II : Introduction to Normal distribution – Normal curve – Characteristics of Normal Curve – Standard Normal Curve - Problems Based on Normal distribution – Uses of Normal distribution.

UNIT III : Testing of Hypothesis: Hypothesis – Type I & II error – Acceptance and critical Region – Test of significance of a single Mean – Difference between two means for small and large sample tests – paired t – test for difference of mean.

UNIT IV Single Sample t-test, t-test distribution – Paired sample t-test, Indpendent sample t-test, - Between Group ANOVA – Within Group ANOVA – Two way between groups ANOVA.

UNIT V : Pearson product moment correlation – Rank order correlation – Partial and Multiple correlation – Chi square – Test for Independence – contingency coefficient.

REFERENCES:

1. *Susan A. Nolan, Thomas E. Heinzen (2011)- Statistics for Behavioral Science , 2nd Edition, Worth Publishers, New York.*
2. *Rand Wilcox, (2012)Modern Statistics for the Social and Behavior Sciences – A practical Introduction*
3. *Thomson AL. (1986)* ***The Art of Using Computers****, Boyd & Frasher Boston:*

publishing Co.

4. *Paul R Kinnear and Collin D Gray (2006) –****SPSS 14 Made Simple****, New York:*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of organize, manage, present data,describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis.

2. Critically evaluate the underlying assumptions of analysis tools anddiscuss the issues surrounding sampling and significance

3.To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1		

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of organize, manage, present data,describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis.
CO2	Critically evaluate the underlying assumptions of analysis tools and discuss the issues surrounding sampling and significance
CO3	To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPY18CP204 - PSYCHOLOGICAL TESTING - II

Students are required to conduct and record any 08 experiments.

1. Bhatia's Battery of Test of Intelligence
2. Projective Test – Sentence Completion Test
3. Mindfulness
4. Bio-feedback
5. 16 Personality Factors
6. Performance Failure Appraisal Inventory
7. DAS Scale
8. Profile of Mood States
9. Myer Briggs Personality Types
10. Psychological Performance Inventory

/

REFERENCES:

1. *Woodworth, R.S. and Scholsberg (1972), Experimental psychology. Holt, Rinehart & Winston.*
2. *Anastasi & Susana Urbina (2004) 7th Edition, Psychological Testing, Pearson Education Inc, New Delhi..*
3. *Parameswaran & Ravichandran. (2003). Experimental psychology. Neel Kamal Publications.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically assess the information by administering the psychometric assessments to study human behaviour and mental processes and also forms conclusions and arguments

2. Administers psychometric tools and interprets the evaluation for framing the strategy to improve the sports performance and mental health of the athlete

3. To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1		

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Critically assess the information by administering the psychometric assessments to study human behaviour and mental processes and also forms conclusions and arguments
CO2	Administers psychometric tools and interprets the evaluation for framing the strategy to improve performance as the individual and group
CO3	To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

THIRD SEMESTER

PSP18CT301: FUNDAMENTALS OF COUNSELING SKILLS

UNIT I

Introduction: Definition – Development and goals- History and Current trends in counseling – Counselor – the nature of counselor's work - counselee relationship - counseling process: Steps – purposes of counseling - scope of counseling – characteristics of effective counseling -

UNIT II

Approaches to Counseling: Directive, Non-directive, Psychoanalytic, Humanistic, Reciprocal inhibition technique, Eclectic approach - Basic Counseling Theories – Psychoanalytic theory, Adlerian theory, Existential theory, person centered theory, gestalt theory- Counselling in India - legal and ethical issues: ethical issues – ethical dilemmas – legal concerns of counselor.

UNIT III

Special areas: Family counseling, students counseling, parental counseling, educational, vocational and career counseling - Counseling Interview: Communication, verbal, nonverbal, interview, techniques of interview, relationship technique, problem identification and exploration, sharing, transference, counter transference. - Counseling the special population - global counseling and trauma counseling

UNIT IV

Professional Preparation & Training**:** Selection, skills, counseling as a profession, desirable characteristics - Modern Trends: Career guidance, Functions of counselor, stages of counseling - Techniques: Egan's Model, Interviews, testing-– Mastering the techniques of counseling :

UNIT V

Group Counseling **–** Definitions — values of group Counseling - Group therapy – Training & Sensitivity groups – Group process and group dynamics - Group Counseling and Group therapy; Group vs. Individual Counseling; Types of groups - Issues in Group Counseling.

REFERENCE:

1. Lewis E. Patterson and Elizabeth Reynolds Welfel (2000). The Counselling Process, 5th

edition, Wasworth Brooks / Cole, Thomson Learning.

2. S. Narayana Rao (1981) Counselling Psychology, Tata McGraw Hill Publisher.
3. Brammer. L.M. and Shostrom E.L. (1977) Therapeutic Psychology, Englewood Cliffs, New Jersey.
4. Feltham. C & Horton. I (2000) Handbook of Counselling and Psychotherapy, London : Sage Publication.
5. Nelson - Jones, R. (1995). The Theory and Practice of Counselling, 2nd Edition, London : Cassell.
6. Covey, G. (2008). Theory and Practice of Counselling and Psychotherapy (8th ed.) Canada: Brookes/Cole.
7. Covey, G. (2008). Student manual for Theory and Practice of Counselling and Psychotherapy (8th ed.). CA: Brooks/Cole.
8. Burl E. Gilland & Richard K. James (1998). Theories and Strategies in Counselling and Psychotherapy. Singapore: Allyn and Bacon.
9. James O. Prochaska & John C. Norcross. (2007). Systems of Psychotherapy: A trans theoretical analysis (6th ed.). Thomson-Brooks/Cole.
10. Palmer, S. (ed.). (1999). Introduction to counselling and psychotherapy: The essential guide. New Delhi: Sage.
11. Simon, L. (2000). Psychotherapy: Theory, practice, modern and post modern influences.

Westport, Connecticut: Praeger.

12. Sharf, R.S.(2000). Theories of psychotherapy and counselling: Concepts and cases (2nd ed.).Singapore: Brooks/Cole.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of psychological principles; professional and ethical practice in the role of counsellor in various settings.

2. Develop knowledge on career assessments related to interests, personality, values, and career development.

3. Describe the role that human growth and development in counselling interventions and gain ability for appropriate modification made in a multicultural society.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1	2	1		1	2		
2		1		2	1	1	1	1		
3	1	2	2		1	1	2	1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of psychological principles; professional and ethical practice in the role of counsellor in various settings.
CO2	Develop knowledge on career assessments related to interests, personality, values, and career development.
CO3	Describe the role that human growth and development in counselling interventions and gain ability for appropriate modification made in a multicultural society.

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2		**1**
CO3		**1**

PPY18CT302 - ADVANCED SOCIAL PSYCHOLOGY

UNIT I : Historical and Conceptual Issues in Social Psychology : The definition and nature of social psychology; Growth of social psychology; alternative conceptions of social psychology; Development of social psychology in India; Current status of the discipline;

indigenization of social psychology; Issues in experimental social psychology; Emerging alternative methods in social psychology; Ethical issues in social psychological research.

UNIT II : Social Interaction : Social cognition and impression management Self and identity. Culture and Development of Self. Social Identity. Diverse identities; Attribution- theories, biases and errors; Organizing and Changing attitudes; persuasion and propaganda techniques; The development of social representation; Prejudice, Stereotypes and Discrimination; Theories of inter-group relations;Reducing prejudice.

UNIT III: Inter personal attraction : Interpersonal attraction and altruism-the beginning of attraction: proximity and emotions-the need to affiliate and the effect of observable characteristics-altruism- why, when, whom do we help-increasing helping behavior

UNIT IV: Conflict and peacemaking : Conflict and peacemaking-conflict: social dilemmas, competition, perceived injustice, misperception, peacemaking - contact, cooperation, communication, conciliation - Aggression: Theories and individual differences in aggression; Violence- sexual harassment, genocide, terrorism

UNIT V : Social Issues :

Environmental stresses and social behavior; Social psychological perspectives on health and illness; Culture Cross- cultural aspects of coping ;Psychological effects of unemployment. Social and ethnic minorities and law; Cross-cultural psychology: Diversity in socialization: Individualistic vs. collectivistic culture: Poverty and deprivation- Application of social psychology to sports, military and media.

REFERENCES:

1. *Myers David G.(2002).Social Psychology.7thEdn., McGraw Hill Book Company*
2. *Baron A. And Byrne D. (2002). Social Psychology.TenthEdn.Prentice Hall Of India*
3. *Aronson, E., Wilson, T.D., and Akert, R.M. (1999). Social Psychology (3rd ed.). New York: Longman.*
4. *Fraser, C., and Burchell, B. (2001).Introducing Social Psychology. Cambridge: Polity.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the fundamental principles, major theories, concepts and perspectives in the field of social psychology.

2.Compare and contrast the major theories, concepts, empirical findings, methods and techniques used in social psychology

3. Integrate different perspectives discussed in class to explain social behavior in humans.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	2		1		1	1			
2		2		2	1	2	1	1		
3			2	1	1	2			2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the fundamental principles, major theories, concepts and perspectives in the field of social psychology
CO2	Compare and contrast the major theories, concepts, empirical findings, methods and techniques used in social psychology
CO3	Integrate different perspectives discussed in class to explain social behavior in humans

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPY18CT 303 - PSYCHOPATHOLOGY – II

UNIT I : Psychotic Disorder : Schizophrenic disorders – Definition – Characteristics- positive symptoms : Delusions, Hallucinations, Disorganized speech , disorganized and bizarre behavior - negative symptoms :Flat affect, poverty of speech, loss of directedness of motivation – loss of energy – loss of feelings of pleasure – Major subtypes of Schizophrenia – Therapeutic approaches

UNIT II : Anxiety Disorders : Anxiety Disorder - Causes of Anxiety neuroses: Emotional conflict, Repression of the self assertive tendency , mental conflicts and frustration – difference between normal anxiety and neurotic anxiety – treatment – Panic disorder – Obsessive – compulsive neuroses – Phobias – phobia fear differs from normal fear in several respects.

UNIT III:Personality Disorder : Major personality disorders – its characteristics – paranoid personality disorder – schizoid personality disorder- Schizotypal personality disorder- Narcissistic personality disorder – borderline personality disorder – Antisocial Personality disorder – Dependent personality disorder – OCD – Treatment

UNIT IV : Mood disorder : Types of Mood Disorder: Dysthymic disorder – major depressive disorder – Theoretical perspective of Depression: The psychodynamic view, the behavioral perspective , the cognitive perspective, the human existential perspective – treatment

UNIT V: Disorders of Infancy, Childhood and Adolescence : Specific developmental disorder of scholastic skills: Mental Retardation, Learning Disorders, ADHD, Pervasive developmental disorders; Behavioral and emotional disorders; Disorders of social functioning- etiology and treatment

REFERENCES:

1. *Ahuja N (2002). A short text book of Psychiatry (5th edition). New Delhi. Jaypee Brothers.*
2. *Sadock, B.J. &Sadock, V.A. (2003). Kaplan &Sadock's Synopsis of psychiatry: Behavioral sciences/clinical psychiatry (9th. Ed.). Philadelphia: Lippincott Williams & Wilkins*
3. *Hecker, S.E. & Thorpe, G.L. (2005). Introduction to clinical psychology: Science, practice & ethics. Delhi: Pearson Education, Inc.*
4. *Adams, H.E., Sutker, P.B. (2001). Comprehensive handbook of psychopathology (3rd Ed.).*
5. *New York: Kluwer Academic publishers.*
6. *Millon, T., Blaney, P., & Davis, R.D. (1998). The oxford textbook of psychopathology.*
7. *London: Oxford University Press.*
8. *Smith, N.W. (2001). Current systems in psychology: History, theory, research & applications. USA: Wadsworth/Thomson learning.*
9. *American Psychological Association. (1998). Diagnostic and statistical manual of mental*
10. *disorders (4th .ed.): text revision (DSM-1V-TR). New Delhi: Jaypee Brothers Medica*l *Publishers (pvt) Lt*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically assess the information by administering the psychometric assessments to study human behaviour and mental processes and also forms conclusions and arguments

2. Administers psychometric tools and interprets the evaluation for framing the strategy to improve the sports performance and mental health of the athlete

3. To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1		

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of the biological, psychological, behavioural, cognitive, humanistic-existential and sociocultural models of abnormal behaviour and its influence on individual.
CO2	Analyse the different systems of classifications of maladaptive behaviour
CO3	Develop critical thinking and apply strategies on solving the emotional, behavioural and other psychopathological issues that affect people.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PSO18AEC02 – LIFE SKILLS MANAGEMENT (ACE II)

Unit I:

Introduction: Soft Skills - Concepts and Definition- Need and importance of Soft Skills – Developing Soft Skills – Implications on Youth Development .

Unit II:

Behavioral Skills : Attitude, Lateral Thinking , Emotional Intelligence, Leadership, Team Building and Interpersonal Skills.

Unit III

Social Skills and Negotiation Skills: Self Awareness and Empathy , Influencing, - Effective Communication –Oral Presentation Skills – Interviewing – Delegating.

Unit IV:

Thinking Skills: Critical Thinking and Creative Thinking – Problem Solving and Decision Making skills.

Unit V:

Coping Skills : Coping with stress and Emotions – Conflict Resolution – Negotiating - Time and Stress Management Skills.

REFERENCES:

G. Ravindran, S P Benjamin, Elango and R. Arokiam (2007) - Success through Soft Skills, ICT

Kamin M (2013) Soft Skills Revolution: A Guide for Connecting with Compassion for Trainers, Teams, and Leaders. ISBN: 978-1-118-10037-0

COURSE OUTCOMES

At the end of the course, the student will be able to:

- Demonstrate fundamental knowledge and comprehension of the major concepts, to discuss psychological principles to building life skill.
- Develop and exhibit and accurate sense of self, nurture a deep understanding of personal motivation.
- Understand and practice personal and professional responsibility, strengthen personal character and enhance ethical sense.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	2	1			1	2	1	
2	1	2	1	2	1		1	2		
3		2	1	2		1	1	1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Demonstrate fundamental knowledge and comprehension of the major concepts, to discuss psychological principles to building life skill.
CO2	Develop and exhibit and accurate sense of self, nurture a deep understanding of personal motivation.
CO3	Understand and practice personal and professional responsibility, strengthen personal character and enhance ethical sense

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3		**1**

FOURTH SEMESTER

SP18CT401: COUNSELING AND BEHAVIOR MODIFICATION

UNIT I

Basic concepts – Meaning of Counseling –Goals of counselling – counselling process – characteristics of counselor – Group counselling – special areas of counselling - applied areas multicultural counselling – Ethical issues- Psychotherapy – Effectiveness Of Psychotherapy

UNIT II

Approaches to counselling, person centered, Gestalt, Psychoanalytic, Cognitive, Trait factor, Behavioral and eclectic approach - Assessment Techniques - Important Factors – Tools of Assessment- Theories : Psychodynamic – Psychoanalytic and Adlerian Therapy Cognitive and Behavioural therapy: Behavioural Therapy – OCD, Cognitive: Beck's Cognitive Restructuring Therapy

UNIT III

Basic concepts of Behaviour Modification: Behaviour Counselling: Salient Features Enhancement of Client's Involvement – Some Misconceptions about Behavioral Approach. Relaxation Techniques: Jacobson's Deep Muscle Relaxation Training, Autogenic Training, Yoga and Meditation. Application of Behavior Therapy: Anxiety Disorders, Psychoactive substance use disorders, Sexual Disorders

UNIT IV

Assertion Training – Basic Dimensions – Training procedure – Components of Social Skill Training – Uses of social skill training – Precautionary points – systematic desensitization -. Operant Conditioning Techniques – Basic Paradigm – Schedules of Reinforcement – Aversive Conditioning and application – Token Economy – Shaping – Chaining – Other Operant Procedures, Premack's Principle and Prompting.

UNIT V

Cognitive Behaviour Modification – Fundamental Aspects – Cognitive Restructuring – Meichenbaum's Self Instructional training – Beck's Model – Rational Emotive Therapy (Ellis) – Thought Stopping and Variations – Problem Solving Techniques.

REFERENCES:

1. Corey, G (2005), Theory and Practice of Counseling and Psychotherapy, 7th Edition, Scarborough, Brooks/Cole.
2. Martin, G & Pear J (2000) Behavior Modification (7edition), New Delhi, Prentice Hall of India Pvt. Ltd.

3. Wolpe, J (1982), Practice of Behavior Therapy (3rd edition), New York, Oxford Pergamon Press Inc.
4. Nelson-Jones, R. (1994). - The theory of practice of counseling psychology – Cassel London.
5. Rimm, D.C. and Masters, J.C. (1974), - Behaviour Therapy: Techniques and Empirical Findings. New York: John Wiley and Sons.
6. Robert C. Carson. James. N. Butcher and Susan Mincka (1996) - Abnormal Psychology and Modern Life, 10th Edition, New York; Harper Collins College Publishers.
7. Swaminathan V.D. and Kaliappan, K.V. (1997), Psychology for effective living – Behaviour modification, Guidance, Counselling and Yoga, Chennai. The madras Psychology society publication.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1.Understand theories and practices related to human development across the lifespan, goals, principles and ethics involved in counselling

2.Assess and analyse behavioural issues with in day-to-day context and come up effective strategies to resolve conflicts.

3. Recommend techniques and training to enhance mental health, building, maintaining, and utilizing counselling relationships to address mental health issues and meet client goals.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	1	1			1	2		
2		1		2	1	1	1	1		
3	1					1	2	2		

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand theories and practices related to human development across the lifespan, goals, principles and ethics involved in counselling
CO2	Assess and analyse behavioural issues with in day-to-day context and come up effective strategies to resolve conflicts.
CO3	Recommend techniques and training to enhance mental health, building, maintaining, and utilizing counselling relationships to address mental health issues and meet client goals

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2		**1**
CO3		**1**

PPY18CT402: ORGANIZATIONAL BEHAVIOUR

UNIT I

Introduction to the Field of OB – Definition Of OB – Various Disciplines Contributing To OB – Need, Scope And Importance Of OB – Foundations Of Individual Behavior – Framework of Organizational Behavior Models.

UNIT II

Motivational Process: Motivation at Workplace – Kinds of Motivation – Theories: Maslow's, Herzberg Two Factor Theory, ERG Theory, Theory X And Y, Mcclellands Need Theory – Goal Setting – Emotional Intelligence – Meaning and Components – Emotional Intelligence at Workplace.

UNIT III

Groups and Communication: Role of Communication – Communication Channels – Communication Barriers – Non-Verbal Communication – Upward And Downward Communication - Groups: Group Dynamics – Group Behavior – Formation – Types of Groups, Stages of Group Development.

UNIT IV

Leadership – Meaning – Importance in Organization – Theories – Leadership Styles – Leaders Vs Manager: Conflict – Nature – Types of Conflict – Management of Conflicts – Transactional Analysis.

UNIT V

Organizational Structure and Design – Organizational Climate – Factors Affecting Climate – Importance – Job Satisfaction – Organizational Development – Organizational Culture – Organizational Change – Current Trends in OB.

Reference

Stephen Robbins – Organizational Behavior, Prentice Hall Of India

Udai Pareek – Undrestanding Organisational Behaviour, Oxford University Press

L.M.Prasad – Organistaional Behaviour, Sultan Chund And Sons

Fred Luthans – Organisational Behaviour, Mcgrove Hill Book Company

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Acquire and develop skill to take rational decisions in the process of O.B. People have always been regarded as important in managing organizations.

2. Critically evaluate the human aspects are critical in each functional aspects of management and equally so for the effective utilization of resources and analyze the complexities associated with management of the group behavior in the organization.

3. Demonstrate how the organizational behavior can integrate in understanding the motivation behind behavior of people in the organization

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		2	1			
2		2		1	1	1	1	1	2	
3	1		2	2	1	2	1	1	2	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Acquire and develop skill to take rational decisions in the process of O.B. People have always been regarded as important in managing organizations
CO2	Critically evaluate the human aspects are critical in each functional aspects of management and equally so for the effective utilization of resources and analyze the complexities associated with management of the group behavior in the organization.
CO3	Demonstrate how the organizational behavior can integrate in understanding the motivation behind behavior of people in the organization

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2		**1**
CO3		**1**

PPY18CT403 - TRAINING AND DEVELOPMENT

Unit I:Training and Development : Training as a part of the HR functions Training objectives – overviews on different training theory, process of training in training program– attributes and factors influencing;

Unit II:Training Process : Training needs analysis, frame work for identifying Training needs, Assessment of Training needs, Approaches of TNA, methods and process of needs assessment, Issues in TNA Design and develop training, Developing objectives, Training plan and design. Training Evaluation.

Unit III:Training Design and Methods:
Elements in delivering training, various techniques and methods of training and development, technology and training, E training,

Unit IV:Training Program : Creative training Program-Instructional Design and Methods-Leadership and development, training leaders, leadership feedbacks, cross cultural training and diversity training – Development of need based training module.

Unit V:Training Evaluation: Training evaluation: Need for evaluation, concept of return on investment, models of Training Special issues in training and development. Special challenges in career management Future of training and development. Competency mapping

References:

1. *Nick, P. B., & James, T. W. (2008).Effective training - systems, strategies and practices.Prentice hall.*
2. *Bhatia, S.B. K. (2009). Training and development : concepts and practice. New Delhi: Deepand Deep publication private limited.*
3. *Lucas, R. W. (2005). Creative training book.Amacom publication private limited.*
4. *Pareek, U. (2010). Training instruments for HRD.New Delhi: 3rd Edition, Mcgraw hill.*
5. *Randy, D. L., Jon, W. M., & David, H. M. (2002). Human resource development.cincinnati: Thomson/south - western college publishing. Noe.R. (2008).Employee training and development .New York: Mcgraw Hill.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the explain the role of training and development in human resources management and describe the psychology of the learning process in training and development process.

2. Critically evaluate the different process of assessment, design and implement various methods, techniques and sources of training.

3. To develop the students' ability to evaluate the value of the training once completed from the individual and the organization's viewpoint

MAPPING OF POs WITH COs

COURSE OBJECTIVES	PROGRAM OBJECTIVES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1	2	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the explain the role of training and development in human resources management and describe the psychology of the learning process in training and development process.
CO2	Critically evaluate the different process of assessment, design and implement various methods, techniques and sources of training.
CO3	To develop the students' ability to evaluate the value of the training once completed from the individual and the organization's viewpoint

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PPY18CT404 - THESIS

Students are required to submit a thesis at the end of the year. The thesis shall embody the record of original investigation under the guidance of a supervisor.

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COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Enable the students to identify a problem in their area of interest and finding ways to solve the problem

2. Gathering related literature and analyzing data pertaining to their study

3 . Gaining appropriate scientific writing skills.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	1	2							
2		1	1		2				2	
3		3	1	1	2				1	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Enabling the students to identify a problem in their area of interest and finding ways in tackling and solving the problem
CO2	Gathering related literature and analyzing data pertaining to their study
CO3	Gaining appropriate scientific writing skills

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

LIST OF DISCIPLINE SPECIFIC ELECTIVES

PAPER CODE	PAPER TITLE
PPY18DSE01	MANAGERIAL PSYCHOLOGY
PPY18DSE02	SOCIAL PROBLEMS AND ISSUES
PPY18DSE03	CLASSROOM PSYCHOLOGY
PPY18DSE04	PSYCHOMETRICS
PPY18DSE05	MARKETING AND CONSUMER BEHAVIOUR
PPY18DSE06	PSYCHOLOGY OF INTERPERSONAL RELATIONSHIP
PPY18DSE07	COPING WITH STRESS
PPY18DSE08	POSITIVE PSYCHOLOGY

PPY18DSE01 - MANAGERIAL PSYCHOLOGY

Unit I: Human resource management: Nature, Function, Personnel Management vs. HRM, HRD vs. HRM, Context and issues in HRM.

Unit II: Human Resource Planning: Importance, process, Forecasting Demand, Estimating Supply, Effective HRP, Human resource accounting. Job Analysis: Uses, Process, Methods, job description & job specifications

Unit III: Recruitment: Objectives & Constraints, Sources, Methods, Selection: Process, Tests for Selection (Cognitive Ability, Motor & Physical Ability, Personality, Achievement), Interview as selection Device.

Unit IV: Job Evaluation: Uses, Methods, job evaluation and Establishing pay structure. Performance Appraisal: Comparing with Performance Management, Methods, Challenges, Legal implications

Unit V: (i) Employee compensation: Incentive Plans: Individual Employee, Team/Group, organisation-wide. Employee Benefits: Pay for time not worked, Insurance benefits, Retirement benefit, Personal & Family friendly benefits. (ii) Health & Safety: Legal Provisions, Measures, Accidents, Safety Management. Grievance & Discipline: Features & Forms, Model Grievance Procedure, Approaches to Discipline, Disciplinary Action, Essentials for a Good Disciplinary System.

References

Decenzo, D.A. & Robbins, S.P. (2004). Personnel and human resource management. New Delhi

Dessler, G. (2005). Human resource management. New Delhi: PearsonPrentice Hall.

Rao V.S.P. (2007). Human resources management: Text and cases. New Delhi: Excel Books .

Bermardin, H.J. (2007). Human resource management. New Delhi: Tata McGraw Hill.

Greenberg & Baron (2008). Behavior in organizations. 9th edition. NJ. Prentice Hall. *

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basic psychological principles in the organisation hierarchy which focuses on the efficacy of individuals, groups and organizations in the workplace.

2. Critically evaluate the underlying assumptions of analysis tools and discuss the issues surrounding sampling and significance of psychological patterns among individuals and groups in a way that will benefit the organisation.

3.To develop ability to identify skills, motivate, develop and persuade others, train and screen job applicants, assist with organizational development, and consult with corporations on a problem-solving basis.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		2
3	1		2	2	1	2	1	1	2	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basic psychological principles in the organisation hierarchy which focuses on the efficacy of individuals, groups and organizations in the workplace
CO2	Critically evaluate the underlying assumptions of analysis tools and discuss the issues surrounding sampling and significance of psychological patterns among individuals and groups in a way that will benefit the organisation
CO3	To develop ability to identify skills, motivate, develop and persuade others, train and screen job applicants, assist with organizational development, and consult with corporations on a problem-solving basis

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2		**1**
CO3		**1**

PPY18DSE02 - SOCIAL PROBLEMS AND ISSUES

UNIT I Social Problems, Theoretical approaches to Social Problems; Social Problems and Disorganization.

UNIT II Social Deviance - Crime – Meaning – Types – Theories of Crime – Confinement and Correction of Criminals. Juvenile Delinquency – Meaning – Types – Causes – Characteristics – Factors Involved – Methods of treating delinquents-Corruption

UNIT III Poverty & Unemployment-Conceptual debate-causes-Rural poverty-Effective measures in poverty alleviation-Unemployment in India-Types-Causes-Consequences-Remedies

UNIT IV Terrorism – Characteristics – Objective – Origin and Development – Terrorism in India – Terrorism in other countries – Theoretical explanation of - Terrorism – Sociology of Terrorism.

UNIT V Female foeticide, Female infanticide and Domestic Violence
-Female foeticide –Female infanticide - Causes and Consequences - Possible Solution
- Domestic Violence-Causes-Effects of Domestic Violence

REFERENCES:

1. *Robert K. Merton and Robert Nisbet, (ed.) Contemporary social problems, Harcourt Brace, New York. 1971*
2. *Madan G.R. Indian Social problems Allied Publisher, New Delhi.1976*
3. *Ahuja Ram. Social problems in IndiaRawat Publication, New Delhi. 1999*
4. *Elliot, Mabel A and Merrill, Francis E., Social Disorganization, Harper and Brothers, New York, 1950*
5. *Gurr, Ted Robert, Why Men Rebel, Princeton: Princeton University Press, 1970*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of sociological perspective to the study of social problems, including their identification, analyses of causes and consequences of issues existing in society

2. Critically evaluate the underlying assumptions of topics such as inequality, poverty, crime and delinquency, substance abuse, discrimination, domestic violence, the environment, global stratification, and international conflict

3. Analyse the causes and consequences of social problems and participate as active citizens in their societies and communities, demonstrating respect for diversity, critical thinking, and collaboration in problem-solving.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		1	1	1	2		1	2
3	1		1	2	1		1		2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of sociological perspective to the study of social problems, including their identification, analyses of causes and consequences of issues existing in society
CO2	Critically evaluate the underlying assumptions of topics such as inequality, poverty, crime and delinquency, substance abuse, discrimination, domestic violence, the environment, global stratification, and international conflict
CO3	Analyse the causes and consequences of social problems and participate as active citizens in their societies and communities, demonstrating respect for diversity, critical thinking, and collaboration in problem-solving

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2		**1**
CO3		**1**

PPY18DSE03: CLASSROOM PSYCHOLOGY

Unit I: Introduction: Class room behavior in school setting - Social interaction between teacher and child - Influence of peer group - conformity and non-conformity in schools - nature of communication - interaction analysis in communication - social learning and role models - friendship patterns in the classroom and sociometry scale.

Unit II: Class control and management

Class control and management - defining problem behavior - behavior modification techniques in classroom - merits and drawbacks of behavior modification techniques - group behavior problems - School refusal problems - Use of punishment and reinforcement for class room management.

Unit III: Educational guidance and counseling

Educational guidance and counseling - counseling in school - The problem of confidentiality - The importance of sympathy - The Counseling process - Categorizing the child's problem - The role of the counselor - Problems faced by the counselor.

Unit IV: Vocational Guidance

Vocational Guidance - developmental Stages in Career Choice – Steps in career decision making – Career counseling - The role of Counselor in Vocational guidance - sex education for moral development and appropriate social behavior -role of teacher as an applied psychologist.

Unit V: Skill development

Skill development - study skills development - Oral presentation skills - Written communication skills - Assertiveness skill development - Goal setting skills - Positive thinking skills - Techniques of creative thinking.

References:

1. *Think like a Winner by Walter Doyle Staples. UBPSD, New Delhi 1996.*
2. *Psychology for Teachers by David Fontana, 3rd Ed. Palgrave: UK 1995*
3. *Modern Applied Psychology by Arnold P. Goldstein and Leonard Krasner.Pergamon Press, Inc. New York 19*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics about both general and special education, school systems and structures other educational and related services; understand schools and other settings as systems.

2. Exhibit the ability to work with individuals and groups to facilitate practices that create and maintain safe and effective learning environments for children and others.

3.Assess learning and scored in a standardized fashion and systematically collects and disseminates information essential to data-based decision-making process.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	2		1		1	1			1
2		1	1	1	1	1	1	1	1	
3	1		2	2	1	2	1	1	2	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics about both general and special education, school systems and structures other educational and related services; understand schools and other settings as systems.
CO2	Exhibit the ability to work with individuals and groups to facilitate practices that create and maintain safe and effective learning environments for children and others
CO3	Assess learning and scored in a standardized fashion and systematically collects and disseminates information essential to data-based decision-making process

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2		**1**
CO3		**1**

PSP18DSE04: PSYCHOMETRICS

Unit I:

Introduction – Psychological Measurement and Tests – Tests and Samples of Behavior – Types of Tests – Origin of Psychometrics – Measurement – Measuring Behavior – Psychometrics and its importance to Research and Practice**.**

Unit II:

Measurement and Statistical Concepts – Numbers and Measurements – Units of Measurement – Levels of Measurement : Nominal, Ordinal, Internal Ratio.

Unit III:

Scaling – History of Scaling – Psychophysical Vs Psychological Scaling- Scaling Models: Stimulus Centered, Response Centered, Subject Centered – Data organization and Missing Data – Incomplete and Missing Data.

Unit IV:

Guidelines for Test and Instrument Development – 10 Guidelines – Item Analysis – Item Discrimination – Point Biserial – Biserial Correlation – Phi Coefficient – Tetrachoric Correlation – Item Reliability and Validity.

Unit V:

Standard Setting: Standard Setting Approaches : The Nedelsky Method, The Ebel Method - The Angoff Method and Modification – The Bookmark Method.

REFERENCES:

Larry R. Price (2017) Psychometric Methods – Theory into Practice , Guilford Press, New York, New York.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of psychological measurement and tests; examine the relation to psychometrics and its importance in research.

2. Analyze thedifference between psychological tests and psychometric tests

3. Recommend appropriate tools in accordance with reliability and validity and other guidelines to be followed in different settings.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1		2	1			1	1		
2				2	1		1	1		
3	1	1	2			2		1	1	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of psychological measurement and tests; examine the relation to psychometrics and its importance in research.
CO2	Analyze the difference between psychological tests and psychometric tests
CO3	Recommend appropriate tools in accordance with reliability and validity and other guidelines to be followed in different settings.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSP18DSE05: MARKETING AND CONSUMER BEHAVIOUR

Unit I:

Understanding Marketing Management Basic Concepts of Marketing-Market Oriented Strategic Planning Corporate and Division Strategic Planning Identifying and Analyzing Competitors.

Unit II:

Developing Market Strategies Differentiating and Positioning Challenges in New Product Development Market Testing Customer Adoption Process. Components Of Marketing Information System Marketing Intelligence System – Marketing Research Marketing Decision Support System-Marketing Research Program For A New Product- Common Errors.

Unit III:

Managing Marketing Communications Developing Effective Communications Developing and Managing an Advertising Program Media Decisions- Sales Promotions and Public Relations

Unit IV:

Understanding Consumer Behaviour Definition Influencers Building Customer Satisfaction Attracting and Retaining Customers- Analyzing Consumer Markets, Buying Behaviour Buying, Decision Process, Stages in The Marketing Strategies,Marketing Segmentation-Levelsand Patterns of Marketing Segmentations

Unit V:

Influences on Consumer Behaviour Environmental Influences:Culture Subculture Class Social Groups Family Personal Influences And Diffusionof Innovations Individual Determinants of Consumer Behaviour, Personalityand Self-Concept Motivation And Involvement Information Processing Learning And Memory Attitudes**.**

REFERENCES:

Kotler,P.(2003),Marketing Management,(Eleventh Edition).

Mamoria, C.B. and Joshi, R.L.(1998), Marketing Management, Analysis, Planning Implementation And Control, (Ninth Edition) Prentice Hill.

Loudon, D.L. and Della Bitta, A.J.(2002) Consumer Behaviour(Fourth Edition)Tata McGraw Hill. 4. Advertising Management, Aaker &Myers, Batra

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of marketing management and strategies.

2. Analyze the need and development of new product

3. Recommend appropriate measures to study influences on consumer behaviour and enhance marketing.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	2		1			1	1	1	
2			2	2	1		1	1		
3	1	1	2			1		1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of marketing management and strategies
CO2	Analyze the need and development of new product
CO3	Recommend appropriate measures to study influences on consumer behaviour and enhance marketing.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPY18DSE06 - PSYCHOLOGY OF INTERPERSONAL RELATIONSHIP

Unit I: Concept and Types of Interpersonal Relationship: Interaction: the essence of a relationship – Theories of Social Interaction, Interpersonal Attraction, Transactional Analysis-types of relationship. ‘

Unit II: Romantic and Marital Relationship: Taxonomies of love- Psychometric approaches to love theories of Love- passionate and companionate Love- theoretical approaches to mating relationships. Nature of marital relationships- distinction from romantic relationships- factors associated with satisfaction- happy and unhappy marriages- distress in marital relationships, therapeutic interventions for distressed paths to divorce and separation- bereavement.

Unit III: Relationship at Work: Nature, purpose and importance of human relations at work-forces influencing behavior at work- development of human relations movement- team work and team building- social loafing- leader-follower, formal and informal relationship at work.

Unit IV: Interpersonal Communication: Basic nature and forms of communication- verbal and nonverbal communication- communication channels, process and barriers- communication through body language- improving personal communication.

Unit V: Conflicts in Relationship and Strategies for Improving Human Relationship: Self disclosure: JOHARI window- SWOT Analysis- barriers to self disclosure- improving self perception- positive strokes and relationship building. Prosocial behavior- factors involved in co- operation- selfishness and altruism- Conflict: nature and major causes of conflict in relationships- individual level conflictgroup conflict- conflict management techniques.

References

1. Berscheid, E., & Regan (2005). The Psychology of Interpersonal Relationships. Englewood Cliffs, NJ: Prentice Hall

2. Reece & Brandt (2007). Effective Human Relations. Personal and Organizational Applications. 10th Edition. New York. Houghton Mifflin Company.

3. Duck (2007). Human Relationships. 4th Edition. Thousand Oaks, CA: Sage Publications.

4. Hendrick & Hendrick (Eds) (20000). Close Relationships: A Sourcebook 2nd ed. London: Sage Publications.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of theories and practice in verbal and nonverbal communication with a focus on interpersonal relationships.

2. Critically evaluate the underlying assumptions of analysis tools of communication to express feelings, to imagine, to influence, and to meet social expectations.

3.To develop ability of competent communication in interpersonal interactions, understand how and why relationships develop, to practice effective conflict management techniques.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1			1			
2		1		2	1		1	1		
3	1		2	2	1		1	1	2	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of theories and practice in verbal and nonverbal communication with a focus on interpersonal relationships
CO2	Critically evaluate the underlying assumptions of analysis tools of communication to express feelings, to imagine, to influence, and to meet social expectations.
CO3	To develop ability of competent communication in interpersonal interactions, understand how and why relationships develop, to practice effective conflict management techniques

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3	**1**	

PPY18DSE07: COPING WITH STRESS

UNIT 1: Learning about sources of stress and its symptoms: Nature of stress- various sources of stress environmental, social, physiological and psychological; Symptoms of stress - emotional response, physiological & behavioural response.

UNIT 2: Coping --- (a) Concept of coping: Definition and Classification. (b) Measurement of coping behaviour.

UNIT 3: Life Style and Related aspects---- (a) Stress and Personality. (b) Life Style and Health : Cardiovascular disease, Atheroceterosis, cancer. (c) Stress and substance abuse: alcohol and other drugs

UNIT 4: Developing a sense of Humour – Learning to laugh – Using humour at work – Reducing conflicts with humour

UNIT 5: Learning to manage stress effectively: Methods - yoga, meditation, Vipassana, relaxation techniques, clarifying problem, alternate actions, support (Problem focused) emotion focused constructive approach

Readings: Weiten, W. & Lloyd, M.A (2007). Psychology applied to Modern life. Thomson Detmar Learning .

Suggested Readings:

Barrett.J.E. (1979) ---Stress and Mental Disorder, American Psychopathological Association Series,New York : Rayan Press, Section A-6.

Braumsteirn, J.J. and Toister, R.P (1981)----- Medical Applications of Behaviour Science chicago:Year Books Medical publishers Inc. Section A. I:

Dohrenwend B.S. and Dohrenwend, B.P. (1974) --- Stress life events : their nature and effect, Newyork, Johan willy and sons.

Goldberger, L. and Breznitz,S. (1982) ---- Handbook of stress : theoretical and clinical as pact

Harzars, R.S. and Talkman, S. (1984) ---- Stress, Appraisal and coping, Newyork: Springer.

Selye. H.(1980) ------Selyes guide to stress research vol. I, Newyork : Van Nostrand Reinhold. ADACP -

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Acquire an in-depth knowledge of coping process and its effect on emotional mental and behavioural aspects of an individual.
2. Develop mechanisms to cope with stress and attempt to overcome or diminish the amount of stress experienced.
3. Using research in finding conventional methods to focus on the stressor itself, using evidence-based approaches to either removing or coming to terms with the stressful situation.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	2	1			1	1	1	
2		1	1	1			1	1	1	
3		1	2	1		1	1	2	1	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Acquire an in-depth knowledge of coping process and its effect on emotional mental and behavioural aspects of an individual.
CO2	Develop mechanisms to cope with stress and attempt to overcome or diminish the amount of stress experienced
CO3	Using research in finding conventional methods to focus on the stressor itself, using evidence-based approaches to either removing or coming to terms with the stressful situation.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPY18DSE08 - POSTIVE PSYCHOLOGY

Unit I: Positive Psychology : Introduction, Importance of Positive Emotions, Emotions and Motivation, The Evolutionary Need, Biology of Positive Emotions and Pleasure, Emotional Intelligence, Moods and Psychological Well-Being,

Unit II: Positive Emotional States: Subjective well being-, The science of happiness and life satisfaction, Resilience in Development, Concept of flow, Positive affectivity, Social construction of self-esteem -Optimal Experience and Peak Performance,

Unit III: Health and Wellness : Interpersonal relationship - Enhancement of closeness, compassion, forgiveness and gratitude, love, empathy and altruism. Wellness, Health Psychology, and Positive Coping -.**:** Role of personal control in Adaptive functioning Optimism, Hope, Self efficacy, goal-setting for life and happiness

Unit IV: Positive Traits :, Excellence, Aesthetics, Creativity, and Genius, The Pursuit of Excellence, The Foundations of Excellence, The Creative Person, Process, Environments,. Interventions for Enhanced Well-Being, Dimensions of Positive Mental Health - Positive Psychology Interventions, Positive Psychotherapy, Positive Psychology in Educational Settings.

Unit V: Religion and Spirituality and Future : Religion, Spirituality, and Well-Being, Religiosity and Health, Cognitive-Developmental Perspectives on Faith, Psychodynamic Perspectives on Religion, Work, Community, Culture, and Well-Being, Future Applications of Positive Psychology.

Reference:

1. *C.Synder and Shane, J.Lopez, (2007), Positive Psychology The Scientific and Positive Explorations of Human Strengths, Sage Publications, Haryana.*
2. *Shane. J. Lopez, The Handbook of Positive Psychology,Newyork: Oxford University Pres*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understanding of the aim and scope of positive psychology and implications to well-being

2. Critically evaluate the underlying assumptions of the science and application of positive psychology to biological, psychological, social and emotional outcomes

3. Apply core concepts of positive psychology and resiliency factors into their own lives and professional practice

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1		1		
2		1	2	1		2		1	1	
3	1		2	1	1		1	1	2	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understanding of the aim and scope of positive psychology and implications to well-being
CO2	Critically evaluate the underlying assumptions of the science and application of positive psychology to biological, psychological, social and emotional outcomes
CO3	Apply core concepts of positive psychology and resiliency factors into their own lives and professional practice

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3		**1**

M.SC. SPORTS PSYCHOLOGY

PROGRAM EDUCATIONAL OBJECTIVES

PEO-1	To produce students with effective interpersonal skills and psycho-social skills to help athletes to excel in sports profession
PEO-2	To enable the student to articulate the skill sets desired by employers who hire or select people who demonstrate the knowledge of Psychology in sports

PROGRAM OUTCOME

The student will be able to:

PO1 Demonstrate fundamental knowledge and comprehension of the major concepts, theoretical perspectives, and empirical findings to discuss how psychological principles apply to behavioural problems

PO2 Understand the application of psychological theories in sports.

PO3 Identify methods that can help teams improve their dynamics, boost their performance, recover from injuries, and overcome emotional obstacles caused by competition.

. **PO4** Articulate an approach to work effectively with diverse individual and groups by demonstrating the psychological skills and techniques to enhance sports performance

PO5 Demonstrate professional ethics and commitment in all aspects of professional practice.

PO6 Carry out researches on various domains of psychology in relation to sports.

PO7 Develop critical thinking and applies strategy on solving emotional and social problems in sports situations.

PO8 Plan to communicateto formulate effective arguments for report writing/presentation.

PO9 Relate to society by contributing by community engagement and justify to be a responsible global citizen

PO10: Focus on the professional realities of working as a sports psychologist.

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PE0-1				X	X		X	X	X	X
PEO-2	X	X	X	X	X	X	X	X	X	X

PROGRAM SPECIFIC OUTCOME - SPORTS PSYCHOLOGY

PSO-I	Graduates will be able to analyse, articulate with sound psychological skills and techniques, enabling the athletes to work effectively for enhanced sports performance.
PSO-2	Graduates will be able to create positive changes by empowered and diversified approaches towards the promotion of health and wellness.

FIRST SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PSP18CT101	Advanced General Psychology	4	0	0	4
PSP18CT102	Principles of Sports Psychology	4	0	0	4
PSP18CT103	Research Methodology	4	0	0	4
PSP18CP104	Psychological Testing I	0	0	10	5
	DSE - Elective I	4	0	0	4
	Communication Skills (AEC I)	2	0	0	2
Total					**23**
SECOND SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PSP18CT201	Psychological aspects of Sports Performance	4	0	0	4
PSP18CT202	Biological Basis of Behaviour	4	0	0	4
PSP18CT203	Behavioural statistics	4	0	0	4
PSP18CP204	Psychological Testing & Assessment – II	0	0	10	5
	DSE - Elective II	4	0	0	4
	Fundamentals of Information and Technology (SEC)	2	0	0	2
	NSS / Community Engagement - Co curricular	0	0	0	2
Total					**25**

THIRD SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PSP18CT301	Fundamentals of Counseling Skills	4	0	0	4
PSP18CT302	Psychology of Athletic Injury and Rehabilitation	4	0	0	4
PSP18CT303	Psychological Preparation and Mental Skills training	4	0	0	4
	Case Studies & Project Work	0	0	0	4
	DSE - Elective III	4	0	0	4
	Generic Elective I	4	0	0	4
	Life Skills Management (AEC II)	2	0	0	2
	Village Placement Program – Co curricular	0	0	0	2
	Total				**28**
FOURTH SEMESTER					
Paper Code	**Paper Title**	**L**	**T**	**P**	**Credits**
PSP18CT401	Counselling and Behaviour Modification Techniques in Sports	4	0	0	4
PSP18CT402	Sports for the challenged	4	0	0	4
PSP18CT403	Athletic Psychopathology	4	0	0	4
PSP18CT404	Thesis	0	0	0	6
	DSE - Elective IV	4	0	0	4
	Generic Elective II	4	0	0	4
Total					**26**

FIRST SEMESTER

PSP18CT101: ADVANCED GENERAL PSYCHOLOGY

UNIT I

Introduction: Definition and Goals of Psychology: Approaches: Biological, Psychodynamic, Behaviorist, Cognitive, and Humanistic. Methods of Psychology: Experiment, Observation, Interview, Questionnaire and Case study. Fields and Scope of Psychology.

UNIT II:

The sensory and Perceptual process: Some general characteristics of Five Senses – Perception: Determinants of Perception: Form, Space and Depth – Attention: determinants of attention. Motivation: Physiological Basis of Motivation, Theories of Motivation – Emotions : Facial Expressions – Theories of Emotions.

UNIT III:

Learning, Memory and Forgetting: Learning: principles and methods – classical conditioning – operant conditioning – the principle for reinforcement – cognitive learning- Transfer of learning – reward and punishment in the control of learning. Memory and forgetting: Memory – Stages of Memory – Types of memory – Improving Memory – Forgetting: Theories of Forgetting, Kinds of Forgetting.

UNIT IV:

Intelligence, Thinking and Problem Solving: Definition, Theories of Intelligence, Measurement of Intelligence. Thinking and Reasoning: Concepts, Categories, Schemas and Scripts, Imagery and Cognitive Maps, Creative Thinking – Concepts, Problem Solving Approaches: Solution Strategies and Mental Sets.

UNIT V:

Personality: Definition, Trait and Type Approaches: Biological and Socio-Cultural Determinants, Techniques of Assessment: Psychometric and Projective tests.

REFERENCES:

Henry Glietman,James Gross, Danial Reisberg (2011) – Psychology, 8th Edition, Norton and Company, ISBN: 978-0-393-93250-8

Ronald Comer, Nancy Ogden, Adrian Furnham(2013) Psychology – IISBN: 978-1-119-94126-2

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Apply conceptual knowledge of the core areas of Psychology (cognitive, sensory, perceptual, learning, motivation and personality) and the links between them

2. Examine the knowledge related to the approaches used in the field of psychology to understand human behaviour and mental process.

3. Will be able to relate behavioural issues through theoretical approaches and methods ethically by contributing to society as a responsible citizen

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1	1			2	1		
2	1	1		2	1		1		1	1
3		1	1	1	2		2	2	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Apply conceptual knowledge of the core areas of Psychology (cognitive, sensory, perceptual, learning, motivation and personality) and the links between them
CO2	Examine the knowledge related to the approaches used in the field of psychology to understand human behaviour and mental process.
CO3	Will be able to relate behavioural issues through theoretical approaches and methods ethically by contributing to society as a responsible citizen

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2		**1**
CO3		**1**

PSP18CT102: PRINCIPLES OF SPORTS PSYCHOLOGY

UNIT I

Introduction to Sport Psychology: Meaning and scope, Importance, relationship with other sport sciences, development of sport psychology in India and worldwide.- sports psychology for physical educators, coaches and athletes – ethics in sports psychology.

UNIT-II

Cognition – characteristics and cognitive process in sports – sensation and perception – Attention - strategies to develop attention – Reaction Time, Movement Time, Reflex time, Response Time - Flow – Experience of Flow- Dimension of flow – Flow in Sport – Measuring Flow.

UNIT III

Emotions – concepts - Influence of emotions on performance - Motivation in Sport: definition, (drive, need and motives, instinct, attitude, achievement motivation,) Techniques of motivating the Athletes . .

UNIT IV

Personality in Sport: Concept and definition, Modern perspective, (trait, humanistic, social cognitive and biological)**,** Dynamics of personality in sport – Sports and Personality.

UNIT-V

Psychological Preparation and Competition: Phenomenon of competitive sport, long term Psychological preparation for competition (arousal regulation, imagery, self-confidence, goal setting, concentration.), short term psychological preparation (upcoming competition) .

REFERENCES:

Robert C. Eklund, Gershon Tenenbaum (2014) Encepclopedia of Sports & Exercise Psychology, Sage Publications, Los Angles.

Weinberg RS and Gould D (2003). Foundations of Sport and Exercise Psychology. Human Kinetics. US

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Apply psychology-specific content and skills, effective self-reflection, self-management skills, teamwork skills, frame goals, and enhance performance, socio cultural influences and game preparation.
2. Gain knowledge about psychometrics, cognition, motivation, personality and emotion and their influence in a game.
3. Apply psychological concepts and skills required in competitive sport participation.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2			1			1	2		
2		1		2			1	1		
3	1	2	2				2	2	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Apply psychology-specific content and skills, effective self-reflection, se management skills, teamwork skills, frame goals, and enhance performanc socio cultural influences and game preparation.
CO2	Gain knowledge about psychometrics, cognition, motivation, personality and emotion and their influence in a game.
CO3	Apply psychological concepts and skills required in competitive sport participation

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSP18CT103: RESEARCH METHODOLOGY

UNIT I

Definition of research – meaning need, importance and scope of research in sports psychology - Classification of research : Basic research, Action research, Applied research. Ethics in research. Recent Research trends in Sports Psychology .

UNIT II

Descriptive research methods – need and importance of survey Study, case study, interview technique, Historical and philosophical research, observation, construction and standardization of Questionnaire.

UNIT III

Research Design: Definition, Types of Research Design: Experimental design – Single group design – Reverse group design – Repeated measures design – Static group design – Factorial design – fixing the level of Significance and degrees of freedom for a research problem

UNIT IV

Sampling: definition, sampling planning – components – sample methods – probability and non – probability methods – sampling distribution – determining sample size – sampling error.

UNIT V

Contents in the research report: Introduction – Hypothesis – Delimitation – Limitation - Review of related literature – Summary – Conclusion – Recommendations. Research format: Style of writing research report. Mechanism of writing Research Proposal - Abstract – Synopsis – References – Appendixes – Contents – Tables – figures – preliminary – end pages.

REFERENCES:

1. Clarke David. H and Clarke H. Harrison (1984) **Research process in Physical Education**, New Jersey: Prentice Hall Inc.
2. Best, John W. and Kalm James, V. (1980) **Research in Education**, New Delhi: Prentice Hall of India.
3. Kothari C.R. (1985) **Research Methodology** 2nd revised ed., New Age International, Publisher; New Delhi.

COURSE OUTCOMES

At the end of the course, the student will be able to:

. 1. Illustrate basic and applied research to address issues in psychology.

2. Understand and apply basic research methods in psychology, including research design, data analysis, and interpretation
3. Examine the importance of the use of statistical analyses and reporting of results in research publications.

MAPPING OF POs WITH COs

COURSE OBJECTIVES	PROGRAM OBJECTIVES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1		2	2		2		
2		2		2		2		1		
3	1	1			2	2		1	1	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Illustrate basic and applied research to address issues in psychology
CO2	Understand and apply basic research methods in psychology and sociology, including research design, data analysis, and interpretation
CO3	Examine the importance of the use of statistical analyses and reporting of results in research publications

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSP18CP105: PSYCHOLOGICAL TESTING AND ASSESSMENT-I

Students are required to conduct and record any 08 experiments.

1. Competitive State Anxiety
2. Psychological Performance
3. Locus of Control –Internal/External
4. Life Skills
5. Mental Imagery
6. Extrinsic/Intrinsic Motivation
7. Bio-feedback
8. Concentration
9. Sports Specific Personality Inventory
10. Sports Achievement Motivation
11. Reaction Time
12.

REFERENCES:

1. Woodworth, R.S. and Scholsberg (1972), Experimental psychology. Holt, Rinehart & Winston.
2. Anastasi & Susana Urbina (2004) 7th Edition, Psychological Testing, Pearson Education Inc, New Delhi..
3. Parameseswaran& Ravichandran. (2003). Experimental psychology. Neel Kamal Publications.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically access the information by administering the psychometric assessments to study human behaviour and mental processes.

2. Administers psychometric tools and interprets the evaluation for framing the strategy to improve the sports performance and mental health of the athlete

3. Understand the ethical values of interpretation of the assessment tools.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2			1			2	1		
2		2		1			2	2	1	2
3	1		1		2				2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Critically access the information by administering the psychometric assessmer to study human behaviour and mental processes.
CO2	Administers psychometric tools and interprets the evaluation for framing t strategy to improve the sports performance and mental health of the athlete
CO3	Understand the ethical values of interpretation of the assessment tools.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

SECOND SEMESTER

PSP18CT201: PSYCHOLOGICAL ASPECTS OF SPORTS PERFORMANCE

UNIT I

Bases of Psychological Preparation: Positive Attitude, Calmness, Self Confidence, Fighting spirit – Adapting to competitive situation, situational control , controlling the athletes state before competition - Overtraining, Physiological and Psychological Impact of Overtraining.

UNIT II

Cognition: Thinking- Strategic Thinking, Attention-Dimensions of Attention, Role of attention in Individual and Team Sports, Ways to improve attention and concentration skills, Discussion: Direct and Indirect Suggestions

UNIT III

Motivation: Motivation of children and Youth in sports - Extrinsic and Intrinsic Motivation in Sports – Perceived competence - Achievement Motivation and Competitiveness, Theories of Achievement Motivation

UNIT IV

Psychological Preparation of Training and Competition: Competition in sports – types of competition - Determinants of Competitive Behavior –Characteristics of pre-competition , competition and post competition -

UNIT V

Personality: Personality and Psychological characteristics of Athletes – Personality traits and sports - Mood states and athletic performance – Iceberg Profile – Mental Health and Sports.

REFERENCES:

1. Gangopadhyay, S.R. (2008) – Sports Psychology, Sports Publications, New Delhi.

2. Burton, D, Thomas D. (2008) – Sport Psychology for Coaches, Human Kinetics Publishers, UK.

3. GurbakhshS.Sandhu (2002) - Psychology in Sports – A Contemporary Approach' friends publications, New Delhi

4.Martens, R. (1987) – Coaches Guide to Sport Psychology, Human Kinetics Publishers, Champaign, Illinois

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Define the basics of physiological principles relevant to the effect of exercise on human functioning and performance.

2. Analyze the different psychological factors influencing individual growth and development through life time.

3. Recommend sport as a tool to enhance health and use games and physical activities to enhance individual competencies.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	1		1			1	1		
2		1	1	2	1		1	1		
3	1		2			2		1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Define the basics of physiological principles relevant to the effect of exercise on human functioning and performance and examine the relation to sports with respect to socio cultural influences in a society.
CO2	Analyze the different psychological factors influencing individual growth and development through life time
CO3	Recommend sport as a community building activity, use games and physical activities to enhance individual competencies

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3		**1**

PSP18CT202: BIOLOGICAL BASES OF BEHAVIOR

UNIT I

Introduction: The origins of biopsychology, Nature of biological psychology – Mind Brain Relationship , Methods of study of research in biopsychology – anatomical methods, degeneration techniques, lesion techniques, chemical methods, stereotaxic surgery, micro-electrode studies, oscilloscope, polygraph, scanning methods and ethical issues in research.

UNIT II

Neurons: Neurons and Neuronal conduction – Structure of neurons, types, functions, neural conduction, communication between nurons, synaptic conduction , neurotransmitters.

UNIT III

Nervous System : The structure and functioning of the Nervous system- Basic features of Nervous System, Meninges, Ventricular System, Cerebrospinal fluid, Blood brain barrier, Peripheral Nervous System, Cranial Nerves, Spinal Nerves, Autonomic Nervous System: Major structures and functions, Spinal Cord. Brain: Forebrain, Mid brain, Hind brain, Cerebral cortex, temporal, Parietal and occipital lobes; prefrontal cortex.

UNIT IV

Bio-Psychology of Cognitive Functions Learning : Neurophysiology of learning, Synaptic plasticity; Memory, Neurological basis of Memory, Brain damage and dysfunction of memory. Language: Lateralisation, Evolution and Neurophysiology of Speech. Disorders of Reading, Writing : Aphasia , Alexia and Dyslexia.

UNIT V

Bio-Psychology of Arousal Physiological correlations of Arousal: Consciousness and Sleep, factors affecting Consciousness, Sleep: Rhythms of sleeping and waking , neural basis of biological clocks , stages of sleep, brain mechanisms of REM sleep and dreaming-Physiological mechanisms of Sleep and Waking, Disorders of Sleep.

Essential Reading:

Carlson, N.R. (2004) Physiology of Behavior (8th Edition), Boston: Alwyn and Bacon

Kalat, J.W (2004) Biological Psychology (8th edition) Belmont: Wadsworth/Thomson Learning.

REFERENCES:

1. Wagner, H. & Silber, K (2004) Physiological Psychology, Garland Science ,Abingdon : UK
2. Rosenweig, M R Leiman, AL & Breedlove, SM (1999) Biological Psychology: An introduction to behavioral, Cognitive, Clinical neuroscience (2nd edition) USA; Sinauer Associates, Inc
3. Wallace, B & Fisher, L.E. (1991) Consciousness and Behavior (3rd Edition) USA, Allyn & Bacon.
4. Pinel, J P J (2000) Biopsychology (4th Ed.) Boston: Allyn & Bacon
5. Kandel E R. Schwartz, J H &Jessel, T.M. (2000) Principles of neural science (4thedn.) New York, McGraw-Hill.
6. Leukel , F (1985) Introduction to physiological psychology (3rd. ed) New Delhi, CPS Publishers.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of biopsychology; examine the relationship between sports with respect to individual physiology.

2. Analyze factors that influence on individual health and employ ways and means to optimise the same

3. Relate the role of the brain in human performance and apply psychological techniques and theories to human performance within diverse population.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1			1	2		
2		1		2			1	1		
3	1	2	2				2	2	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of biopsychology; examine the relation to sports with respect to individual physiology.
CO2	Analyze factors that influence on individual health and employ ways and means to optimise the same
CO3	Relate the role of the brain in human performance and apply psychological techniques and theories to human performance within diverse population.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PSP18CT203: BEHAVIORAL STATISTICS

UNIT I

Introduction to statistics types, classification and basic concepts of statistics – Measures of central tendency – Mean, Median and Mode – Measures of variability: Range, Mean deviation Quartile Deviation and standard deviation.

UNIT II

Introduction to Normal distribution – Normal curve – Characteristics of Normal Curve – Standard Normal Curve - Problems Based on Normal distribution – Uses of Normal distribution.

UNIT III

Testing of Hypothesis: Hypothesis – Type I & II error – Acceptance and critical Region – Test of significance of a single Mean – Difference between two means for small and large sample tests – paired t – test for difference of mean.

UNIT IV

UNIT IV Single Sample t-test, t-test distribution – Paired sample t-test, Indpendent sample t-test, - Between Group ANOVA – Within Group ANOVA – Two way between groups ANOVA.

UNIT V

Pearson product moment correlation – Rank order correlation – Partial and Multiple correlation – Chi square – Test for Independence – contingency coefficient.

REFERENCES:

1. Clarke, H. Harrison and Clarke David H. (1972) **Advanced Statistics**, New Jersey: Prentice Hall Inc.

2. Garret Henny E and Woodworth, R.S (1958) **Statistics in Psychology and Education**, Bombay: Allied publication Pvt.Ltd.

3. Thirumalaisamy R (1998) **Statistics in Physical Education**, Karaikudi: Senthilkumar publishers.

4. Thomson AL. (1986) **The Art of Using Computers**, Boyd &Frasher Boston: publishing co.

5. Paul R Kinnear and Collin D Gray (2006) –**SPSS 14 Made Simple**, New York:

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of organize, manage, present data, describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis

2. Critically evaluate the underlying assumptions of analysis tools and discuss the issues surrounding sampling and significance

3.To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevantin their research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1		

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of organize, manage, present data, describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis
CO2	Critically evaluate the underlying assumptions of analysis tools and discuss th issues surrounding sampling and significance
CO3	To develop the students' ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSP18CP204– PSYCHOLOGICAL TESTING AND ASSESSMENT - II

Students are required to conduct and record any 08 experiments.

1. Sports Aggression
2. Team Cohesion
3. Mental Toughness
4. Mindfulness
5. Sports Motivation
6. Depression Anxiety and Stress
7. Flow State
8. Performance Failure Appraisal
9. Sentence Completion Test
10. Athletic Coping Skills
11. Eye Hand Coordination

REFERENCES:

1. Woodworth, R.S. and Scholsberg (1972), Experimental psychology. Holt, Rinehart & Winston.
2. Anastasi & Susana Urbina (2004) 7th Edition, Psychological Testing, Pearson Education Inc, New Delhi..
3. Parameseswaran& Ravichandran. (2003). Experimental psychology. Neel Kamal Publications.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically assess the information by administering the psychometric assessments to study human behaviour and mental processes and also forms conclusions and arguments

2. Administers psychometric tools and interprets the evaluation for framing the strategy to improve the sports performance and mental health of the athlete

3. To develop theability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1		

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of organize, manage, present data, describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis
CO2	Critically evaluate the underlying assumptions of analysis tools and discuss the issues surrounding sampling and significance
CO3	To develop the students' ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

THIRD SEMESTER

PSP18CT301: FUNDAMENTALS OF COUNSELING SKILLS

UNIT I

Introduction: Definition – Development and goals- History and Current trends in counseling – Counselor – the nature of counselor's work - counselee relationship - counseling process: Steps – purposes of counseling - scope of counseling – characteristics of effective counseling

UNIT II

Approaches to Counseling: Directive, Non-directive, Psychoanalytic, Humanistic, Reciprocal inhibition technique, Eclectic approach - Basic Counseling Theories – Psychoanalytic theory, Adlerian theory, Existential theory, person centered theory, gestalt theory- Counselling in India - legal and ethical issues: ethical issues – ethical dilemmas – legal concerns of counselor.

UNIT III

Special areas: Family counseling, students counseling, parental counseling, educational, vocational and career counseling - Counseling Interview: Communication, verbal, nonverbal, interview, techniques of interview, relationship technique, problem identification and exploration, sharing, transference, counter transference. - Counseling the special population - global counseling and trauma counseling

UNIT IV

Professional Preparation & Training**:** Selection, skills, counseling as a profession, desirable characteristics - Modern Trends: Career guidance, Functions of counselor, stages of counseling - Techniques: Egan's Model, Interviews, testing-– Mastering the techniques of counseling :

UNIT V

Group Counseling **–** Definitions — values of group Counseling - Group therapy – Training & Sensitivity groups – Group process and group dynamics - Group Counseling and Group therapy; Group vs. Individual Counseling; Types of groups - Issues in Group Counseling.

REFERENCE:

1. Lewis E. Patterson and Elizabeth Reynolds Welfel (2000). The Counselling Process, 5th

edition, Wasworth Brooks / Cole, Thomson Learning.

2. S. Narayana Rao (1981) Counselling Psychology, Tata McGraw Hill Publisher.
3. Brammer. L.M. and Shostrom E.L. (1977) Therapeutic Psychology, Englewood Cliffs, New Jersey.
4. Feltham. C & Horton. I (2000) Handbook of Counselling and Psychotherapy, London : Sage Publication.
5. Nelson - Jones, R. (1995). The Theory and Practice of Counselling, 2nd Edition, London : Cassell.
6. Covey, G. (2008). Theory and Practice of Counselling and Psychotherapy (8th ed.)

Canada: Brookes/Cole.

7. Covey, G. (2008). Student manual for Theory and Practice of Counselling and

Psychotherapy (8th ed.). CA: Brooks/Cole.

8. Burl E. Gilland& Richard K. James (1998). Theories and Strategies in Counselling and

Psychotherapy. Singapore: Allyn and Bacon.

9. James O. Prochaska & John C. Norcross. (2007). Systems of Psychotherapy: A trans

theoretical analysis (6th ed.). Thomson-Brooks/Cole.

10. Palmer, S. (ed.). (1999). Introduction to counselling and psychotherapy: The essential

guide. New Delhi: Sage.

11. Simon, L. (2000). Psychotherapy: Theory, practice, modern and post modern influences.

Westport, Connecticut: Praeger.

12. Sharf, R.S.(2000). Theories of psychotherapy and counselling: Concepts and cases (2nd

ed.).Singapore: Brooks/Cole.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of psychological principles; professional and ethical practice in the role of counsellor in various settings.

2. Develop knowledge on career assessments related to interests, personality, values, and career development.

3. Describe the role that human growth and development in counselling interventions and gain ability for appropriate modification made in a multicultural society.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1	2	1		1	2		
2		1		2	1	1	1	1		
3	1	2	2		1	1	2	1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of psychological principles; professional and ethical practice in the role of counsellor in various settings.
CO2	Develop knowledge on career assessments related to interests, personality, values, and career development.
CO3	Describe the role that human growth and development in counselling interventions and to appropriate modification made in a multicultural society.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PSP18CT302: PSYCHOLOGY OF ATHLETIC INJURY AND REHABILITATION

Unit I :

Injury – Concepts - causes of Injury – common sports injuries - factors contributing to injury in sports – psychological susceptibility to Injury - Rehabilitation – definition- types of rehabilitation – rehabilitation for athletes .

Unit II:

Psychological antecedents to Sports Injury – Stress and Injury model , Stress Response – Antecedents of Sports injury – Personality, Anxiety, Locus of Control, Mental and Emotional states – Stress History –Major life events, daily hassles, Prior injury history – Role of Psychological Interventions.

Unit III :

Models relating to Psychological responses to injury – Grief response models – Cognitive appraisal models – The integrated model of psychological response to sports injuries and rehabilitation process - A biopsychosocial model of sport injury rehabilitation.

Unit IV:

Burn out and Sports Injuries – Psychological issues of Injuries and sports –Psychological aspects of pain, Pain measurement and pain mediation - Psychological implications of long term rehabilitation for athletes

Unit V:

Psychological interventions in sports injury , Injury and Healing Process including Injury Management, recovery visualizations for sports , positive self talk, rational emotive therapy, goal setting relaxation and mindfulness.

REFERENCES:

Robert C. Eklundy and Gershan Tenenbaum(2014)-Enceclopediaof Sport and Exercise Psychology, Sage Publications

Monna Arvinen-Barrow and Natalie Walker (2013) – The Psychology of Sports Injury and Rehabilitation, Routledge

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the types of injuries and the fundamental components involved in designing a successful rehabilitation program
2. Analyze the influence of different parameters of performance, physiological, biochemical and subjective measures such as mood disturbance, perceived stress and recovery and symptoms of athlete rehabilitation monitoring and recovery process

3. Recommend adequate examination methods for muscle and skeleton injuries related to physical exercise and sports to reduce instances of reinjury

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1			1	2		
2		1		2	1		1			
3	1	2	2			2	2		1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the types of injuries and the fundamental components involved in designing a successful rehabilitation program
CO2	Analyze the influence of different parameters of performance, physiological, biochemical and subjective measures such as mood disturbance, perceived stress and recovery and symptoms of athlete rehabilitation monitoring and recovery process
CO3	Recommend adequate examination methods for muscle and skeleton injuries related to physical exercise and sports to reduce instances of reinjury

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSP18CT303: PSYCHOLOGICAL PREPARATION AND MENTAL SKILLS TRAINING

UNIT I

Mental Toughness – A social Cognitive Personality construct : Mental Toughness is multidimensional, aspects of MT are inherited, aspects of MT are learned- Pillars of Mental Toughness : Motivation, Self-Confidence, Coping with Pressures.

UNIT II:

Stress in Sports – Anxiety Management Training – Applied Relaxation, Arousal Energising Techniques, Breath Control and Deep Breathing, Cognitive Affection, Stress Management Training, Cognitive Control, Hypnosis, Meditation, Performance and Competition Planning , Self -Compassion , Stress Inoculation Training.

UNIT III

Relaxation: Physical Relaxation: Breathing Exercises, Progressive Muscle Relaxation, Biofeedback – Mental Relaxation Strategies: Transcendal Meditation, Mindfulness Meditation and Autogenic Training.

Unit IV:

Energizing (Activation) Strategies: Arousal and Activation, Visualization and Self Talk strategies, Mental Imagery and Visualization – Arousal and Performance relationship.

UNIT V:

Coping in Sports: Classifying coping in Sport; Problem and emotion focused coping, Avoidance Coping Task, Distraction and Disengagement oriented Coping – Coping Effectiveness and Coping Self Efficacy. Psychological Skills Training (PST) Definition, Importance of PST, Myths about PST,

REFERENCES:

Robert C. Eklundy and Gershan Tenenbaum(2014)-Enceclopediaof Sport and Exercise Psychology, Sage Publications

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics and apply psychological techniques and strategies to enhance sports performance and participation in sport and exercise settings.
2. Analyze the influences of social aspects (e.g., group processes, persuasion) on performance and well-beings faced by sports persons.

3. Recommend strategies to cope with the mental stress and coping skills influence sports performance, with a commitment to social justice and intellectual diversity in the society and the influence on sports on public health

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1			1	2		
2		1		2	1	1	1	1		
3		2	2	1			2	1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics and apply psychological techniques and strategies to enhance sports performance and participation in sport and exercise settings.
CO2	Analyze the influences of social aspects (e.g., group processes, persuasion) on performance and well-beings faced by sports persons.
CO3	Recommend strategies to cope with the mental stress and coping skills influence sports performance, with a commitment to social justice and intellectual diversity in the society and the influence on sports on public healt

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PPS18CP304: CASE STUDY AND PROJECT WORK

Students are required to submit a PROJECT at the end of the year. The Project shall embody the record of original investigation under the guidance of a supervisor.

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COURSE OUTCOMES

At the end of the course, the student will be able to:

1 - Identify key research questions within the demographic field on which the student will carry out independent research.

2 - Demonstrate appropriate referencing and develop skills in other aspects of academic writing.

3 - Apply the demographic/statistical research training acquired in the taught element of the programme by designing an appropriate research strategy and research methodology to carry out research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	1			3	2	2			2
2		1			2	2	1		1	1
3			1		3	1	1		1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Identify key research questions within the demographic field on which the student will carry out independent research.
CO2	Demonstrate appropriate referencing and develop skills in other aspects of academic writing.
CO3	Apply the demographic/statistical research training acquired in the taught element of the programme by designing an appropriate research strategy and research methodology to carry out research

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSO18AEC02 – LIFE SKILLS MANAGEMENT (AEC II)

Unit I:

Introduction: Soft Skills - Concepts and Definition- Need and importance of Soft Skills – Developing Soft Skills – Implications on Youth Development .

Unit II:

BehavioralSkills : Attitude, Lateral Thinking , Emotional Intelligence, Leadership, Team Building and Interpersonal Skills.

Unit III

Social Skills and Negotiation Skills: Self Awareness and Empathy , Influencing, - Effective Communication –Oral Presentation Skills – Interviewing – Delegating.

Unit IV:

Thinking Skills: Critical Thinking and Creative Thinking – Problem Solving and Decision Making skills.

Unit V:

Coping Skills : Coping with stress and Emotions – Conflict Resolution – Negotiating - Time and Stress Management Skills.

REFERENCES:

G. Ravindran, S P Benjamin, Elango and R. Arokiam (2007) - Success through Soft Skills, ICT

Kamin M (2013) Soft Skills Revolution: A Guide for Connecting with Compassion for Trainers, Teams, and Leaders. ISBN: 978-1-118-10037-0

COURSE OUTCOMES

At the end of the course, the student will be able to:

- Demonstrate fundamental knowledge and comprehension of the major concepts, to discuss psychological principles to building life skill.
- Develop and exhibit and accurate sense of self, nurture a deep understanding of personal motivation.
- Understand and practice personal and professional responsibility, strengthen personal character and enhance ethical sense

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	2	1			1	2	1	
2	1	2	1	2	1		1	2		
3		2	1	2		1	1	1	1	1

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Demonstrate fundamental knowledge and comprehension of the major concepts, to discuss psychological principles to building life skill.
CO2	Develop and exhibit and accurate sense of self, nurture a deep understanding of personal motivation.
CO3	Understand and practice personal and professional responsibility, strengthen personal character and enhance ethical sense

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3		**1**

FOURTH SEMESTER

PSP18CT401: COUNSELING AND BEHAVIOR MODIFICATION TECHNIQUES IN SPORTS

UNIT I

Basic concepts – Meaning of Counseling –Goals of counselling – counselling process – characteristics of counselor – Group counselling – special areas of counselling - applied areas multicultural counselling – Ethical issues- Psychotherapy – Effectiveness Of Psychotherapy

UNIT II

Approaches to counselling, person centered, Gestalt, Psychoanalytic, Cognitive, Trait factor, Behavioral and eclectic approach - Assessment Techniques - Important Factors – Tools of Assessment- Theories : Psychodynamic – Psychoanalytic and Adlerian Therapy Cognitive and Behavioural therapy: Behavioural Therapy – OCD, Cognitive: Beck's Cognitive Restructuring Therapy

UNIT III

Basic concepts of Behaviour Modification: Behaviour Counselling: Salient Features Enhancement of Client's Involvement – Some Misconceptions about Behavioral Approach. Relaxation Techniques: Jacobson's Deep Muscle Relaxation Training, Autogenic Training, Yoga and Meditation. Application of Behavior Therapy: Anxiety Disorders, Psychoactive substance use disorders, Sexual Disorders

UNIT IV

Assertion Training – Basic Dimensions – Training procedure – Components of Social Skill Training – Uses of social skill training – Precautionary points – systematic desensitization -. Operant Conditioning Techniques – Basic Paradigm – Schedules of Reinforcement – Aversive Conditioning and application – Token Economy – Shaping – Chaining – Other Operant Procedures, Premack's Principle and Prompting.

UNIT V

Cognitive Behaviour Modification – Fundamental Aspects – Cognitive Restructuring – Meichenbaum's Self Instructional training – Beck's Model – Rational Emotive Therapy (Ellis) – Thought Stopping and Variations – Problem Solving Techniques.

REFERENCES:

1. Corey, G (2005), Theory and Practice of Counseling and Psychotherapy, 7th Edition, Scarborough, Brooks/Cole.
2. Martin, G & Pear J (2000) Behavior Modification (7edition), New Delhi, Prentice Hall of India Pvt. Ltd.
3. Wolpe, J (1982), Practice of Behavior Therapy (3rd edition), New York, Oxford Pergamon Press Inc.
4. Nelson-Jones, R. (1994). - The theory of practice of counseling psychology – Cassel London.
5. Rimm, D.C. and Masters, J.C. (1974), - Behaviour Therapy: Techniques and Empirical Findings. New York: John Wiley and Sons.
6. Robert C. Carson. James. N. Butcher and Susan Mincka (1996) - Abnormal Psychology and Modern Life, 10th Edition, New York; Harper Collins College Publishers.
7. Swaminathan V.D. and Kaliappan, K.V. (1997), Psychology for effective living – Behaviour modification, Guidance, Counselling and Yoga, Chennai. The madras Psychology society publication.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1.Understand theories and practices related to human development across the lifespan, goals, principles and ethics involved in counselling

2.Assess and analyse behavioural issues with in day-to-day context and come up effective strategies to resolve conflicts.

3. Recommend techniques and training to enhance mental health, building, maintaining, and utilizing counselling relationships to address mental health issues and meet client goals.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	1	1			1	2		
2		1		2	1	1	1	1		
3	1					1	2	2		

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand theories and practices related to human development across the lifespan, goals, principles and ethics involved in counselling
CO2	Assess and analyse behavioural issues with in day-to-day context and come up effective strategies to resolve
CO3	Recommend techniques and training to enhance mental health , building, maintaining, and utilizing counselling relationships to address mental health issues and meet client goals.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSP18DSE05 - SPORTS FOR THE CHALLENGED

UNIT I

Introduction – Sport in Society – Athletes with Disability - Historical context of Disability and Sports – Emergence and Development of Disability sports – Theories of Disability: Disability as a personal tragedy , Social model of Disability - Sports Current Challenges and Controversies in Disability Sports.

UNIT II

Adapted Sports – Brief history of Adapted Physical Education – Beginning of Adapted Physical Education - Shift to sports and the whole person - Emerging comprehensive sub-discipline – Recent and current status – Role of Physical Educationist in Adapted Sport.

UNIT III

Paralympics Games for people with Intellectual Disability – Coaching and training of athletes with disabilities – Disability Sports Movement - Special Olympics

UNIT IV

Sports activities for individuals with individual needs – Deaflympics, Paraplegic, Cerebral Palsy, Blind, Amputee, Down Syndrome, Autism Spectrum Disorder, Specific Learning Disability , Mentally challenged .

UNIT V

Inclusion and Integration – Equity Issues – Marketing Disability Sports – Future of Disability Sports.

REFERENCES:

John,P Winnick - Adapted Physical Education and Sport , Volume I , Human Kinetics, 2005

Nigel Thomas, Andy Smith – Disability, Sport and Society – An Introduction , Routledge,2008.

Steve Bailey - Athlete First – A history of the Paralympic Movement , John Wiley & Sons.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand limitations and exclusions were imposed on the individual due to impairment

2. Analyze and come up with ways to encourage and promote the participation of persons with disabilities in mainstream sporting activities at all levels

3. Provide opportunities to use sports as a medium to engage in levels of physical activity that will benefit their health and wellness among people with a disability.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	1				1		1		
2				2		1	1	1	2	
3	1	1		2	1		1	1	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand limitations and exclusions were imposed on the individual due to impairment
CO2	Analyze and come up with ways to encourage and promote the participation of persons with disabilities in mainstream sporting activities at all levels
CO3	Provide opportunities to use sports as a medium to engage in levels of physical activity that will benefit their health and wellness among people with a disability.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PSP18CT403- ATHLETIC PSYCHOPATHOLOGY

UNIT I

Definition of Psychopathology – Historical views of abnormal behavior – the stigma of abnormal behavior – Adaptive and maladaptive behavior - The concept of normality and abnormality - Theoretical Perspectives: Psychodynamic, Behavioral, Cognitive and Existential - Causal factors - types of treatment facilities – types of mental health specialists.

UNIT II

Systems of classification of maladaptive behavior - DSM – V, ISD-10, similarities differences – advantages and disadvantages of classification – major diagnostic categories - Theories and Models of Anxiety Disorder: a) Panic, Phobic, OCD b) Somatoform Disorders, c) Dissociative Disorders , Schizophrenia and other psychotic disorders, Mood Disorders: Depressive-unipolar and bipolar disorders.

UNIT III

The bio-psychosocial model – stress and illness – psycho-physiological disorders – classification of psychophysiological disorders: Theories: Personality disposition, rheumatoid arthritis, low back pain, Asthmatis, Allergy, Eczema, Itching, coronary heart disease – essential hypertension – headaches – migraine – tension headaches – peptic ulcers – colitis-genitor urinary disorders – Diabetes and menstrual disorders.

UNIT IV

Mood Disorders Mania, Hypomania, Depressive episode, Recurrent depression, Bipolar affective disorders, Dysthymia, Cyclothymia - Anxiety, Somatoform and Dissociative Disorders Anxiety Disorders: Panic Disorder, Phobic disorders, Obsessive Compulsive Disorder, Post traumatic stress disorder, Generalised Anxiety disorder

UNIT -V

Disorders of Personality: Adjustment disorder b) Impulse Control disorders c) Substance related disorders: Substance Abuse - Doping in Sports: History- stimulants, anabolic steroids – endurance and non-endurance sports: side effects in men and women- anti-doping

organizations and legislation d) Eating disorders and Sleep disorders , Sexual and Gender Identity Disorders.

REFERENCES:

1. Carson, R. C., Butcher, J., & Susan, M.(1996). Abnormal Psychology and Modern Life (Tenth Edition). Harper Collins College Publishers.

2. Diagnostic and Statistical Manual of Mental Disorders, IV Edition American Psychiatric Association, Jaypee, 2005

3. Fish, F. & Hamilton, M.(Eds) .(1979). Fish's Clinical Psychopathology. Bristol: John Wright & Sons.

4. Kaplan, H. & Sadock, B. J.(1998). Synopsis of Psychiatry (9th Edition). New Delhi: B.I. Waverly

5. Millon, T., Blaney, H. P., & Davis, D. R.(1999). Oxford Textbook of Psychopathology. New York: Oxford University Press

6. Wenar, C. &Kerig, P. (2000). Developmental psychopathology. Singapore: McGraw

7. Debbie Stanley (2000) " Understanding Sports and Eating Disorders" : The Rosen Publishing Group . ISBN ``: 0823929930, 9780823929931

8. Rosen, Daniel. Dope: A History of Performance Enhancement in Sports from the Nineteenth Century to Today.

9. Wilson, Wayne (2000). Doping in Elite Sport: The Politics of Drugs in the Olympic Mvnt: The Politics of Drugs in the Olympic Movement. Human Kinetics.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics ofthe biological, psychological, behavioral, cognitive, humanistic-existential and sociocultural models of abnormal behavior and its influence on sports performance.
2. Analysethe different systems of classifications of maladaptive behaviour

3. Develop critical thinking and apply strategies on solving the emotional, behavioural and other psychopathological issues faced on and off the field of sporting arena and also their influence sports performance,

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2		1	1			1			
2			1	2	1	1		1		
3	1	2	2				2	2	2	2

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of the biological, psychological, behavioral, cognitive, humanistic-existential and sociocultural models of abnormal behavior and its influence on sports performance.
CO2	Analyse the different systems of classifications of maladaptive behaviour
CO3	Develop critical thinking and apply strategies on solving the emotional, behavioural and other psychopathological issues faced on and off the field of sporting arena and also their influence sports performance

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PSP18CT404 THESIS

Students are required to submit a thesis at the end of the year. The thesis shall embody the record of original investigation under the guidance of a supervisor.

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COURSE OUTCOMES

At the end of the course, the student will be able to:

1.Enabling the students to identify a problem in their area of interest and finding ways to solve the problem

2.Gathering related literature and analyzing data pertaining to their study

3. Gaining appropriate scientific writing skills.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	1	2							
2		1	1		2				2	
3		3	1	1	2				1	

01 - Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Enabling the students to identify a problem in their area of interest and findin ways in tackling and solving the problem
CO2	Gathering related literature and analyzing data pertaining to their study
CO3	Gaining appropriate scientific writing skills.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PROGRAMME: M.Sc.

SPORTS PSYCHOLOGY AND SOCIOLOGY

PROGRAM EDUCATIONAL OBJECTIVES:

PEO-1	To produce students with effective interpersonal skills and psycho-social skills to help athletes to excel in sports profession
PEO-2	To enable the student to articulate the skill sets desired by employers who hire or select people who demonstrate the knowledge of Psychology and Sociology in sports.

PROGRAM OUTCOME

The student will be able to:

PO1: Demonstrate fundamental knowledge and comprehension of the major concepts, theoretical perspectives, and empirical findings to discuss how psychological principles apply to behavioural problems among athletes.

PO2: Understand the application of psychological and sociological theories in sports.

PO3: Identify methods that can help teams improve their dynamics, boost their performance, recover from injuries, and overcome emotional obstacles caused by competition.

PO4: Articulate an approach to work effectively with diverse individual and groups by demonstrating the psychological skills and techniques to enhance sports performance

PO5: Demonstrate professional ethics and commitment in all aspects of professional practice.

PO6: Carry out researches on various domains of psychology and sociology in relation to sports.

PO7: Develop critical thinking and applies strategy on solving emotional and social problems in sports situations.

PO8: Plan to communicate to formulate effective arguments for report writing/presentation.

PO9: Relate to society by contributing to the society by community engagement and justify to be a responsible global citizen

PO10: Focus on the professional realities of working as a sports psychologist or sports sociologist.

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PE0-1				**X**	**X**		**X**	**X**	**X**	**X**
PEO-2	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**

PROGRAM SPECIFIC OUTCOME - SPORTS PSYCHOLOGY AND SOCIOLOGY

PSO-I	Graduates will be able to analyse, articulate with concrete psycho-social skills, enabling the individuals to understand their behavior and managing them for enhanced sports performance.
PSO-2	Graduates will be able to create positive changes by empowered and diversified approaches towards the promotion of health and wellness.

FIRST SEMESTER

PPS18CT101 - ADVANCED GENERAL PSYCHOLOGY

UNIT I

Introduction: Definition and Goals of Psychology: Approaches: Biological, Psychodynamic, Behaviorist, Cognitive, and Humanistic. Methods of Psychology: Experiment, Observation, Interview, Questionnaire and Case study. Fields and Scope of Psychology.

UNIT II:

The Sensory and Perceptual process: Some general characteristics of Five Senses – Perception: Determinants of Perception: Form, Space and Depth – Attention: determinants of attention.

UNIT III:

Learning, Memory and Forgetting: Learning: principles and methods – classical conditioning – operant conditioning – the principle for reinforcement – cognitive learning- Transfer of learning – reward and punishment in the control of learning. Memory and forgetting: Memory – Stages of Memory – Types of memory – Improving Memory – Forgetting: Theories of Forgetting, Kinds of Forgetting.

UNIT IV:

Intelligence, Thinking and Problem Solving: Definition, Theories of Intelligence, Measurement of Intelligence. Thinking and Reasoning: Concepts, Categories, Schemas and Scripts, Imagery and Cognitive Maps, Creative Thinking – Concepts, Problem Solving Approaches: Solution Strategies and Mental Sets.

UNIT V:

Motivation: Physiological Basis of Motivation, Theories of Motivation – Emotions : Facial Expressions – Theories of Emotions - **Personality**: Definition, Trait and Type Approaches: Biological and Socio-Cultural Determinants, Techniques of Assessment: Psychometric and Projective tests.

REFERENCE

Henry Glietman,James Gross, Danial Reisberg (2011) – Psychology, 8th Edition, Norton and Company, ISBN: 978-0-393-93250-8

Ronald Comer, Nancy Ogden, Adrian Furnham (2013) Psychology – IISBN: 978-1-119-94126-2

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Apply conceptual knowledge of the core areas of Psychology and Sociology and study the diversities present.

2. Examine the knowledge related to the approaches used in the field of psychology to understand human behaviour and mental process.

3. Will be able to relate behavioural issues through theoretical approaches and methods ethically by contributing to society as a responsible citizen

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1	1			2	1		
2	1	1		2	1		1		1	1
3		1	1	1	2		2	2	1	1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Apply conceptual knowledge of the core areas of Psychology (cognitive, sensory, perceptual, learning, motivation and personality) and the links between them
CO2	Examine the knowledge related to the approaches used in the field of psychology to understand human behaviour and mental process.
CO3	Will be able to relate behavioural issues through theoretical approaches and methods ethically by contributing to society as a responsible citizen

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2		**1**
CO3		**1**

PPS18CT102: INTRODUCTION TO SPORTS SOCIOLOGY

UNIT I

Introduction: Definition – Nature and Scope of Sociology and Sports Sociology – Relationship with other Social Sciences including Sports Sociology. Importance of sports sociology

UNIT II

Society and the place of sports and games: origin and development of sports in various societies (Greek & Roman) – Sports as social as group behavior – Sports as cultural activity: Sports culture - Sports and communities sports as community activity.

UNIT III

Sports as Social and a Group Process: Meaning and types of Social process – Sports in Social process frame work. Team spirit as supra – individual power: McDougals, Durkheim, Allports, Lewis.

UNIT IV

Socialization In and Social Control of Sports: Meaning of socialization Training and induction into sports as socialization – Role of parents and professionals in sports socialization – Meaning of social control – sports as a socially regulates activity – Sports as a social value – Sports and social rewards.

UNIT V

Social Stratification and Sports: Meaning and forms of stratification – Social class and sports – gender and sports – race and sports – Age and Sports – Globalization and Sports.

REFERENCE:

Fiehter, J.H. (1991), Sociology 2nd Ed. London. The University of Chicago Press.

Pascal, G. (1999) Fundamental of Sociology, 3rd Rev.Ed.,Bombay, Orient Longman.) Inkless.Alex,(1987) What is Sociology, New Delhi Prentice Hall of India Pvt.

Giddens A (1989) Sociology, Cambridge, Polity Press.

Harlambos, (1999) , Introduction to Sociology, Oxford University Press.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the basics of sociological phenomenon in relation to sports.
2. Analyze social issues with a commitment to social justice and intellectual diversity in the society.

3. Understand the role that sport has in society and how sport reciprocally influences society

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1	1		1	1		
2			2		1		2	1	1	1
3		2			2		1		1	1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Apply psychology-specific content and skills, effective self-reflection, se management skills, teamwork skills, frame goals, and enhance performanc socio cultural influences and game preparation.
CO2	Gain knowledge about psychometrics, cognition, motivation, personality and emotion and their influence in a game.
CO3	Apply psychological concepts and skills required in competitive sport participation

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPS18CT103: RESEARCH METHODOLOGY

UNIT I

Definition of research – meaning need, importance and scope of research in sports psychology and sociology. Classification of research Basic research, Action research, Applied research – Barriers in Research - Ethics in research. - Recent Research trends in Sports Psychology and Sociology.

UNIT II

Descriptive research methods – Need and importance of survey Study, case study, interview technique, Historical and philosophical research, observation, construction and standardization of Questionnaire – Problem and Hypothesis.

UNIT III

Research Design: Definition, Types of Research Design: Experimental design – Single group design – Reverse group design – Repeated measures design – Static group design – Factorial design – fixing the level of Significance and degrees of freedom for a research problem.

UNIT IV

Sampling: definition, sampling planning – components – sample methods – probability and non – probability methods – sampling distribution – determining sample size – sampling error.

UNIT V

Contents in the research report: Introduction – Hypothesis – Delimitation – Limitation - Review of related literature – Summary – Conclusion – Recommendations. Research format: Style of writing research report. Mechanism of writing Research Proposal - Abstract – Synopsis – References – Appendixes – Contents – Tables – figures – preliminary – end pages – Plagiarism.

REFERENCE:

Clarke David. H and Clarke H. Harrison (1984) Research process in Physical Education, New Jersey: Prentice Hall Inc.

Best, John W. and Kalm James, V. (1980) Research in Education, New Delhi: PrenticeHall of India.

Kothari C.R. (1985) Research Methodology 2nd revised ed., New Age International, Publisher; New Delhi.

COURSE OUTCOMES

At the end of the course, the student will be able to:

. 1. Illustrate basic and applied research to address issues in psychology and sociology.

2. Understand and apply basic research methods in psychology and sociology, including research design, data analysis, and interpretation
3. Examine the importance of the use of statistical analyses and reporting of results in research publications.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	1	1		2		1	1	1	
2		2	2	1		1	2	1	1	1
3	1	1	2			1		1	1	

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Illustrate basic and applied research to address issues in psychology
CO2	Understand and apply basic research methods in psychology and sociology, including research design, data analysis, and interpretation
CO3	Examine the importance of the use of statistical analyses and reporting of results in research publications

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPS18CP104: PSYCHOLOGICAL TESTING

Students are required to conduct and record any 08 experiments.

1. Competitive State Anxiety
2. Psychological Performance
3. Locus of Control –Internal/External
4. Life Skills
5. Mental Imagery
6. Extrinsic/Intrinsic Motivation
7. Depth Perception
8. Concentration
9. Sports Specific Personality Inventory
10. Sports Achievement Motivation
11. Reaction Time

REFERENCE:

REFERENCES:

1. *Woodworth, R.S. and Scholsberg (1972), Experimental psychology. Holt, Rinehart & Winston.*
2. *Anastasi & Susana Urbina (2004) 7th Edition, Psychological Testing, Pearson Education Inc, New Delhi..*
3. *Parameseswaran & Ravichandran. (2003). Experimental psychology. Neel Kamal Publications.*

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically assess the information by administering the psychometric assessments to study human behaviour and mental processes and also forms conclusions and arguments

2. Administers psychometric tools and interprets the evaluation for framing the strategy to improve the sports performance and mental health of the athlete

3. Understand the ethical values of interpretation of the assessment tools.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	2	1	2	1	2	1	1	
2		1	2			2	1	2		2
3		1	2	1	2		1	1	1	1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF POs WITH COs

CO1	Critically access the information by administering the psychometric assessmer to study human behaviour and mental processes.
CO2	Administers psychometric tools and interprets the evaluation for framing t strategy to improve the sports performance and mental health of the athlete
CO3	Understand the ethical values of interpretation of the assessment tools.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

SECOND SEMESTER

PPS18CT201: PSYCHOLOGICAL ASPECTS OF SPORTS PERFORMANCE

UNIT I

Bases of Psychological Preparation: Positive Attitude, Calmness, Self Confidence, Fighting spirit – Adapting to competitive situation, situational control , controlling the athletes state before competition - Overtraining, Physiological and Psychological Impact of Overtraining.

UNIT II

Cognition: Thinking- Strategic Thinking, Attention-Dimensions of Attention, Role of attention in Individual and Team Sports, Ways to improve attention and concentration skills, Discussion: Direct and Indirect Suggestions

UNIT III

Motivation: Motivation of children and Youth in sports - Extrinsic and Intrinsic Motivation in Sports – Perceived competence - Achievement Motivation and Competitiveness, Theories of Achievement Motivation

UNIT IV

Psychological Preparation of Training and Competition: Competition in sports – types of competition - Determinants of Competitive Behavior –Characteristics of pre-competition, competition and post competition -

UNIT V

Personality: Personality and Psychological characteristics of Athletes – Personality traits and sports - Mood states and athletic performance – Iceberg Profile – Mental Health and Sports.

REFERENCES:

1. Gangopadhyay, S.R. (2008) – Sports Psychology, Sports Publications, New Delhi.

2. Burton, D, Thomas D. (2008) – Sport Psychology for Coaches, Human Kinetics Publishers, UK.

3. Gurbakhsh S.Sandhu (2002) - Psychology in Sports – A Contemporary Approach' friends publications, New Delhi

1. Martens, R. (1987) – Coaches Guide to Sport Psychology, Human Kinetics Publishers, Champaign, Illinois

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Relate the knowledge of psychology to assist in treating a wide range of mental health issues commonly experienced by athletes and sports industry professionals in a clinical setting.

2. Examine the link between psychological features influencing athletic activity in competitive sports.

3. Analyze how participation in sport influences the psychological make-up of those individuals involved in athletic competitions.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	2		1	1	1	1	1		
2		1	2		1		2	1	1	1
3			2	1	1	1	1	1	1	1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Define the basics of physiological principles relevant to the effect of exercise on human functioning and performance and examine the relation to sports with respect to socio cultural influences in a society.
CO2	Analyze the different psychological factors influencing individual growth and development through life time
CO3	Recommend sport as a community building activity, use games and physical activities to enhance individual competencies

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3		**1**

PPS18CT202: INDIAN SOCIAL SYSTEM AND SPORTS

UNIT I - Indian Society: Indian society as a multicultural society - Multiculturalism and its implication for Indian Sports. Age and Sex Structure of India's population and its implication for sports. Stages of life and its implication.

UNIT II - Village Community and Sports: Village as a community and a social system – Village Social Life and the place of games and sports: Sports as divisive and cohesive social activity of the villages – Rural religion, festivals and sports – Rural family, leisure and recreation activities – Traditional competitive sports events of rural India – Recent initiatives to promote rural talents in sports in India.

UNIT III - Traditional Institution and Sports in India: Family and Sports – Tennis, equestrian, cricket – Caste and Sports – Religion and Sports – Region and Sports

UNIT IV - Social change and sports in Modern India: Emergence of sports as a profession and vocation in modernization and parochialization – Emergence of traditional sports as universalization - Corporatization of sports in India - Institutionalization of traditions sports of India.

UNIT V - Politics of Sports in India: Organizational structure of sports in India: Ministry, Boards, Authorities, Universities, Associations, Clubs challenges facing sportsman in India.

REFERENCES:

1. Mandelbun, D.G.L. (1990), Society in India, Berkerley, and University of California Press, Vol 1 Parts 24 & 4.

2. Singh, Yogendra, (1993) Modernization of Indian Tradition, a Systematic Study of Social Cahange, New Delhi, Thompson Press.

3. Srinivas M.N. (1962), Caste in Modern India and other essay, Bombay, Asia Publishing House.

4. Nicholas B.Dirks. (1996) Castes of mind permanent block D-28, Oxford Apartments, 11, 1.p.extention, Delhi. 110 092.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand multicultural Indian society, Indian sports, and the importance of recreational activities in social life

2. Gain knowledge to promote talent in traditional sports in the social system considering the role of religion, culture and family.

3. Understand the challenges faced by the sports professionals in India and the benefits of Professional sports sociologist in improving the Indian social system.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1	1	1		1	1		
2	1	1	2	2	1		1		1	1
3	1	2		1	1	1	1	1	1	1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand multicultural Indian society, Indian sports, and the importance recreational activities in social life.
CO2	Gain knowledge to promote talent in traditional sports in the social syste considering the role of religion, culture and family.
CO3	Understand the challenges faced by the sports professionals in India and the benefits of professional sports sociologist in improving the Indian social system.

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3		**1**

PPPS18CT203: SOCIAL AND BEHAVIOURAL STATISTICS

UNIT I - Introduction to statistics types, classification and basic concepts of statistics – Measures of central tendency – Mean, Median and Mode – Measures of variability: Range, Mean deviation Quartile Deviation and standard deviation.

UNIT II - Introduction to Normal distribution – Normal curve – Characteristics of Normal Curve – Standard Normal Curve - Problems Based on Normal distribution – Uses of Normal distribution.

UNIT III - Testing of Hypothesis: Hypothesis – Type I & II error – Acceptance and critical Region – Test of significance of a single Mean – Difference between two means for small and large sample tests – paired t – test for difference of mean.

UNIT IV Single Sample t-test, t-test distribution – Paired sample t-test, Indpendent sample t-test, - Between Group ANOVA – Within Group ANOVA – Two way between groups ANOVA.

UNIT V - Pearson product moment correlation – Rank order correlation – Partial and Multiple correlation – Chi square – Test for Independence – contingency coefficient.

REFERENCES:

Susan A. Nolan | Thomas E. Heinzen (2012) - Statistics for the Behavioral Sciences Second EditionSeton Hall University William Paterson University

Rand Wilcox (2012)– Modern Statistics for the Social and Behavior Sciences – A practical Introduction , CRC Press, Taylor and Francis Group.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1 Understand the basics of organize, manage, present data, describe and discuss the key terminology, concepts tools and techniques used in statistical analysis

2. Critically evaluate the underlying assumptions of analysis tools and discuss the issues surrounding sampling and significance

3. To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1		

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH CO

CO1	Understand the basics of organize, manage, present data, describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis
CO2	Critically evaluate the underlying assumptions of analysis tools and discuss tl issues surrounding sampling and significance
CO3	To develop the students' ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPS18CP204: PSYCHOLOGICAL TESTING & ASSESSMENT – II

Students are required to conduct and record any 08 experiments

1. Sports Aggression
2. Team Cohesion
3. Mental Toughness
4. Mindfulness
5. Motives for Competition
6. Flow State
7. Performance Failure Appraisal
8. Exercise Motivation
9. Athletic Coping Skills
10. Eye Hand Coordination
11. Bio-feedback

REFERENCE:

Woodworth, R.S. and Scholesberg (1972), Experimental psychology. Holt, Rinehart & Winston.

Anastasi & Susana Urbina (2004) 7th Edition, Psychological Testing, Pearson Education Inc, New Delhi.

Cronbach, L.J, Essentials of Psychological Testing.

Parameseswaran & Ravichandran. (2003). Experimental psychology. Neel Kamal Publication

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Critically assess the information by administering the psychometric assessments to study human behaviour and mental processes and also forms conclusions and arguments

2. Administers psychometric tools and interprets the evaluation for framing the strategy to improve the sports performance and mental health of the athlete

3. To develop the ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniques wherever relevant in their research

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2		1		1	1			
2		1		2	1	2	1	1		
3	1		2	2	1	2	1	1		

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH Cos

CO1	Understand the basics of organize, manage, present data, describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis
CO2	Critically evaluate the underlying assumptions of analysis tools and discuss the issues surrounding sampling and significance
CO3	To develop the students ability to deal with numerical and quantitative issues in behavioural sciences and effective use of statistical and graphical techniqu wherever relevant in their research

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

THIRD SEMESTER

PSP18CT301: FUNDAMENTALS OF COUNSELING SKILLS

UNIT I

Introduction: Definition – Development and goals- History and Current trends in counseling – Counselor – the nature of counselor's work - counselee relationship - counseling process: Steps – purposes of counseling - scope of counseling – characteristics of effective counseling -

UNIT II

Approaches to Counseling: Directive, Non-directive, Psychoanalytic, Humanistic, Reciprocal inhibition technique, Eclectic approach - Basic Counseling Theories – Psychoanalytic theory, Adlerian theory, Existential theory, person centered theory, gestalt theory- Counselling in India - legal and ethical issues: ethical issues – ethical dilemmas – legal concerns of counselor.

UNIT III

Special areas: Family counseling, students counseling, parental counseling, educational, vocational and career counseling - Counseling Interview: Communication, verbal, nonverbal, interview, techniques of interview, relationship technique, problem identification and exploration, sharing, transference, counter transference. - Counseling the special population - global counseling and trauma counseling

UNIT IV

Professional Preparation & Training**:** Selection, skills, counseling as a profession, desirable characteristics - Modern Trends: Career guidance, Functions of counselor, stages of counseling - Techniques: Egan's Model, Interviews, testing-– Mastering the techniques of counseling :

UNIT V

Group Counseling **–** Definitions — values of group Counseling - Group therapy – Training & Sensitivity groups – Group process and group dynamics - Group Counseling and Group therapy; Group vs. Individual Counseling; Types of groups - Issues in Group Counseling.

REFERENCE:

1. Lewis E. Patterson and Elizabeth Reynolds Welfel (2000). The Counselling Process, 5th
   edition, Wasworth Brooks / Cole, Thomson Learning.
2. S. Narayana Rao (1981) Counselling Psychology, Tata McGraw Hill Publisher.
3. Brammer. L.M. and Shostrom E.L. (1977) Therapeutic Psychology, Englewood Cliffs, New Jersey.
4. Feltham. C & Horton. I (2000) Handbook of Counselling and Psychotherapy, London : Sage Publication.
5. Nelson - Jones, R. (1995). The Theory and Practice of Counselling, 2nd Edition, London : Cassell.
6. Covey, G. (2008). Theory and Practice of Counselling and Psychotherapy (8th ed.) Canada: Brookes/Cole.
7. Covey, G. (2008). Student manual for Theory and Practice of Counselling and Psychotherapy (8th ed.). CA: Brooks/Cole.
8. Burl E. Gilland & Richard K. James (1998). Theories and Strategies in Counselling and Psychotherapy. Singapore: Allyn and Bacon.
9. James O. Prochaska & John C. Norcross. (2007). Systems of Psychotherapy: A trans theoretical analysis (6th ed.). Thomson-Brooks/Cole.
10. Palmer, S. (ed.). (1999). Introduction to counselling and psychotherapy: The essential guide. New Delhi: Sage.
11. Simon, L. (2000). Psychotherapy: Theory, practice, modern and post modern influences.
    Westport, Connecticut: Praeger.
12. Sharf, R.S.(2000). Theories of psychotherapy and counselling: Concepts and cases (2nd ed.).Singapore: Brooks/Cole.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Understand the factors contributing for positive outcomes in guidance and counselling

2. Access the purpose of testing and assessment understand the role of confidentiality and the limits to it in terms of the counselling and supervisory relationships.

3. In depth knowledge of ethical codes and variety of ethical dilemmas that could arise, and understand the ways in which to navigate and select the best course of action.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	2	1		1	1	2	1	
2		2	1		2	1		2	1	1
3	2	1	2		2		1	1	1	

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Understand the basics of psychological principles; professional and ethical practice in the role of counsellor in various settings.
CO2	Develop knowledge on career assessments related to interests, personality, values, and career development.
CO3	Describe the role that human growth and development in counselling interventions and to appropriate modification made in a multicultural society.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PPS18CT302 - LIFE SPAN DEVELOPMENT

UNIT I: Life span development: issues and Theories: Introduction - Life span approach: The context of development – the impact of culture on development – the study of human development: The continuity of development – Determinants of Development – Major contemporary theories: Psychoanalytic, Cognitive and Behavioral

UNIT II: The Beginning Year: Genetics , Pregnancy , Birth and infancy : Genetic Foundations – The process of Conception – Prenatal Development – Stages of Prenatal development - Effects of prenatal environment – Birth : The Birth Process – Child birth methods – Complications – Infancy : Physical, perceptual, Cognitive , social and personality Development

UNIT III: Early childhood, Middle Childhood and Adolescence : Physical : Size and Proportion- Motor Development- Physical fitness – puberty- language – Structure of Language- language acquisition - concrete operational thought – Moral reasoning information processing : Attention- Memory – Disabilities in children- personality : The Development of self – Freud and Erikson's stage of personality – social : The child's Social world : Aggression, pro social behaviour - social play- self socialization

UNIT IV: Adulthood : Early, middle and late Adulthood – Physical, Cognitive, Personality, occupational , Family, Social relations and Adjustment – The impact of growing older- Mental health and aging – relations with grandchildren- retirement

UNIT V: Old Age : Death, Dying and Bereavement: Death: The Final Stage of life – The Dying Process: Kubler - Ross's Stage of Dying – Near Death Experiences – Issues in the care of Dying – Hospital Care – Bereavement.

REFERENCE:

Gormly, A.V. and Brodzinsky, D.M. Lifespan Human Development. NY: Harcourt Brace College Publishers 1993

VendarZanden, J.W. Human Development . New Delhi: McGraw Hill. Inc. 1993

Human Development – Elizabeth Hurlock

Human Development - Papalia

COURSE OUTCOMES

At the end of the course, the student will be able to:

1.Critically assess information related to different developmental processes in a life span of a person.

2. Analyse the differences between the various methods of investigation used in developmental studies and the relationship between physiology, cognition, and emotion in the different developmental stages.

3.Identify and evaluate factors affecting the physical, social, emotional, psychological, and intellectual development of children, adolescents and aged.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	2	1		1	1	2	1	
2		2	1		1	2		2	1	1
3	1	1	2		2		1	1	1	

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Critically assess information related to different developmental processes in a life span of a person.
CO2	Analyse the differences between the various methods of investigation used in developmental studies and the relationship between physiology, cognition, and emoti in the different developmental stages.
CO3	Identify and evaluate factors affecting the physical, social, emotional, psychological, and intellectual development of children, adolescents and aged.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3		**1**

PPS18CT303- SOCIOLOGICAL THEORIES

UNIT I: SOCIOLOGICAL THEORY: Definition of Theory, Characteristics of Sociological Theory, Types: Functions of Theories.

UNIT II: AUGUSTE COMTE: Beginning of Sociology. Methods of Inquiry. The Law of Human Progress. Hierarchy of Sciences. Social Statics and Dynamics.

UNIT III: HERBERT SPENCER: The Evolutionary Doctrine. The Organic Analogy. Social Types: Militant and Industrial Societies.

UNIT IV: KARL MARX: Dialectical materialism. Economic determinism. Class struggle. The Concept of Alienation. Theory of Social Change.

UNIT V: EMILE DURKHEIM: Methodology of Social Sciences. Individual and Society. The Sociology of Religion. Theory of Suicide. Division of Labour. Anomie.

REFERNCES:

Barnes, Harry Elmer "AN INTRODUCTION TO THE HISTORY OF SOCIOLOGY", Chicago, University of Chicago Press, 1948.

Coser, Lewis A. "MASTERS OF SOCIOLOGICAL THOUGHT" New york, Harcourt Brace Jovanovich, Inc., 1971.

Timasheff, Nicholas S. SOCIOLOGICAL THOERY – ITS NATURE & GROWTH", New York, Random House, 1967.

Nishet, Robert A. "THE SOCIOLOGICAL TRADITION", London, Heinemann, 1979.

Bogardus, Emory S. "THE DEVELOPMENT OF SOCIAL THOUGHT", Bombay, Vakils, Borrer and Simons Pvt. Ltd., 1960.

Aron, Raymond "MAIN CURRENTS IN SOCIOLOGICAL THOUGHT" Vol. 1&2, Hammondsworth, Middleses, Penguin Books, 1965.

Abel, Theodore "THE FOUNDATION OF SOCIOLOGICAL THEORY" Indian ed., Jaipur, Rawat Publications, 1980.

Abraham, Francis M. "MODERN SOCIOLOGICAL THEORY: AN INTRODUCTION "Delhi, Oxford University Press, 1982.

COURSE OUTCOMES

At the end of the course, the student will be able to:

- Describe and apply some basic theories or theoretical orientations in at least one of the social realities.

- Apply critical thinking skills to sociological data and theory. Show how patterns of thought and knowledge are directly influenced by political-economic social structures.
- Show how social issues can be better understood by emphasizing the micro/macro connections. Participate actively in civic affairs.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	2		2	1		1		1
2		2	1		1	1	1	1	1	
3	1	2	1		1		2	1		1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH Cos

CO1	Describe and apply some basic theories or theoretical orientations in at least one of the social realities.
CO2	Apply critical thinking skills to sociological data and theory. Show how patterns of thought and knowledge are directly influenced by political-economic social structures.
CO3	Show how social issues can be better understood by emphasizing the micro/macro connections. Participate actively in civic affairs.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2		**1**
CO3		**1**

PSO18AEC02 – LIFE SKILLS MANAGEMENT (AEC II)

Unit I:

Introduction: Soft Skills - Concepts and Definition- Need and importance of Soft Skills – Developing Soft Skills – Implications on Youth Development .

Unit II:

Behavioral Skills : Attitude, Lateral Thinking , Emotional Intelligence, Leadership, Team Building and Interpersonal Skills.

Unit III

Social Skills and Negotiation Skills: Self Awareness and Empathy , Influencing, - Effective Communication –Oral Presentation Skills – Interviewing – Delegating.

Unit IV:

Thinking Skills: Critical Thinking and Creative Thinking – Problem Solving and Decision Making skills.

Unit V:

Coping Skills : Coping with stress and Emotions – Conflict Resolution – Negotiating - Time and Stress Management Skills.

REFERENCES:

G. Ravindran, S P Benjamin, Elango and R. Arokiam (2007) - Success through Soft Skills, ICT

Kamin M (2013) Soft Skills Revolution: A Guide for Connecting with Compassion for Trainers, Teams, and Leaders. ISBN: 978-1-118-10037-0

COURSE OUTCOMES

At the end of the course, the student will be able to:

- Demonstrate fundamental knowledge and comprehension of the major concepts, to discuss psychological principles to building life skill.
- Develop and exhibit and accurate sense of self, nurture a deep understanding of personal motivation.
- Understand and practice personal and professional responsibility, strengthen personal character and enhance ethical sense

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	2	1			1	2	1	
2	1	2	1	2	1		1	2		
3		2	1	2		1	1	1	1	1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Demonstrate fundamental knowledge and comprehension of the major concepts, to discuss psychological principles to building life skill.
CO2	Develop and exhibit and accurate sense of self, nurture a deep understanding of personal motivation.
CO3	Understand and practice personal and professional responsibility, strengthen personal character and enhance ethical sense

PSO CO	**PSO1**	**PSO2**
CO1		**1**
CO2	**1**	
CO3		**1**

PPS18CP304: CASE STUDY AND PROJECT WORK

Students are required to submit a PROJECT at the end of the year. The Project shall embody the record of original investigation under the guidance of a supervisor.

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COURSE OUTCOMES

At the end of the course, the student will be able to:

CO 1 - Identify key research questions within the demographic field on which the student will carry out independent research.

CO 2 - Demonstrate appropriate referencing and develop skills in other aspects of academic writing.

CO 3 - Apply the demographic/statistical research training acquired in the taught element of the programme by designing an appropriate research strategy and research methodology to carry out research.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	2	1			3	2	2			2
2		1			2	2	1		1	1
3			1		3	1	1		1	1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF POs WITH COs

CO1	Identify key research questions within the demographic field on which the student will carry out independent research.
CO2	Demonstrate appropriate referencing and develop skills in other aspects of academic writing.
CO3	Apply the demographic/statistical research training acquired in the taught element of the programme by designing an appropriate research strategy and research methodology to carry out research

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

FOURTH SEMESTER

PPS18CT401: COUNSELING AND BEHAVIOR MODIFICATION TECHNIQUES

UNIT I

Basic concepts – Meaning of Guidance and Counseling and their differences –Goals of counselling – counselling process – characteristics of counselor – Group counselling – special areas of counselling - applied areas multicultural counselling – Ethical issues- Psychotherapy – Effectiveness Of Psychotherapy

UNIT II

Approaches to counselling, person centered, Gestalt, Psychoanalytic, Cognitive, Trait factor, Behavioral and eclectic approach - Assessment Techniques - Important Factors – Tools of Assessment- Theories : Psychodynamic – Psychoanalytic and Adlerian Therapy Cognitive and Behavioural therapy: Behavioural Therapy – OCD, Cognitive: Beck's Cognitive Restructuring Therapy

UNIT III

Basic concepts of Behaviour Modification: Behaviour Counselling: Salient Features Enhancement of Client's Involvement – Some Misconceptions about Behavioral Approach. Relaxation Techniques: Jacobson's Deep Muscle Relaxation Training, Autogenic Training, Yoga and Meditation. Application of Behavior Therapy: Anxiety Disorders, Psychoactive substance use disorders, Sexual Disorders

UNIT IV

Assertion Training – Basic Dimensions – Training procedure – Components of Social Skill Training – Uses of social skill training – Precautionary points – systematic desensitization -. Operant Conditioning Techniques – Basic Paradigm – Schedules of Reinforcement – Aversive Conditioning and application – Token Economy – Shaping – Chaining – Other Operant Procedures, Premack's Principle and Prompting.

UNIT V

Cognitive Behaviour Modification – Fundamental Aspects – Cognitive Restructuring – Meichenbaum's Self Instructional training – Beck's Model – Rational Emotive Therapy (Ellis) – Thought Stopping and Variations – Problem Solving Techniques.

REFERENCES:

1. Corey, G (2005), Theory and Practice of Counseling and Psychotherapy, 7th Edition, Scarborough, Brooks/Cole.
2. Martin, G & Pear J (2000) Behavior Modification (7edition), New Delhi, Prentice Hall of India Pvt. Ltd.
3. Wolpe, J (1982), Practice of Behavior Therapy (3rd edition), New York, Oxford Pergamon Press Inc.
4. Nelson-Jones, R. (1994). - The theory of practice of counseling psychology – Cassel London.
5. Rimm, D.C. and Masters, J.C. (1974), - Behaviour Therapy: Techniques and Empirical Findings. New York: John Wiley and Sons.
6. Robert C. Carson. James. N. Butcher and Susan Mincka (1996) - Abnormal Psychology and Modern Life, 10th Edition, New York; Harper Collins College Publishers.
7. Swaminathan V.D. and Kaliappan, K.V. (1997), Psychology for effective living – Behaviour modification, Guidance, Counselling and Yoga, Chennai. The madras Psychology society publication.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Apply psychological knowledge and skills to address peak performance and well-being of athletes

2. Familiarize with a variety of ethical dilemmas that could arise, and understand the ways in which to navigate and select the best course of action for the athletes.

3. Integrate with the major counselling approaches and apply the effective sports performance.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1			2	1		1	2	1		
2	2	1		2	2		1	1	1	1
3		1	2	1	1	1	2	1		1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Apply psychological knowledge and skills to address peak performance and well-being of athletes
CO2	Familiarize with a variety of ethical dilemmas that could arise, and understand the ways in which to navigate and select the best course of action for the athletes.
CO3	Integrate with the major counselling approaches and apply the effective sports performance

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPS18CT302 - SCIENTIFIC DIMENSIONS OF SPORTS PSYCHOLOGY

UNIT I - History, origin and development of sports psychology – meaning, definitions, nature, scope and sports psychology. Need – importance of sports psychology.

UNIT II - Sports Psychology Association of India – interdisciplinary approach – importance of sports psychology for physical educators, coaches and athletes – ethic in sports psychology. Scientific foundations of psychological study of sports – developmental sports psychology – cognitive sports psychology – clinical sports psychology.

UNIT III - Psycho-physiological phenomena – visual, auditory and tactual cues – reaction time and performance time, speed and accuracy, warming up for action, fatigue, learning and performance, psychological and physiological limits.

UNIT IV - Socio- psychological phenomena, Socio- cultural force and sports competition and cooperation in physical activities – socio-economic status and athletes – women in physical education and sports – competition for the young. Personality traits and athletic participation – leadership – internationalism in sports – sports and social changes.

UNIT V - Differently challenged/abled person – injuries and related psychological adjustments. The perceptually handicapped – adjustment to physical impairment – personal injuries and psychological adjustments – psychosomatic disorders.

REFERENCE:

Gangopadhyay, S.R. (2008) – Sports Psychology, Sports Publications, New Delhi.

Liukkonen, J. (2007) – Psychology for Physical Educators – Students in Focus, Human Kinetics, U.K.

Shaw, D.F., Gorely, T. Corban, R.M. (2005) - Sport and Exercise Psychology, BIOS Scientific Publishers, UK

Llewellyn, J.H., Blucker A.J (1989)- Psychology of Coaching, 2nd Edition, Surjeet Publications, New Delhi.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Apply psychology-specific content and skills, effective self-reflection skills, teamwork skills, frame goals, and enhance performance, socio cultural influences and game preparation.

2. Gain knowledge about psychometrics, cognition, motivation, personality and emotion and their influence in a game.

3. Apply psychological concepts and skills in an ethical way to modify in meeting the needs of persons with a disability, and sustain participation and competition for disabled persons.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	2	1	1	1	2	1	1	
2	2		1	1	1			1		1
3		2	1	2		1	1	2		1

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF POs WITH COs

CO1	Apply psychology-specific content and skills, effective self reflection, self manageme skills, teamwork skills, frame goals, and enhance performance, socio cultural influenc and game preparation.
CO2	Gain knowledge about psychometrics, cognition, motivation, personality and emotio and their influence in a game
CO3	Apply psychological concepts and skills in an ethical way to modify in meeting the needs of persons with a disability, and sustain participation and competition for disabled persons

PSO/CO	PSO1	PSO2
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPS18CT403- INTERVENTION STRATEGIES AND SPORTS BEHAVIOUR

UNIT I: Intervention strategies: introduction, mental skills training in sports, Sports Psychology A clinician's perspective, action theory approach to applied sports psychology, eating disorders in sport: from theory to research to intervention, psychosocial antecedents of sport injury and intervention for risk reduction.

UNIT II : Intervention Strategies: Relaxation Procedures - Progressive Relaxation – Autogenic Training, Transcedental Meditation – Biofeedback, **Cognitive Strategies**: Imagery, Thought Stopping and Centering, Self – Talk, Psyching up strategies.

UNIT III : Overtraining: Performance focus, Psychological Well-being, Educating Coaches and Athletes about Overtraining, Physical Health, Increasing Coach-Athlete Communication, Developing Athlete Resources.

UNIT IV : Energy Management: Understanding Energy Management- Arousal affecting Performance, Effects of Under arousal and Over arousal in Performance, Developing Athlete Energy Management Skills – Phases in energy management - Education Phase, Acquisition Phase and Implementation Phase, athletes choking under pressure, preparatory routines in self paced events: Do they benefit the skilled athletes or the beginners helped.

UNIT V : Communication Process: Purposes, Types of Communication. Breakdown in Communication, Improving Communication, Confrontation.

REFERENCES:

1. Weinberg, R.S, Gould D (2003) – Foundations of Sport & Exercise Psychology, 3rd Edition, Human Kinetics, South Australia.

2. Gurbakhsh S.Sandhu (2002) - Psychology in Sports – A Contemporary Approach, Friends publications, New Delhi .

3. Murphy, S.M. (1995) Sport Psychology Interventions, Human Kinetics, Auckland.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Demonstrate adequate knowledge and understanding to address psychological issues faced by athletes on and off the field, both in individual and team sports.
2. Analyse how psychological factors impact sports injuries, rehabilitation and recovery of athletes.
3. Outline the intervention methods that can help athletes improve their dynamics, boost their performance, recover from injuries, and overcome emotional obstacles caused by competition.

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		1	1	1	2		2	1		1
2		1	2	1	1	1	1		1	2
3	2	1	2	1	1		2	1	1	2

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Demonstrate adequate knowledge and understanding to address psychological issue faced by athletes on and off the field, both in individual and team sports
CO2	Analyse how psychological factors impact sports injuries, rehabilitation and recovery of athletes.
CO3	Outline the intervention methods that can help athletes improve their dynamics, boost their performance, recover from injuries, and overcome emotional obstacles caused by competition.

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

PPS18CT404- THESIS

Students are required to submit a thesis at the end of the year. The thesis shall embody the record of original investigation under the guidance of a supervisor.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Familiarize with the existing trends in Research Methodology, for preparation of dissertation to instil some primary concepts of academic research.
2. Use scientific reasoning to interpret psychological phenomena, Demonstrate psychology information literacy,
3. Interpret, design, and conduct basic psychological research, incorporate socio-cultural factors in scientific inquiry

MAPPING OF POs WITH COs

COURSE OUTCOMES	PROGRAM OUTCOMES									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1		2	1	2	1	2			1	1
2			2	1	1	2	1	1		1
3		1	2	2	1	2	2	2	1	2

01- Low Level of Relevance, 02 - Moderate Level of Relevance, 03 - High Level of Relevance

MAPPING OF PSOs WITH COs

CO1	Familiarize with the existing trends in Research Methodology, for preparation of dissertation to instill some primary concepts of academic research
CO2	Use scientific reasoning to interpret psychological phenomena, Demonstrate psychology information literacy.
CO3	Interpret, design, and conduct basic psychological research, incorporate socio-cultural factors in scientific inquiry

PSO CO	**PSO1**	**PSO2**
CO1	**1**	
CO2	**1**	
CO3	**1**	

DEPARTMENT OF SPORTS MANAGEMENT AND SPORTS PSYCHOLOGY & SOCIOLOGY

M.Phil., Psychology (New)

M.Phil in Psychology (Regular)

Choice Based Credit System (CBCS)
Subject matter and Evaluating System
Norms, Rules and Regulations

1. PREAMBLE:

The Master of philosophy in Psychology (M.Phil) program is meant for candidates desirous of pursuing Research program in Psychology.

2. REGULATIONS

The syllabus is for one year M.Phil Degree program under CBCS system which will be implemented from the academic year 2014 – 15 onwards.

3. ELIGIBITLITY FOR ADMISSION:

A Candidate shall be admitted to the M.Phil degree in Psychology if he / she produce satisfactory evidence to the effect that he/she has successfully completed Master's Degree in Psychology or its equivalent Degree approved by the syndicate of the Tamil Nadu Physical Education and Sports University, Chennai.

For securing admission to the M.Phil Program, candidates must have secured 55 % of marks in the respective PG Degree program or any equivalent programs in the case of inter – disciplinary subjects. However, the minimum marks for the SC/ ST candidates would be 50%. For all the candidates, who have completed their PG Degree on or before 1991. The minimum eligible marks for admission to M.Phil would be 50%.

4. SCHEME OF SELECTION:

As Entrance test and interview would be administered for all the applicants, the performance in that would be taken into account along the marks scored in the PG program. The written Test would comprise objective Questions for 75 marks and the interview would carry 25 marks. The Rank list will be prepared accordingly.

5. COURSE OF STUDY :

M.Phil, Program shall be of duration of one Academic year with two semesters. A student should complete the M.Phil Program within three years after registration. The total working days of each year shall be 90 days inclusive of the period of the admission and examination etc., the medium of Instruction and examination shall be in English.

6. SEMESTER:

An academic year is apportioned into two semesters.

Odd Semester - July to November

Even Semester - December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days.

7. CHOICE BASED CREDIT SYSTEM (CBCS):

The CBCS in M.Phil, program would have the following components and the minimum credit requirements for each component to be completed in two semesters are:

Core Courses - 20 Credits

Dissertation - 08 Credits

VPP - 02 Credits

Total 30 Credits

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8. CREDIT DISTRIBUTION

FIRST SEMESTER

Paper Code	Paper Title	L	T	P	C
MPHPSY101	Research Methodology & Statistics	5	0	0	5
MPHPSY102	Area of specialization Applied Psychology	5	0	0	5
	Total	**10**	**0**	**0**	**10**

SECOND SEMESTER

Paper Code	Paper Title	L	T	P	C
MPHPSY201	Area of Dissertation	5	0	0	5
MPHPSY 202	Computer Operations Communication & Educational skills	5	0	0	5
MPHPSY203	Dissertation Viva voce	0 0	0 0	6 2	6 2
MPHPSY204	VPP	0	0	2	2
	Total	**10**	**0**	**10**	**20**

Total: 4 Theory Papers + Dissertation + VPP

Total Credits for the Programme: 30

Distribution of Total credits

Semester	L	T	P	C
First	10	0	0	10
Second	10	0	10	20
Total	**20**	**0**	**10**	**30**

L- Lecture Hour T- Tutorial Hour P – Practical Hour C- Credits

9. ASSESSMENT

Assessment of the students is consisting of continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 40: 60.

10. CONTINUOUS INTERNAL ASSESSMENT (CIA)

The CIA marks shall be awarded based on the following:

Theory Marks	
Best Scores of two tests out of three tests	20
Model Exam	10
Seminar/Assignment	10
Total	40

11. END SEMESTER EXAMINATION (ESE)

Except in the case of project-work and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 60. Standard practical examination for 60 marks will be conducted with external examiner.

12. EVALUATION

The following procedure will be followed for evaluation

a) The answer scripts are evaluated by both internal and external examiners (Double valuation)

b) If there is 10% difference between the two examiners, a third revaluation is conducted, which will be final

c) Theory papers : Duration Three Hours – External

Part A (10 x 1) - 10

Part B (5 x 4) - 20

Part C (3 x 10) - 30

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60 marks

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d) For a pass in each paper, the candidate is required to secure at least 50% in the semester Examinations.

13. THE AWARD OF GRADES IS AS FOLLOWS.

Marks	Grade	Description	Grade Points
90 and above	S	Superior	9.0 – 10.0
80 to 89	A	Very Good	8.0 – 8.9
70 to 79	B	Good	7.0 – 7.9
60 to 69	C	Very Fair	6.0 – 6.9
50 to 59	D	Satisfactory	5.0 - 5.9
Less than 50	F	Failure	

If a student has any grievance relating to his/her CIA, he/She may, within seven working days of the declaration of the Scores/thereof, prefer an appeal through his/her class Advisor to appear committee, which will consists of the HOD, class Advisor and course teacher. The Appeals committee will review/peruse the student's records work. Any appeal should be made along with an appeal fee of Rs.200/- per course /paper. The decision of the appeals committee shall be final. Double valuation system will be adopted for ESE valuation and therefore revaluation is not permitted whereas re totaling can be done by paying a fee of Rs.300/- per paper. Within in 15 days from the publication of results.

14. SCHEME OF EXAMINATIONS:
MARKS DISTRIBUTION

FIRST SEMESTER

Paper Code	Paper Title	Internal	External	Total
MPHPSY101	Research Methodology & Statistics	40	60	100
MPHPSY102	**Area of specialization** Applied Psychology	40	60	100
	Total	**80**	**120**	**200**

SECOND SEMESTER

Paper Code	Paper Title	Internal	External	Total
MPHPSY201	Area of dissertation	40	60	100
MPHPSY 202	Computer Operations Communication & Educational skills (pedagogical skill includes practical Training in teaching)	40	60	100
MPHPSY203	Dissertation	25	75	100
MPHPSY 204	Viva voce	-	50	50
MPHPSY205	VPP	50	-	50
	Total	**155**	**245**	**400**

Distribution of Total Marks

Semester	Marks			Credits
	Internal	External	Total	
First	80	120	200	10
Second	155	245	400	20
Total	**235**	**365**	**600**	**30**

MHPSY 101 RESEARCH METHODOLOGY AND STATISTICS

UNIT I - Research: criteria for locating and selecting research problems - subjects, variables – Hypothesis – Limitation – Delimitation – Review of related literature. Requirements for quality research and experimental control – Application of research findings for excellence in sports.

UNIT II - Research Design: Meaning, Significance and Criteria for selecting suitable research design: Quasi experiment – Cross sectional design – longitudinal design – Double blind placebo design – repeated measures design – rotated group design – Independent factorial design – mixed factorial design.

UNIT III - Research Laboratory: Methods of finding instrument, tester and subject reliability - Construction Standardization and adaptation of Sports Questionnaire. Sampling – Types of Sampling, sampling techniques – Tools of Data collection – Interview schedule – Survey Method – Mechanism of Writing Research Proposal - Mechanism of Writing Research Report – Synopsis – Abstract – Bibliography – Preliminary and End Pages.

UNIT IV - Introduction to statistics : Types, classification and basic concepts of statistics – measures of central tendency – measures of variability – Normal probability curve – properties of normal curve – Problems based on Normal curve – Testing of hypothesis – Problems based on t Test and Normal.

UNIT V - Need for analysis of variance : One way analysis of variance – Two way analysis of variance – Analysis of Covariance – Concepts or Correlation - Rank order correlation - Partial and Multiple Correlation – Biserial Correlation – Chi Square – Contingency Coefficient – Mann Whiteney U test – Kruskal Wallis H Test.

REFERENCES:

1. *Clarke David. H and Clarke H. Harrison (1984)* ***Research process in Physical Education*** *, New Jersey: Prentice Hall Inc.*
2. *Best, John W. and Kalm James, V. (1980)* ***Research in Education*** *, New Delhi: Prentice Hall of India.*
3. *Kothari C.R. (1985)* ***Research Methodology*** *2 nd revised ed., New Age International, Publisher; New Delhi.*

MHPSY 102 APPLIED PSYCHOLOGY

UNIT I- Positive Psychology : Positive Psychology: Introduction and historical Overview of Positive Psychology, Positive Prevention, and Positive Therapy. - Positive Psychology Approaches: Emotion-Focused,The Positive Psychology of Emotional Intelligence, Cognitive-Focused,Self-Based, Interpersonal, Biological, Specific Coping. - The Positive Psychology for Special Populations. - Positive Psychology at Work. - Positive Psychology and future.

UNIT II- Clinical Psychology : Introduction - Processes: Planning, data-collecting, interpreting and communicating the findings- Clinical Interview - Diagnosis and Classification; other assessment component and skills – General Issues : client, therapist, relationship; course of intervention : Various perspectives - Professional Regulation and Ethical legal issues- Current scenario and future prospect

UNIT III- Training and development : Training and development - Need for training—Training need analysis-Designing training courses-Training methodology-Training effectiveness-Training at different levels- Performance assessment-Approaches to Performance Assessment-Stages in performance Evaluation managing star performers and underperformers.

UNIT IV- School and Educational psychology : Introduction- Psychological Approaches to Education - Cognitive Psychology in Education - Thinking and Memory/Reasoning, Motivation – Methods of Assessment and various assessments in Educational Settings - Educational intervention :Counsellor as Educational Consultant: Guidance and Counseling: .Behavioural Management: Deep Muscle Relaxation Training, Systematic desensitization, Modelling.

UNIT V – Sports Psychology : Introduction – Brief history of Sports Psychology, Development and Its Scope, Role of Sports Psychologist - Character Development and Good Sporting Behaviour, Attention, Concentration, Stress and Anxiety, Motivation, Team Cohesion, Personality and Sports, Arousal Regulation and Coping Strategies, Over training and burnout,Psychology of Athletic Injuries and Rehabilitation.

References:

1. *C. R. Synder and Shane, J.Lopez, (2007), Positive Psychology The Scientific and Positive Explorations of Human Strengths, Sage Publications, Haryana.*
2. *Shane. J. Lopez, The Handbook of Positive Psychology,Newyork: Oxford University Press*
3. *Pomerantz, A.M. (2008). Clinical Psychology: Science, practice, and culture. SagePublications: New Delhi*
4. *Trull,T.J., &Phares,E.J. (2001). Clinical psychology: Concepts, methods, and profession (6 th ed.). Belmont,CA: Wadsworth/Thomson Learning*
5. *Nick, P. B., & James, T. W. (2008). Effective training - systems, strategies and practices.Prentice hall.*
6. *Bhatia, S.B. K. (2009). Training and development : concepts and practice. New Delhi: Deepand Deep publication private limited.*
7. *Mangal S.K (2008) Essentials of Educational Psychology, New Delhi, Prentice Hall of India Pvt ltd*
8. *Santrock, J.W. (2003). Educational Psychology. Boston: McGraw-Hill*
9. *Woolfolk, A. (2007). Educational psychology (10th ed.). Boston, MA: Allyn&Bacon*
10. *Ashwathappa. K(2005).Human Resource AndPersonnael Management.text and cases. New Delhi.Tata McGraw Hill*
11. *Michael Armstrong(2001).A Handbook Of Human Resource practice.8 th edn, London, Kogan.*
12. *Shane Murphy (2005).,The Sports Psychology Handbook, Human Kinetics.*
13. *Matt Jarvis (2000).,Sports Psychology.*

MHPSY201 AREA OF DISSERTATION

MHPSY202 COMPUTER OPERATIONS, COMMUNICATIONS AND EDUCATIONAL SKILLS

UNIT : I Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT : II Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create – insert – update – delete – select – commit – front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB

UNIT: III What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face interactions (situations) – Written – Letter Writing – Report Writing – Memo's – Note making - Agenda preparation.

UNIT :IV Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking, Pronunciation, structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT: V Pedagogy : Meaning, Theories of pedagogy (Benjamin Bloom, Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills of sex education – Integrading skill development, modernizing education and skill development – Basic and higher education : Issues and challenges.

References:

1. *'Soft skills', university of madras, Chennai*
2. *'Communication skills', university of madras, Chennai*
3. *Mangal .S.K. (2002). Advanced Educational psychology, prentice hall of India, New Delhi.*
4. *Sampath .K etal (1998) introduction to educational technology, sterling publishers, New Delhi.*
5. *keemar. K. (1997) Educational technology, New Age international publishers, New Delhi.*
6. *kuppusamy.B (1984). Advanced educational psychology, Sterling Publishers, New Delhi.*

COMPUTER OPERATIONS – SYLLABUS - PRACTIC ALS

1. MS – WORD

1. Create advertisement is MS WORD
2. To illustrate the concept of mail merging in word.
3. Document creation with scientific rotation
4. Test manipulation with scientific rotation
5. Table creation, table formatting and conversion.
6. Mail Merger and letter preparation
7. Drawing and Flow Chart.
8. Show the different effect for the given text in the document.
9. Create a table of employee and calculate the next salary.
10. Design a table with merge cells and split cells technique.

2. SPREAD SHEET

11. To create a Spread Sheet to analyze the marks of the students in a class and to create appropriate charts.
12. Charts in Spread Sheets
13. Formula and Formula Editor
14. Inclusion of objects, pictures and graphics protecting the document and sheet.
15. Sorting and import/ export features.
16. Create suitable chart to show the census data in Indian Sports.
17. Create a suitable chart to show the students average in the class.
18. Create an electronic spread sheet of marks, and find the total, average occurred in a calculation.
19. Generate the numbers vertically starting from 10 to 100 with step value 5.

3. POWER POINT

20. To create the presentation for the department using the power point.
21. Animation in Power point Presentation
22. Designing the Power point Presentation
23. Timing for the slides in Power point Presentation
24. Back ground designing in Power point Presentation
25. Designing the Power point Presentation using audio and Video.

4. **INTERNET LAB**

26. Browsing a Web Site.
27. Composing and Sending a Mail
28. Forwarding and replying to mails.
29. Downloading Articles / Web content.
30. Literature survey using search enquires

5. **DBMS LAB**

31. Creation of database table with constaints
32. Modification of data in a table.
33. 28 GUI applications using VB (Single calculator, dollar conversion etc)
34. Database Applications using VB (insert, update, delete).

REFERENCES:

1. *Peter Norton, "Introduction to Computers", 6th Edition, Tata Mcgraw Hill.*
2. *Ashok N. Kamthane, "Computer Programming", Pearson Education India.*
3. *Groff Weinberg, "The complete Reference SQL", 2nd Edition, Tata Mcgraw Hill.*
4. *Bottm Special Edition using Microsoft Office 2007, Pearson Education India.*
5. *Gray W. Harson and James V Harson (1996) Data Base Management and Design, Prentice Hall*
6. *Jeffrey A Hotter, Mary B Prescolt, Fred R. Medadden (2002), Modern database Management, Prentice Hall.*
7. *Robert I T Futrell, Donald F. shafer Linda, (2002) Quality software project management Pearson Education, Asia.*
8. *Chandran S.S. (1985) Innovations in Teaching Learning Process, New Delhi : Vikas Publishing House.*
9. *Rajasekar .S (2005) Computer Education and Educational Computing, Hyderabad: Neelkamal Publications.*

MHPSY 203 DISSERTATION

Students are required to submit a dissertation at the end of the year. The dissertation shall embody the record of original investigation under the guidance of a supervisor.

M.PHIL IN SOCIOLOGY (REGULAR)

Choice Based Credit System (CBCS)

Subject matter and Evaluating System

Norms, Rules and Regulations

1. PREAMBLE:

The Master of philosophy in Sociology (M.Phil) program is meant for candidates desirous of pursuing Research program in Sociology .

2. REGULATIONS:

The syllabus is for one year M.Phil Degree program under CBCS system which will be implemented from the academic year 2014 – 15 onwards.

3. ELIGIBITLITY FOR ADMISSION:

A Candidate shall be admitted to the M.Phil degree in Sociology if he / she produce satisfactory evidence to the effect that he/she has successfully completed Master's Degree in Sociology or its equivalent Degree approved by the syndicate of the Tamil Nadu Physical Education and Sports University, Chennai.

For securing admission to the M.Phil Program, candidates must have secured 55 % of marks in the respective PG Degree program.However, the minimum marks for the SC/ ST candidates would be 50 % . For all the candidates, who have completed their PG Degree on or before 1991,the minimum eligible marks for admission to M.Phil would be 50 % .

4. SCHEME OF SELECTION:

As Entrance test and interview would be administered for all the applicants, the performance in that would be taken into account along the marks scored in the PG program. The written Test would comprise objective Questions for 75 marks and the interview would carry 25 marks. The Rank list will be prepared accordingly.

5. COURSE OF STUDY :

M.Phil, Program shall be of duration of one Academic year with two semesters. A student should complete the M.Phil Program within three years after registration. The total working days of each year shall be 90 days inclusive of the period of the admission and examination etc., the medium of Instruction and examination shall be in English.

7. SEMESTER:

An academic year is apportioned into two semesters.

Odd Semester - July to November

Even Semester - December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days.

7. CHOICE BASED CREDIT SYSTEM (CBCS):

The CBCS in M.Phil, program would have the following components and the minimum credit requirements for each component to be completed in two semesters are:

Core Courses - 20 Credits

Dissertation - 08 Credits

VPP - 02 Credits

Total 30 Credits

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8. CREDIT DISTRIBUTION

FIRST SEMESTER

Paper Code	Paper Title	L	T	P	C
MPHSOC15101	Research Methodology & Statistics	5	0	0	5
MPHSOC 15102	Area of specialization Sociological Theories	5	0	0	5
	Total	**10**	**0**	**0**	**10**

SECOND SEMESTER

Paper Code	Paper Title	L	T	P	C
MPHSOC 15201	Area of Dissertation	5	0	0	5
MPHSOC 15202	Computer Operations Communication & Educational skills	5	0	0	5
MPHSOC 15203	Dissertation	0	0	6	6
MPHSOC 15204	Viva voce	0	0	2	2
MPHSOC 15205	VPP	0	0	2	2
	Total	**10**	**0**	**10**	**20**

Total: 4 Theory Papers + Dissertation + VPP

Total Credits for the Programme: 30

Distribution of Total credits

Semester	L	T	P	C
First	10	0	0	10
Second	10	0	10	20
Total	**20**	**0**	**10**	**30**

L- Lecture Hour T- Tutorial Hour P – Practical Hour C- Credits

9. ASSESSMENT

Assessment of the students is consisting of continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 40: 60.

10. CONTINUOUS INTERNAL ASSESSMENT (CIA)

The CIA marks shall be awarded based on the following:

Theory	Marks
Best Scores of two tests out of three tests 20	
Model Exam	10
Seminar/Assignment 10	
Total	40

11. END SEMESTER EXAMINATION (ESE)

Except in the case of project-work and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 60. Standard practical examination for 60 marks will be conducted by the external examiner.

12. EVALUATION

The following procedure will be followed for evaluation

a. The answer scripts are evaluated by both internal and external examiners (Double valuation)

b. If there is 10% difference between the two examiners, a third revaluation is conducted, which will be final

c) Theory papers : Duration Three Hours – External

Part A (10 x 1) - 10
Part B (5 x 4) - 20
Part C (3 x 10) - 30
---
60 marks
---

d) For a pass in each paper, the candidate is required to secure at least 50% in the semester Examinations.

13. THE AWARD OF GRADES IS AS FOLLOWS.

Marks	Grade	Description	Grade Points
90 and above	S	Superior	9.0 – 10.0
80 to 89	A	Very Good	8.0 – 8.9
70 to 79	B	Good	7.0 – 7.9
60 to 69	C	Very Fair	6.0 – 6.9
50 to 59	D	Satisfactory	5.0 - 5.9
Less than 50	F	Failure	

If a student has any grievance relating to his/her CIA, he/She may, within seven working days of the declaration of the Scores/thereof, prefer an appeal through his/her class Advisor to appear committee, which will consists of the HOD, class Advisor and course teacher. The Appeals committee will review the student's records work. Any appeal should be made along with an appeal fee of Rs.200/- per course /paper. The decision of the appeals committee shall be final.

Double valuation system will be adopted for ESE valuation and therefore revaluation is not permitted whereas re totaling can be done by paying a fee of Rs.300/- per paper. Within in 15 days from the publication of results.

14. SCHEME OF EXAMINATIONS:

MARKS DISTRIBUTION

FIRST SEMESTER

Paper Code	Paper Title	Internal	External	Total
MPHSOC 15101	Research Methodology & Statistics	40	60	100
MPHSOC 15102	**Area of specialization** Sociological Theories	40	60	100
Total		**80**	**120**	**200**

SECOND SEMESTER

Paper Code	Paper Title	Internal	External	Total
MPHSOC 15201	Area of dissertation	40	60	100
MPHSOC 15202	Computer Operations Communication & Educational skills (pedagogical skill includes practical Training in teaching)	40	60	100
MPHSOC 15203	Dissertation	25	75	100
MPHSOC 15204	Viva voce	-	50	50
MPHSOC 15205	VPP	50	-	50
	Total	**155**	**245**	**400**

Distribution of Total Marks

Semester	Marks			Credits
	Internal	External	Total	
First	80	120	200	10
Second	155	245	400	20
Total	**235**	**365**	**600**	**30**

MPHSOC 15101: RESEARCH METHODOLOGY AND STATISTICS

UNIT I

Research: criteria for locating and selecting research problems - subjects, variables – Hypothesis – Limitation – Delimitation – Review of related literature. Requirements for quality research and experimental control – Application of research findings for excellence in sports.

UNIT II

Research Design: Meaning, Significance and Criteria for selecting suitable research design: Quasi experiment – Cross sectional design – longitudinal design – Double blind placebo design – repeated measures design – rotated group design – Independent factorial design – mixed factorial design.

UNIT III

Research Laboratory: Methods of finding instrument, tester and subject reliability - Construction Standardization and adaptation of Sports Questionnaire. Sampling – Types of Sampling, sampling techniques – Tools of Data collection – Interview schedule – Survey Method – Mechanism of Writing Research Proposal - Mechanism of Writing Research Report – Synopsis – Abstract – Bibliography – Preliminary and End Pages.

UNIT IV

Introduction to statistics : Types, classification and basic concepts of statistics – measures of central tendency – measures of variability – Normal probability curve – properties of normal curve – Problems based on Normal curve – Testing of hypothesis – Problems based on t Test and Normal.

UNIT V

Need for analysis of variance : One way analysis of variance – Two way analysis of variance – Analysis of Covariance – Concepts or Correlation - Rank order correlation - Partial and Multiple Correlation – Biserial Correlation – Chi Square – Contingency Coefficient – Mann Whiteney U test – Kruskal Wallis H Test.

REFERENCES:

1. *Clarke David. H and Clarke H. Harrison (1984)* ***Research process in Physical Education*** *, New Jersey: Prentice Hall Inc.*
2. *Best, John W. and Kalm James, V. (1980)* ***Research in Education*** *, New Delhi: Prentice Hall of India.*
3. *Kothari C.R. (1985)* ***Research Methodology*** *2 nd revised ed., New Age International, Publisher; New Delhi.*

MPHSOC 15102: SOCIOLOGICAL THEORIES

UNIT I:

Sociological Theory: Definition of theories, Characteristics of Sociological Theory, Types: Functions of Theories.

UNIT II

Auguste Comte: Beginning of Sociology, Methods of Inquiry. The Law of Human progress - Hierarchy of Sciences - Social Statics and Dynamics

UNIT III

Herbert Spencer: The Evolutionary Doctrine – The Organic Analogy – Social Types: Militant and Industrial Societies.

UNIT IV

Dialectical Materialism – Economic determinism – Class Struggle – The Concept of Alienation – Theory of Social Change.

UNIT V

Emile Durkhem:- Social fact – The Sociology of Religion – Theory of Suicide – Division of Labour - Anomie

REFERENCE:

1. *Barnes, Harry Elmer "AN INTRODUCTION TO THE HISTORY OF SOCIOLOGY", Chicago, University of Chicago Press, 1948.*
2. *Coser, Lewis A. "MASTERS OF SOCIOLOGICAL THOUGHT" New York, Harcourt Brace Jovanovich, Inc., 1971.*
3. *Timasheff, Nicholas S. SOCIOLOGICAL THOERY – ITS NATURE & GROWTH", New York, Random House, 1967.*
4. *Nishet, Robert A. "THE SOCIOLOGICAL TRADITION", London, Heinemann, 1979.*
5. *Bogardus, Emory S. "THE DEVELOPMENT OF SOCIAL THOUGHT", Bombay, Vakils, Borrer and Simons Pvt. Ltd., 1960.*
6. *Aron, Raymond "MAIN CURRENTS IN SOCIOLOGICAL THOUGHT" Vol. 1&2, Hammondsworth, Middleses, Penguin Books, 1965.*
7. *Abel, Theodore "THE FOUNDATION OF SOCIOLOGICAL THEORY" Indian ed., Jaipur, Rawat Publications, 1980.*
8. *Abraham, Francis M. "MODERN SOCIOLOGICAL THEORY: AN INTRODUCTION "Delhi, Oxford University Press, 1982 .*

15201: AREA OF DISSERTATION

15202: COMPUTER OPERATIONS, COMMUNICATIONS AND EDUCATIONAL SKILLS

UNIT : I Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT : II Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create – insert – update – delete – select – commit – front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB

UNIT: III What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face to face interactions (situations) – Written – Letter Writing – Report W riting – Memo's – Note making - Agenda preparation.

UNIT :IV Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking, Pronunciation, structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT: V Pedagogy : Meaning, Theories of pedagogy (Benjamin Bloom, Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills of sex education – Integrading skill development, modernizing education and skill development – Basic and higher education : Issues and challenges.

References:

1. 'Soft skills', university of madras, Chennai
2. 'Communication skills', university of madras, Chennai
3. Mangal .S.K. (2002). Advanced Educational psychology, prentice hall of India, New Delhi
4. Sampath .K etal (1998) introduction to educational technology, sterling publishers, New Delhi.
5. keemar. K. (1997) Educational technology, New Age international publishers, New Delhi.
6. kuppusamy.B (1984). Advanced educational psychology, Sterling Publishers, New Delhi

COMPUTER OPERATIONS – SYLLABUS - PRACTICALS

1. **MS – WORD**

1. Create advertisement is MS WORD
2. To illustrate the concept of mail merging in word.
3. Document creation with scientific rotation
4. Test manipulation with scientific rotation
5. Table creation, table formatting and conversion.
6. Mail Merger and letter preparation
7. Drawing and Flow Chart.
8. Show the different effect for the given text in the document.
9. Create a table of employee and calculate the next salary.
10. Design a table with merge cells and split cells technique.

2. **SPREAD SHEET**

11. To create a Spread Sheet to analyze the marks of the students in a class and to create appropriate charts.
12. Charts in Spread Sheets
13. Formula and Formula Editor
14. Inclusion of objects, pictures and graphics protecting the document and sheet.
15. Sorting and import/ export features.
16. Create suitable chart to show the census data in Indian Sports.
17. Create a suitable chart to show the students average in the class.
18. Create an electronic spread sheet of marks, and find the total, average occurred in a calculation.
19. Generate the numbers vertically starting from 10 to 100 with step value 5.

3. **POWER POINT**

20. To create the presentation for the department using the power point.
21. Animation in Power point Presentation
22. Designing the Power point Presentation
23. Timing for the slides in Power point Presentation
24. Back ground designing in Power point Presentation
25. Designing the Power point Presentation using audio and Video.

4. **INTERNET LAB**

26. Browsing a Web Site.
27. Composing and Sending a Mail
28. Forwarding and replying to mails.
29. Downloading Articles / Web content.
30. Literature survey using search enquires

5. **DBMS LAB**

32. Creation of database table with constaints
33. Modification of data in a table.
34. 28 GUI applications using VB (Single calculator, dollar conversion etc)
35. Database Applications using VB (insert, update, delete).

REFERENCES:

1. Peter Norton, "Introduction to Computers", 6th Edition, Tata Mcgraw Hill.
2. Ashok N. Kamthane, "Computer Programming", Pearson Education India.
3. Groff Weinberg, "The complete Reference SQL", 2nd Edition, Tata Mcgraw Hill.
4. Bottm Special Edition using Microsoft Office 2007, Pearson Education India.
5. Gray W. Harson and James V Harson (1996) Data Base Management and Design, Prentice Hall
6. Jeffrey A Hotter, Mary B Prescolt, Fred R. Medadden (2002), Modern database Management, Prentice Hall.
7. Robert I T Futrell, Donald F. shafer Linda, (2002) Quality software project management Pearson Education, Asia.
8. Chandran S.S. (1985) Innovations in Teaching Learning Process, New Delhi : Vikas Publishing House.
9. Rajasekar .S (2005) Computer Education and Educational Computing, Hyderabad: Neelkamal Publications.

15203: DISSERTATION

Students are required to submit a dissertation at the end of the year. The dissertation shall embody the record of original investigation under the guidance of a supervisor.

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M.A., Sociology

Choice Based Credit System (CBCS)

REGULATIONS

The CBCS for the two years M.A. Degree program will be implemented from the academic year 2014-'15.

1. ELIGIBITLITY FOR ADMISSION:

A Candidate shall be admitted to the degree of Master of Arts (Sociology) only if he/she produces satisfactory evidence to the effect that he/she has successfully completed any degree (Bachelor of Arts or science) recognized by the syndicate of any university.

2. COURSE OF STUDY :

The normal duration of the M.A., Program shall be of four semesters. A student should complete the M.A Program within 5 years.

3. SEMESTERS: An Academic year is apportioned into two semesters.

Odd Semester - July to November

Even Semester - December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days.

4. CHOICE BASED CREDIT SYSTEM (CBCS):

The CBCS in M.A., program would have the following four components and the minimum credit requirements for each component to be completed in two years are:

1. Core Courses - 43 Credits
2. Elective Courses - 18 (6x3 Credits)
3. Project - 09
5. VPP - 02 Credits

Total 72 Credits

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5. COURSE WEIGHT:

Courses will be designed with weightage of two/three/four credits, depending upon the content, duration and specialization.

6. CREDIT DISTRIBUTION:

Four – Semester Post Graduate Degree program M.A., Sociology (Two Years)

FIRST SEMESTER

Paper Code	Paper Title	L	T	P	Credits
MASOC101	Fundamentals of sociology	4	0	0	4
MASOC102	Indian Society	4	0	0	4
MASOC103	Research Methodology	5	0	0	5
Electives					
MASOC104	Social Problems & Issues	3	0	0	3
MASOC105	Medical Sociology	3	0	0	3

Total **19**

SECOND SEMESTER

Paper Code	Paper Title	L	T	P	Credits
MASOC201	Sociological Theories-I	4	0	0	4
MASOC202	Industrial Sociology	4	0	0	4
MASOC203	Social statistics & Computer applications	5	0	0	5
Electives					
MASOC204	a) Gender & Society	3	0	0	3
MSPSY204A	b) School Psychology	3	0	0	3

Total **19**

THIRD SEMESTER

Paper Code	Paper Title	L	T	P	Credits
MASOC301	Contemporary Sociological theories	4	0	0	4
MASOC302	Environmental Sociology	4	0	0	4
MASOC303	Social Demography	5	0	0	5
Electives					
MASOC304	a) Urban Sociology	3	0	0	3
	b) Stress Management	3	0	0	3

Total 19

FOURTH SEMESTER

Paper Code	Paper Title	L	T	P	Credits
MA SOC 401	Social Gerontology	4	0	0	4
MA SOC 402	Village Placement Program	2	0	0	2
MA SOC 403	Project Work	9	0	0	9

Total 15

7. CREDIT REQUIREMENT FOR TWO YEARS M.A., PROGRAM

1. Core Courses - Theory Minimum – 43 credits

2. Elective Courses - Minimum 18 credits (6x3credits)

3. Project - 09 credits

4. VPP - 02 Credits

Total - 72 Credits

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8. ASSESSMENT

Theory

Assessment of the student's attainment will consist of continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 25:75.

Continuous Internal Assessment (CIA)

b) The CIA marks shall be awarded based on the following:

Best Scores of two tests out of three tests - 18

Seminar /Assignment - 5

Attendance - 2

25

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c) End Semester Examination (ESE)

Except in the case of project-work and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 75.

d) Practical

Project - 100 Marks

VPP - 100 Marks

e) Marks for Attendance

80 percent or less - 0

81 - 90 -1

90 - 100 - 2

9. EVALUAT ION

The following procedure will be carried out for evaluation

d) The answer scripts are evaluated by both internal and external examiners (Double valuation)

e) If there is 10% difference between the two examiners, a third revaluation is conducted, which will be final.

f) The Question paper pattern under CBCS will include 2 marks, 6 marks and 15 marks questions.

PART A – 10 Questions,

PART B – Question – 1(a) (or) Question – 1(b)

PART C – Question – 1(a) (or) Question – 1(b)

All questions carry equal marks.

For a pass in each paper, the candidate is required to secure at least 50% in the end semester Examinations (i.e.) 10 in Internal and 40 in External compulsory.

A Student will be issued, Hall ticket only if one produces "No Dues" certificates from the concerned department, the laboratory, the Registrar's Office and the Library.

10. The Award of Grades is as Follows.

Row Scores	Grade	Description	Grade Points
90 and above	S	Superior	9.0 – 10.0
80 to 89	A	Very Good	8.0 – 8.9
70 to 79	B	Good	7.0 – 7.9
60 to 69	C	Very Fair	6.0 – 6.9
50 to 59	D	Satisf actory	5.0 - 5.9
Less than 50	F	Failure	

If a student has any grievance relating to his/her CIA, he/she may, within three working days of the declaration of the Scores/thereof, prefer an appeal through his/her class Advisor to appear in front of the committee, which will consists of the HOD, class Advisor and course teacher. The Appeals committee will review/pursue the student's records work. Any appeal should be made along with an appeal fee of Rs.200/- per course /paper. The decision of the appeals committee shall be final.

Double valuation system will be adopted for ESE valuation and therefore revaluation is not permitted whereas re totaling can be done by paying a fee of Rs.300/- per paper.

11. Village Placement Program (VPP):

Village placement program will be organized for 4 days in the third semester. For all Humanity Students it will be organized immediately after ICIA is over.

12. Assessment of Students performance in VPP:

The number of credits allotted for VPP camp will be two. The marks allotted for each camp will be 100. Each student participating in the camp will be evaluated for 100 marks. The criteria for evaluation of VPP will be as follows.

Criteria	**Maximum Marks**
1. Interaction with villages/ Spotting the Talents	20
2. Participation/Attitude towards work	20
3. Participation in interaction & Discussion	20
4. Organizing and decision-making ability /Nurturing	20
5. Report writing/ability to work in a team/ Training and Coaching	20
Total -	100

13. SCHEME OF EXAMINATIONS MARKS DISTRIBUTION:

FIRST SEMESTER

Paper Code	**Paper Title**	**Marks**	**Credits**	**Internal**	**External**	**Total**
MASOC101	Fundamentals of sociology	25	75	100	4	
MASOC102	Indian Society	25	75	100	4	
MASOC103	Research Methodology	25	75	100	5	
Electives						
MASOC104	Social Problems & Issues	25	75	100	3	
MASOC105	Medical Sociology	25	75	100	3	
	Total	**125**	**375**	**500**	**19**	

SECOND SEMESTER

Paper Code	Paper title	Marks	Credits	Internal	External	Total
MASOC201	Sociological Theories	25	75	100	4	
MASOC202	Industrial Sociology	25	75	100	4	
MASOC203	Social statistics & Computer applications	25	75	100	5	
Electives						
MASOC204	Gender & Society	25	75	100	3	
MSPSY204A	School Psychology	25	75	100	3	
			Total	**125**	**375**	**500** **19**

THIRD SEMESTER

Paper Code	Paper title	Marks	Credits	Internal	External	Total
MASOC301	Contemporary Sociological theories	25	75	100	4	
MASOC302	Environmental Sociology	25	75	100	4	
MASOC303	Social Demography	25	75	100	5	
Electives						
MASOC304	Urban Sociology	25	75	100	3	
Stress Management		25	75	100	3	
			Total	**125**	**375**	**500** **19**

FOURTH SEMESTER

Paper Code	Paper title	Marks	Credits	Internal	External	Total
MA SOC401	Social Gerontology	25	75	100	4	
MA SOC402	Village Placement Program	100	-	100	2	
MA SOC403	Project Work	50	150	200	9	
			Total	**175**	**225**	**400** **15**

Total: 16 Theory Papers + Thesis + VPP

Total Credits for the Program: 72

Distribution of Total Marks

Semester	Marks			Credits
	Internal	External	Total	
First	125	375	500	19
Second	125	375	500	19
Third	125	375	500	19
Fourth	175	225	400	15
Total	**550**	**1350**	**1900**	**72**

TAMIL NADU PHYSICAL EDUCATI ON AND SPORTS UNIVERSITY, CHENNAI

Sem	Paper	Title of the course	Subject code	credit			
				UE	IA	TOTAL	C
I	1	Fundamentals of sociology	HC	MASOC101	75	25	100	4
	2	Indian Society	HC	MASOC102	75	25	100	4
	3	Research Methodology	HC	MASOC103	75	25	100	5
	4	Social Problems & Issues	SC	MASOC104	75	25	100	3
	5	Medical Sociology	SC	MASOC105	75	25	100	3
II	1	Sociological Theories	HC	MASOC201	75	25	100	4
	2	Industrial Sociology	HC	MASOC202	75	25	100	4
	3	Social statistics & Computer applications	HC	MASOC203	75	25	100	5
	4	Gender and Society	SC	MASOC204	75	25	100	3
	5	School Psychology	SC	MSPSY204A	75	25	100	3
III	1	Contemporary Sociological theories	HC	MASOC301	75	25	100	4
	2	Environmental Sociology	HC	MASOC302	75	25	100	4
	3	Social Demography	HC	MASOC303	75	25	100	5
	4	Urban Sociology	HC	MASOC304	75	25	100	3
	5	Stress Management	SC		75	25	100	3
IV	1	Social Gerontology	HC	MASOC401	75	25	100	4
	2	Project Work	HC	MASOC402	150	50	200	9

FIRST SEMESTER

Paper Code Paper Title

MASOC101 Fundamentals of sociology

MASOC102 Indian Society

MASOC103 Research Methodology

Electives

MASOC104 Social Problems & Issues

MASOC105 Medical Sociology

MASOC101: FUNDAMENTALS OF SOCIOLOGY

UNIT I **Introduction:** Emergence of sociology, Relationship of sociology with Economics, History and Anthropology

UNIT II **Basic concepts** : Society, Group, Community, Association, Institution, Culture, Norms, and Values.

UNIT III **Social Processes:** Associative Process (Cooperation, Accommodation, Assimilation); Dissociative process (Conflict, Competition)

UNIT IV **Social Control** : Meaning, Purpose of Social control- Instruments of Social Control - Folkways- Mores- Laws and Morals- Agencies of Social control.

UNIT V **Social Stratification** : Theories of social stratification, Forms of Stratification.

REFERENCE:

1. *Bierstedt, R. 1970.The Social Order, New Delhi: Tata McGraw Hill.*
2. *Fiehter, J.H. 1971. Sociology (2 nd Edn). London: The University of Chicago Press.*
3. *Bottomore, T.B. 1972 Sociology- A Guide to Literature and Problems, New Delhi, Creavge Allen and Unw in.*
4. *Anderson, W.A. and Parker, F.B. 1964. Sociology: Its Organization and Operation, New York, Van Noshaind Company.*
5. *Ogburn-W.F. and Nimkoff, M.F A 1964.Hand Book Of Sociology London: Routledge and Keganpual.*
6. *Poucek, J.H, 1965. Social Control, (Second Edn.) New Delhi: Affiliated East West Press.*
7. *Inkless, Alex. 1987. What is Sociology, New Delhi: Prentice Hall.*
8. *Giddens A. 1989. Sociology, Cambridge: Polity Press.*
9. *Tumin, Melvin M. 1969.Social Stratification, New Delhi: Prentice Hall.*
10. *Harlambos J. 1988.Introduction to Sociology, New Delhi: Oxford University Press.*

MASOC102: INDIAN SOCIETY

UNIT I - Hindu Social Organization; Purusharthas; Varnashramas.

UNIT II - Approaches to study the Indian Society :-
- Indological / Textual perspectives : G. S. Ghurye, Louis Dumont
- Structural functional perspectives : M. N. Srinivas, S. C. Dube
- Marxian Perspectives - : D. P. Mukherjee, A. R. Desai
- Subaltern Perspectives : B.R. Ambedkar, David Hardiman.

UNIT III - Caste: Origin of caste; Recent changes in caste system; Jajmani System; Dominant caste; Caste and Class; Caste and Politics.

UNIT IV - Family: Meaning; Forms of Family; Changes in the Indian Family Structure

UNIT V - Marriage and Kinship:
- Forms of Marriage - Marriage among Hindus, Christians and Muslims in India – Kinship – meaning, terms and usages, Rules of residence, descent and inheritance.

REFERENCE:

1. *Mandelbum, D.G.1990. Society in India, Berkeley: University of California Press, Vol. I parts 24 & 4.*

2. *Singh, Yogendra. 1983. Modernization of Indian Tradition: A Systematic Study of Social Change, New Delhi:Thompson Press, 1983.*

3. *Srinivas, M.N.1962. Caste in Modern India and other Essays, Bombay: Asia Publishing House.*

4. *Dumont, Louis 1970. Homo Hierarchicus, Paladin, Granada Publishing Ltd.*

5. *Dhanagare, D.N. 1999. Themes and Perspectives in Indian Sociology, Jaipur: Rawat Publications,*

6. *Beteille, Andre.2002. Sociology: Essays on Approach and Method, New Delhi: OUP.*

7. *Deshpande, Satish. 2004. Contemporary India: Sociological Perspectives, New Delhi: Sage Publications,*

8. *Shankar Rao – Sociology of Indian Society.*

MASOC 103: RESEARCH METHODOLOGY

UNIT I Scientific social research: c method, Basic elements, Problems of objectivity. Formulation of problem in social research, Major steps in social research

UNIT II Hypothesis: Meaning, problems in for mulating hypothesis, Types of Hypothesis, Characteristics of Usable hypothesis; Role of hypothesis in social research.

UNIT III Research Design: Meaning, Types: Exploratory, Descriptive, Experimental

UNIT IV Sampling: Meaning; Census and Sampling method; Probability, Non Probability Sampling methods, Estimating Sampling Error, problem of sample size

UNIT V Techniques of data collection and analysis: Observation, Interview, Interview Guide, Questionnaire, Case study, Content analysis; Data analysis and inter pretation.

REFERENCE:

1. *Goode, William J and P. K .Hatt 1952. Methods in Social Research, New Delhi: McG raw -Hill.*

2.Young, P.V.1966. Scientific Social Surveys and Research, New Deli: Prentice Hall

3. Wilkinson, T.S and P.L Bhandarkar. 1984. Methods and Techniques of Social Research, Bombay: Himalaya Publishing House.

4.Galtung, John.1967. Theory and Methods of Social Research, London: Allen & Unwin

5.Silverman, David.1985. Qualitative Methodology and Sociology, Gow er Vermont

MASOC 104: SOCIAL PROBLEMS & ISSUES

UNIT I Social Pr oblems, Theoretical approaches to Social Problems; Social Problems and Disorganization.

UNIT II Social Deviance - Cr ime – Meaning – Types – Theories of Crime – Confinement and Correction of Criminals. Juvenile Delinquency – Meaning – Types – Causes – Characteristics – Factors Involved – Methods of treating delinquents- Corruption

UNIT III Poverty & Unemployment-Conceptual debate-causes-Rural poverty-Effective measures in poverty alleviation-Unemployment in India-Types-Causes-Consequences-Remedies

UNIT IV Terrorism – Characteristics – Objective – Origin and Development – Terrorism in India – Terr orism in other countries – Theoretical explanation of - Terrorism – Sociology of Terrorism.

UNIT V Female foeticide, Female infanticide and Domestic Violence
-Female foeticide –Female infanticide - Causes and Consequences - Possible Solution
- Domestic Violence-Causes-Effects of Domestic Violence

REFERENCES:

1. *Robert K. Merton and Robert Nisbet, (ed.) Contemporary social problems, Harcourt Brace, New York. 1971*
2. *Madan G.R. Indian Social problems Allied Publisher, New Delhi.1976*
3. *Ahuja Ram. Social problems in IndiaRawat Publication, New Delhi. 1999*
4. *Elliot, Mabel A and Merrill, Francis E., Social Disorganization, Harper and Brothers, New York, 1950*
5. *Gurr, Ted Robert, Why Men Rebel, Princeton: Princeton University Press, 1970*

MASOC 105 MEDICAL SOCIOLOGY

UNIT I Emerging relationship between medicine & sociology-Definition, scope & aims of medical sociology-Concept & Dimensions of Health

UNIT II Basic concepts- Disease, Illness, Sickness- The Sick Role- Social etiology and social epidemiology and its variables- Preventive and social medicine

UNIT III Causes of Illness, Modes of Therapy & systems of Medicine – Social causes of illness:Attitudes, Beliefs & Values associated with diseases and illness-Mode of therapy: Curative, Preventive and rehabilitative- System of Medicine in India: Ayurveda, Unani, Allopathy, Homeopathy and their different approaches to health

UNIT IV Hospital as a Social Organization- Meaning & function of Hospital- Types of Hospital : General, Specialty, Sanatoria, Dispensaries, teaching & Corporate Hospitals- Interpersonal relationship in hospital settings: Doctors, Nurses, Paramedical & their relationship with Patients

UNIT V The State & Health : Health Problems in India :Mental disorder, Aging, Reproductive Health – Health Policy & Programmes in India – Ethical Issues in Medical and Health care

REFERENCES:

1. *Cockerham William C. Medical Sociology, Prentice Hall, N.J.1978*
2. *Howard E Freeman /Soilevine ,Handbook of Medical Sociology ,N.J*
3. *Park & Park, Preventive & Social Medicine*
4. *Prabhakaran C.N. Preventive and Social Medicine, Jaypee Brothers, Medical Publishers, 2004*

SECOND SEMESTER

Paper Code
Paper title

MASOC201 Sociological Theories

MASOC202 Industrial Sociology

MASOC203 Social statistics & Computer applications

Electives

MASOC204 Gender & Society

MSPSY204A School Psychology

MASOC 201: SOCIOLOGICAL THEORIES

UNIT I	AUGUSTE COMTE: The Law of Human Progress; Hierarchy of Sciences. Social Static and Dynamics.
UNIT II	EMILE DURKHEIM: Sociology as science; Theory on suicide; Division of labour; Sociology of religion..
UNIT III	HERBERT SPENCER: The Evolutionary Doctr ine; Organic Analogy
UNIT IV	KARL MARX: Historical materialism; Class and class str uggle in capitalist society; Alienation;.
UNIT V	MAX WEBER: Protestant Ethics and Spirit of capitalism; Ideal types; Social Action. Power, Authority and Bur eaucracy.

REFERENCES:

1. *Barnes, Harry Elmer "ANINTRODUCTIONTOTHEHISTORYOFSOCIOLOGY", Chicago, University of Chicago Press, 1948.*

2. *Coser, Lew is A. "MASTERS OF SOCIOLOGICAL THOUGHT", New York, Harcourt Brace Jovanovich, Inc., 1971.*

3. *Timasheff, Nicholas S. "SOCIOLOGICAL THEORY - ITS NATURE & GROWTH", New York, Random House, 1967.*

4. *Nishet, Robert A. "THE SOCIOLOGICAL TRADITION", London, Heinemann, 1979.*

5. *Bogardus, Emory S. "THE DEVELOPMENT OF SOCIAL THOUGHT", Bombay, Vakils, Borrer and Simons Pvt. Ltd., 1960.*

6. *Aron, Raymond "MAIN CURRENTS IN SOCIOLOGICAL THOUGHT" Vol. 1 & 2, Hammondsworth, Middleses, Penguin Books, 1965.*

7. *Sorokin Pitrim "CONTEMPORARY SOCIOLOGICAL THEORIES". Indian Ed. New Delhi, Kalyani Publishers, 1978.*

MASOC 202: INDUSTRIAL SOCI OLOGY

UNIT I INDUSTRIAL SOCIOLOGY: Nature and Scope of Industrial Sociology - Development of Industrial Sociology.

UNIT II RISE and DEVELOPMENT OF INDUSTRY: Ear ly Industrialism - Types of Productive Systems - The Manorial or Feudal system - The guild system - The domestic or putting-out system - and the factory system - Characteristics of the factory system - causes and Consequences of industrialization.

UNIT III INDUSTRIAL MANAGEMENT: The Managerial Structure - Line and Staff organizations - Functions of Line and Staff - Supervisor s - White collar Workers - Blue collar Workers and specialists.

UNIT IV INDUSTRIAL DISPUTES: Meaning - Forms: Strike and Lock-out - Types of Strike- causes of industrial disputes (with reference to India) - Machinery of prevention - Joint consultative machinery - Works committee - Code of discipline - Standing orders - grievance procedure - Settlement of Industrial disputes - Machinery (with reference to India) - Conciliation machinery - Arbitration machinery

UNIT V LABOUR WELFARE: Scope of Labour welfare - Evolution of Labour welfar e - Labour welfare in India, Government and trade unions.

REFERENCES:

1. *GISBERT PASCAL, Fundamentals of Industrial Sociology, Tata Mc. Graw Hill Publishing Co., New Delhi, 1972.*
2. *SCHNEIDER ENGENO. V, Industrial Sociology 2nd Edition, Mc. Graw Hill Publishing Co., New Delhi, 1979.*
3. *MAMORIA. C.B. and MAMORIA. S, Dynamics of Industrial Relations In India.*
4. *SINHA. G.P. and P.R.N. SINHA, Industrial Relations and Labour Legislations, New Delhi, Oxford and IBH Publishing Co., 1977.*
5. *TYAGI, B.P.,Labour Economics and Social Welfare, Jai Prakashnath and Co., Meerut, 1980.*
6. *MEHROTRA. S.N.,Labour Problems In India, 3rd Revised Edition, S. Chand and Co., New Delhi, 1981..RM 72*

MASOC 203: SOCIAL STATISTICS AND COMPUTER APPLICATION

UNIT I Introduction to Statistics in Sociology; Basic concepts; Linkage between statistics and sociology; Measuring Variables; Measurement problems in sociology; Levels of measurement ; Reliability and validity in measurement.

UNIT II Descriptive Statistics; Bivariate distributions; Conditional distributions – methods for setting up and examining tables; characteristics of an association: existence, direction, nature and strength; measures of association; symmetric and asymmetric measures of association.

UNIT III Measures of association for nominal, ordinal, and interval variables; Statistical tests: Chi-square, t Test, Analysis of variance, scatter plot; relationship between correlation and regression; Regression analysis.

UNIT IV Computers – various parts of the computers and accessories; Word Pr ocessing; idea of files; directories; creating and saving documents; formatting and preparing saving the document.

UNIT V SPSS package – advanced usage – searching for data sources in the World Wide Web – Accessing Indian Census Data – and other public domain data base around the world such as UNDP, US Census.

REFERENCES:

1.Loether, Herman J., and Donald G. McTavish, Descriptive and Inferential Statistics: An Introduction, (Fourth Edition), Singapore, Allyn and Bacon, 1993.

2. De Vaus, David, Analysing Social Science Data: 50 Key Problems in Data Analysis **,***New Delhi, Sage Publications, 2002.*

3. Kinnear, Paul R., and Colin D. Gray, SPSS 12 Made Simple, New York, Psychology Press, 2004.

MASOC 204: GENDER AND SOCIETY

UNIT I The social construction of Gender: Defining Sex and Gender - Gender and Biology - Gender identity and self image - Socialization and Gender roles – Gender inequality - Sex Prefer ence – Sex Ratio.

UNIT II Theoretical Perspectives: - Liberal Feminism - Radical Feminism , – Marxist Feminism, –Socialist Feminism.

UNIT III Women in Family and Marriage: Gender Role Division – Invisible Role – Dual Role – Role Conflict and Coping Mechanism – Network and support for Wor king and Non–wor king Women - Gender and Health.

UNIT IV Women and Development - Women's work and Technology – Impact of Development Policies, Liberalization and Globalization on Women - The role of women in Development – Sustainable Development

UNIT V Empowerment of Women: Concept of Empowerment – Indicators of Empowerment – Facilitating and constraining factors of Empowerment.

REFERENCES:

1. *Myers, K.A., Anderson, C.D and Risman, B.J. 1998. Feminist Foundations, Sage Publications, London, United Kingdom.*
2. *Whyte, R.O and Whyte, P. 1982. The Women of Rural Asia: Westview Press, Inc, Colardo.*
3. *Altekar, A.S. 1983. The position of Women in Hindu civilization, Delhi: Motilal Banarasidass, Second Edition.*
4. *Desai, N and M. Krishnaraj. 1987. Women and Society in India. Delhi: Ajantha.*
5. *Forbes, G. 1998. Women in Modern India. New Delhi: Cambridge University Press.*
6. *Maccoby, E and Jacklin,C. 1975. The Psychology of Sex Differences, Stanford: Stanford University Press.*
7. *Sharmila Rege (ed), 2003. Sociology of Gender, Sage Publications, London,*
8. *MoCormark, C and M. Strathern. 1980. Nature, Culture and Gender, Cambridge: Cambridge University Press.*
9. *Oakely, A. 1972. Sex, Gender and Society. New York, Harper and Row.*
10. *Antony Giddens. Sociology, Cambridge, Polity Press*

MSPSY204A SCHOOL PSYCHOLOGY – Electives

Unit 1: Introduction : Class room behaviour in school setting - Social interaction between teacher and child - Influence of peer group - conformity and non-conformity in schools - nature of communication - interaction analysis in communication - social learning and r ole models - friendship patterns in the classroom and sociometry scale.

Unit 2: Class control and management : Class control and management - defining problem behaviour - behaviour modification techniques in classroom - merits and drawbacks of behaviour modification techniques - group behaviour problems - School refusal problems - Use of punishment and reinforcement for class room management

Unit 3: Educational guidance and counseling : Educational guidance and counselling - counselling in school - The problem of confidentiality -The importance of sympathy - The Counselling process - Categorizing the child's problem - The role of the counsellor - Problems faced by the counsellor.

Unit 4: Vocational Guidance : Vocational Guidance - developmental Stages in Career Choice – Steps in car eer decision making – Car eer counselling - The role of Counsellor in Vocational guidance - sex education for moral development and appropriate social behaviour -role of teacher as an applied psychologist

Unit 5: Skill development : Skill development - study skills development - Oral presentation skills - Written communication skills - Assertiveness skill development - Goal setting skills - Positive thinking skills - Techniques of creative thinking.

References:

1. *Think like a Winner by Walter Doyle Staples. UBPSD, New Delhi 1996.*
2. *Psychology for Teachers by David Fontana, 3rd Ed. Palgrave: UK 1995*
3. *Modern Applied Psychology by Arnold P. Goldstein and Leonard Krasner.Pergamon Press, Inc. New York 1989.*

THIRD SEMESTER

Paper Code Paper title

MASOC301 Contemporary Sociological theories

MASOC302 Environmental Sociology

MASOC303 Social Demography

MASOC304 Urban Sociology

304A Stress Management

MASOC301: CONTEMPOARARY SOCIOLOGICAL THEORIES

UNIT I Functionalism :- Parsons, Merton

UNIT II Structuralism: - Radcliffe Brown, Levis Straws.

UNIT III Conflict: - Lewis Coser, Randall Collins.

UNIT IV Symbolic Interactionism :- G. H. Mead, Blumer.

UNIT V Ethnomethodology and Phenomenology: - Alfred Schuttz, Peter Berger.

REFERENCES:

1. *Abraham, M Francis. 1988. Modern Sociological Theory, Delhi: OUP*
2. *Adams, Bert N. Sociological Theory 2001.New Delhi: Sage Publications*
3. *Calhoun, Craig, et al. (eds.) Classical Sociological Theory, Blakwell Publishers*
4. *Ritzer, George 2000. Sociological Theory, New York: McGraw Hill*
5. *The Polity Reader in Social Theory, 2002. Polity Press.*

MASOC 302: ENVIRONMENTAL SOCIOLOGY

UNIT I Environmental Sociology, Nature and Scope, Importance of Environmental Sociology

UNIT II Environment and Society: Population, organization, environment and technology. Poverty and environment.

UNIT III Gender and Environment – Eco-feminism - Women and water resource management.

UNIT IV Environment and Health: Environmental deterioration and health problems, environmental degradation and diseases.

UNIT V Environmental problems: Land, Air, Water – Deforestation and consequences - Environmental protection, Environmental laws in India.

REFERENCES:

1. *John A.Hannigan, Environmental Sociology, Routedge, London, 1995*

2. *RamachandraGuha (Ed), Social Ecology, Oxford University Press, Bombay, 1994.*

3. *Carolyn Merchant (Ed), Ecology, Key concepts in critical theory, Rawat Publications, New Delhi, 1996.*

MASOC 303: SOCIAL DEMOGRAPHY

UNIT I Introduction to Social Demography: Definition – Scope – Sources of Demographic Data: Census, Vital Statistics.

UNIT II Demographic Perspectives: The Malthusian Perspective – Marxist Perspective – NeoMarxist Perspective – Optimum Population Theory – Demographic Transition Theory.

UNIT III Fertility Concepts and Measurements: Concept, Measuring Fertility: Crude birth rate, General fertility rate, Age-specific fertility rate, Total fertility rate, Cross reproduction rate, Net reproduction rate, Theories of fertility-Determinants of fertility, Fertility Influencing Policies.

UNIT IV Mortality Concepts and Measurements: Components of Mortality-Measuring Mortality: Crude death rate, Age-specific death rate, Determinants of Mortality, – Mortality Influencing Policies.

UNIT V Migration: Definition-Measuring migration-Types of Migration: Internal Migration & International migration- Factors for Migration- Theories of Migration- Consequences of Migration.

REFERENCES:

1 Asha Bhende& Tara Kanitkar, Principles of Population Studies, Himalaya Publishing House, Bombay 2003.

2. *Weeks, John R, `Population: An Introduction to Concepts and Issues', Belmont, California: Wadsworth, 1977.*

3. *Nam, Charles B, `Population and Society', Boston: Houghton Mifflin, 1968.*

4. *Hawthorn, Geoffrey, `The Sociology of Fertility', London, Collier – Macmillan, 1970.*

5. *Heer, David M., `Society and Population' Englewood Cliffs, Prentice Hall, 1975*

6. *Lassande, Louise, Coping with Population Challenges, London, Earthscan,1997.*

7. *Massey, Douglas et al., "Theories of International Migration," Population and Development Review 19:3, 1993 (available on-line through jstor)*

MASOC 304: URBAN SOCIOLOGY

UNIT I Urban Sociology – Definition, Nature, Scope, Importance of Urban Sociology, Characteristic features of Urban Society.

UNIT II Urbanization – Meaning, Factors of Urbanization, Social consequences of Urbanization, Urbanism as a way of life.

UNIT III Urban Sociological Theories – Ferdinand Tonnies, Simmel Redfield and Louis Wirth

UNIT IV Urban Social problems – Slums, Housing Problems, Environmental Pollution, Urban Poverty, Unemployment, Crime.

UNIT V Urban planning – Fundamentals of Urban Planning and Scope of Urban Planning Relevance of Sociology in Urban planning, Attitude of Urban planners and Social Change. Urban Agglomeration.

REFERENCES:

1. *Quinn J.A. (1955). Urban Sociology, New Delhi: S Chand & Co.,*

2. Abrahimson, M (1976). Urban Sociology, Englewood: Prentice Hall.

3. Ronnan, Paddison (2001). Handbook of Urban Studies, India: Sage.

4. Sawders, Peter (1981). Social theory and Urban Question, Hutchionson.

5. Bose Ashish. (1978). Studies in India Urbanization, New Delhi: McGraw Hill.

6. Bharaswaj, R.K. (1974). Urban Development in India. National Publishing House.

7. Gold Harry. (1982). Sociology of Urban life. Englewood Chiff: Prentice Hall.

8. Colling Worth, J.B. (1972). Problems of Urban Society Vol. 2., George and Unw in Ltd.

STRESS MANAGEMENT

UNIT I

Understanding Stress - Meaning – Symptoms – Works Related Stress –Individual Stress – Reducing Stress – Burnout.

UNIT II

Common Stress Factor and Career Plateauing - Time Management – Techniques – Importance of planning the day – Time management schedule – Developing concentration – Organizing the Work Area – Prioritizing –Beginning at the start – Techniques for conquering procrastination – Sensible delegation – Taking the right breaks – Learning to say 'No'.

UNIT III

Crisis Management - Implications – People issues – Environmental issues – Psychological fall outs – Learning to keep calm – Preventing interruptions – Controlling crisis – Importance of good communication – Taking advantage of crisis – Pushing new ideas – Empowerment.

UNIT IV

Work Place Humour - Developing a sense of Humour – Learning to laugh –Role of group cohesion and team spirit – Using humour at work – Reducing conflicts with humour.

UNIT V

Self Development - Improving Personality – Leading with Integrity – Enhancing Creativity – Effective decision Making – Sensible Communication – The Listening Game – Managing Self – Meditation for peace – Yoga for Life.

Reference Books:

1. *Cooper, Managing Stress, Sage, 2011.*
2. *Waltschafer, Stress Management ,Cengage Learning, 4 th Edition 2009.*
3. *Jeff Davidson, Managing Stress, Prentice Hall of India, New Delhi, 2012.*
4. *Juan R. Alascal, Brucata, Laurel Brucata, Daisy Chauhan. Stress Mastery- The art of coping gracefully . Pearson, 2012.*
5. *Argyle. The Psychology of Happiness. Tata McGraw Hill. 2012.*
6. *Bartlet. Stress – Perspectives & Process. Tata McGraw Hill. 2012.*

FOURTH SEMESTER

Paper Code	Paper Title
MA SOC401	Social Gerontology
MA SOC402	Village Placement Program
MA SOC403	Project Work

MA SOC 401 SOCIAL GERONTOLOGY

UNIT I **Sociology of Aging** – Definition Scope and significance of Sociology of Aging. Trends of increasing aging population in different societies.

UNIT II **Theoretical Perspectives** – Biological, Psychological and Sociological perspectives on aging

UNIT III **Aging in different societies** - Concepts of age grades and the aged in different societies e.g. tribal, traditional and modern aged people, their status and the treatment which they get in the traditional Hindu society.

UNIT IV **Problems of Aged** - Problems of elderly people - Economic, Psychological and Physical Problems of coping with aging for - retired salaried people and aged people in unorganized daily wage earning sector and farming sector

UNIT V **Government Policies** - Policies of the government with regard to aged salaried people from government and non-government sector, farming sectors and unorganized daily wage earners' sectors Support systems needed for elderly at community level, at family level and at the state level. Old Age Home

REFERENCES:

1. *Vinod Kumar (1996) (ed.); Aging Indian Perspective and Global Scenario, New Delhi: All India Institute of Medical Sciences.*
2. *Proceedings of the United Nations Round Table on the "Ageing of Asian Populations", Bangkok – 1994*
3. *Alfred de Soza; Walter Fernandes (1982) (eds.); Ageing in South Asia: Theoretical Issues and Policy Implications: New Delhi : Indian Social Institute.*
4. *Indira Jai Prakash (1991) (ed.); Quality Aging : Collected papers aranasi:Association of Gerontology.*
5. *P. K. Dhillon (1992) Psycho-Social Aspects of Ageing in India, New Delhi: Concept Publishing Company.*

MA SOC402: VILLAGE PLACEMENT PROGRAM

MA SOC 403: PROJECT WORK

Students are required to submit a PROJECT at the end of the year. The Project shall embody the record of original investi gation under the guidance of a supervisor.

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TAML NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

CHENNAI – 600 127

CURRICULUM AND SYLLABI

FOR

MASTER OF PHILOSOPHY IN SPORTS MANAGEMENT

(FULL TIME)

DEPARTMENT OF SPORTS MANAGEMENT AND SPORTS PSYCHOLOGY & SOCIOLOGY

TAML NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY,

CHENNAI – 600 127

Department of Sports Management and Sports Psychology and Sociology

Curriculum and Syllabus for Master of Philosophy in Sports Management – Regular Mode under Choice Based Credit System (CBCS)

Regulations:

The CBCS for the one year M.Phil Degree Programme in Sports Management is implemented from the Academic Year 2014-2015.

1. Duration and Pattern

The M.Phil.Programme in Sports Management is of one year duration, offered under Semester Pattern, with two Semesters in the year.

2. Eligibility

A candidate with Post Graduate Degree in Sports Management, Business Administration, Commerce, Bank Management, Corporate Secretaryship or any related discipline are eligible to apply.

The minimum eligibility criterion for marks in PG degree is:

- 50% of marks for SC/ ST/ Physically or Visually challenged candidates
- 55% of marks for all others

3. Mode of Selection

A candidate eligible must take up the Entrance Examination conducted commonly for all candidates by the University.

Ranking of candidates is based on the marks obtained in the Entrance Examination and the Qualifying PG degree marks with 50:50 weightage. Provisional selection is done adopting community quota as per guidelines of the State Government.

4. Credit Distribution

First Semester					
Code	**Subject Name**	**Internal**	**External**	**Total**	**Credits**
1.1	**Business Research Methods**	**40**	**60**	**100**	**5**
1.2	**Functional Ares of Management**	**40**	**60**	**100**	**5**
Second Semester					
2.1	**Computer Operations, Communication & Educational skills**	**40**	**60**	**100**	**5**
2.2	***Sports Management***	**40**	**60**	**100**	**5**
2.3	**Dissertation**	**40**	**60**	**100**	**6**
2.4	**Viva-voce**	**-**	**50**	**50**	**2**
2.5	**Village Placement Programme**	**50**	**--**	**50**	**2**
Total Marks for the Programme: 600 **Total Credits for the Programme:30**					

5. Credits:

Each student should earn 30 credits to complete the program.

6. ASSESSMENT

a) Theory

Assessment of a student's attainment will consist of Continuous Internal Assessment (CIA) and End Semester Examinations (ESE). The ratio between CIA and ESE will normally be 40:60.

b) Continuous Internal Assessment (CIA)

The CIA marks shall be awarded based on the following:

Best Scores of two tests out of three tests - 25
Seminar/Assignment/Quiz - 15

c) End Semester Examinations (ESE)

Except in the case of project-work and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 60.

7. EVALUATION

The following procedure will be followed for evaluation:

a) The answer scripts are evaluated by either internal or external examiners.
b) The Question paper pattern under CBCS will include 1marks, 4 marks and10 marks questions.

For a pass in each paper, a candidate is required the secure at least 50% marks in the End Semester Examinations, i.e. 30 and a total of 50 marks including the Internal Assessment.

A student will be issued Hall Ticket only if he/she produces "No Dues" certificate from the concerned Department, the laboratory, the Registrar's Office and the Library.

8. The Award of Grades is as Follows:

Range of Marks	Grade Points	Letter Grade	Description
90 and above	9.0-10.0	O	Outstanding
80 to 89	8.0-8.9	D+	Excellent
75 to 79	7.5-7.9	D	Distinction
70 to 74	7.0-7.4	A+	Very Good
60 to 69	6.0-6.9	A	Good
50 to 59	5.0-5.9	B	Average
Less than 50	0.0	U	Re-appear
ABSENT	0.0	AAA	Absent

9. Village Placement Programme (VPP)

Village Placement Programme will be organized for 4 days in the Second Semester.

9.1 Assessment of Students Performance in VPP:

The number of credits allotted for VPP camp will be two. The marks allotted for each camp will be 100. Each student participating in the camp will be evaluated for 100 marks. Evaluation is made by the internal examiners only. The criteria for evaluation of VPP will be as follows:

Criteria	Maximum Marks
1. Interaction with the Villagers	10
2. Organizing Awareness Programmes	20
3. Counseling the Villagers	10
4. Report Preparation	10

10.Dissertation:

i. Research Guide: Each candidate will be allotted a Research Guide from among the Faculty Members of the Department by the Head of the Department concerned.

ii. Submission of Dissertation: A candidate has to prepare and submit a scholarly dissertation by the end of the Second Semester on a socially and economically relevant research problem, pertaining to his discipline and specialization, under the guidance of a Research Guide. The Research Work must be original and independent one of the candidate and the same has to be supported by a declaration, in the format prescribed by the University, by the candidate and duly certified by the Research Guide. There should not be any plagiarism. Two copies of the dissertation must be submitted by a candidate to the Head of the Department, duly signed by the Research Guide.

iii. Evaluation of Dissertation: The dissertation shall be evaluated by two examiners, of whom one will be the Research Guide and the other appointed by the University from a panel submitted by the Head of the Department. The Dissertation carries 100 marks.

iv. Viva Voce: Candidates whose dissertations are approved by the examiners securing, at least the minimum pass marks, will be called for the Viva Voce. The Board of Viva Voce shall comprise the Research Guide, External Examiner and the Head of the Department. The Viva Voce carries 50 marks.

10. Syllabus:

A detailed syllabus for the subjects of M.Phil in Sports Management Programme is given below:

1.1 Business Research Methods

Unit I:

Meaning, objectives and scope of Research – Types of Research – Research Process – Research Design – Types of Designs – Problem Identification and Formulation – Hypothesis – Types and Formulation.

Unit II:

Sampling – Sampling Design – Size and its estimation – Data Collection – Types and Sources – Tools for Data Collection – Questionnaire, Schedules – Data Collection Techniques – Survey Methods, Observation, Experimentation – Measurement and Scaling – Use of Scales in Statistical Analysis.

Unit III:

Analyzing data using statistical methods – Testing of Hypothesis – Parametric Tests: 't' test – 'Z' test – One way classification of ANOVA – Two way classification of ANOVA – 'F' test – Multivariate Statistical Tests – Factor Analysis – Cluster Analysis – Discriminant Functional Analysis.

Unit IV:

Non-Parametric Tests: Rank, Sign, Mann Whitney 'U' test, Chi-square test – Regression Analysis – Correlation Analysis (Partial & Multiple) – Awareness of Software Packages and Application of Statistical Tools (SAS, SPSS).

Unit V:

Interpretation and Report Writing: Meaning of Interpretation – Techniques – Precaution in Interpretation – Report Writing : Significance – Steps – Layout of Research Reports – Types of Reports – Oral Presentation – Mechanics of Writing a Research Report – Precautions for Writing Research Reports.

Reference Books

1. Business Research Methods – Memory & Cooper
2. Research Methodology – Methods & Techniques, C.R.Kothari
3. Research Methodology in Commerce & Management – K.R.Rao
4. Methodology on Techniques of Social Research – Wilkinson &Bhandasken.

Note: Question Paper should carry 60% weightage for Theory and 40% weightage for problems.

1.2 – Functional Areas of Management

Unit I:

Management – Nature and Scope – Elements and Levels of Management – Contributions of F.W.Taylor and Henri Fayol – Planning – Types of Plans – Steps in Planning – MBO and MBE. Organizing Process – Staffing Process – Directing and its Importance – Controlling Process.

Unit II:

Operations Management – Meaning – Plant Location – Types of Plant Layout – Functions of Production – Planning and Control – Types of Production System – Inventory Control – EOQ Analysis – ABC Analysis – Materials Management – Objectives – Functions – Maintenance – Quality Control – Objectives – Importance – Work Study – JIT – Six Sigma – KANBAN

Unit III:

Human Resource Management – Meaning – Objectives – Functions – Job Analysis – Recruitment – Sources of Recruitment – Training – Types of Training – Performance Appraisal – Definition and Process – Worker's Participation in Management – Collective Bargaining.

Unit IV:

Financial Management – Objectives – Financial Planning and Control – Break- even Analysis – Cash Management – Receivables Management – Working Capital and its Determinants – Sources of Short-term and Long-term Finance – Cost of Capital – Methods of Appraising Project – Profitability.

Unit V:

Marketing Management – Core Concepts of Marketing – Marketing Functions – Market Segmentation – Targeting and Positioning – Factors influencing Buyer Behavior – Product Decisions – Product Life Cycle – New Product Development – Pricing Methods – Channels of Distribution – Promotional Mix.

References:

1. Principles and Practices of Management – L.M.Prasad – Sultan Chand & Sons.
2. Production and Operations Management – R.PannerSelvam – Prentice Hall of India.
3. Human Resource and Personnel Management – K.Aswathappa – Tata Mc.Graw Hill.
4. Financial Management – S.N.Maheswari – Sultan Chand & Sons.
5. Marketing Management – Philip Kotler – Prentice Hall of India
6. Financial Management – M.Pandey – Vikas Publishing House.

Note: The question paper shall carry 100% weightage for THEORY alone.

2.1 - COMPUTER OPERATIONS, COMMUNICATIONS AND EDUCATIONAL SKILLS

UNIT : I

Basics of Computers – Hardware – Software – Networking Computers – LAN – WAN – Introduction to Internet – Internet Services – WWW – Sending Mail – Receiving Mail – Web Pages – Web Site – Web Server – Search Engines – Survey of Article / Literature using internet.

UNIT : II

Word document – Creation – Formatting Features – Mail Merge – Find and Replace - Spelling Checkers – Spread Sheet - Simple Calculations - PowerPoint – Layouts – Audio – Video – image usages – with Power point – Data base – Creation – Primary Key and other constraints – Simple SQL statements – Create insert – update – delete – select – commit – front end tools – connecting database using VB – Creating simple Graphical user interface applications using VB.

UNIT: III

What is communication - Role of communication in the present scenario – Barriers to communication - Types of communication – Written verses oral – Telephone Communication – Face to face to face interactions (situations) – Written – Letter Writing – Report Writing – Memo's –Note making - Agenda preparation.

UNIT :IV

Soft Skills – Interview Skills – Preparing for an interview – Presentation Skills – Body Language - Speaking , Pronunciation , structuring of presentation, Group discussion – Skills in listening and expressing effectively.

UNIT: V

Pedagogy : Meaning, Theories of pedagogy (Benjamin Bloom, Jean Piaget, Indian educational theory (Gandhi) – Educational Psychology – Concept learning life skills, sex education – Integrating skill development, modernizing education and skill development – Basic and higher education : Issues and challenges.

References:

1. Peter Norton, " Introduction to Computers", 6th Edition , Tata Mcgraw Hill.
2. Mangal .S.K. (2002) , Advanced Educational Psychology, Prentice Hall of India, New Delhi.
3. Sampath, K. et.al (1998) Introduction to educational technology, Sterling Publishers, New Delhi..
4. Vedanayagam E.G. (1988) Teaching Technology for College Teachers, New Delhi, Sterling Publishers.
5. Kumar K. (1997) Educational Technology, New Delhi : New Age International Publishers.

1.3 SPORTS MANAGEMENT

UNIT : I

Social Context for modern Sports : Need for New Structure in Sports Today – International Sports Environment : IOC and International Federations – National Sports Environment : National Olympic Committees – National Federations – Governmental and Quasi – Governmental Organizations – Sports Conflicts – Assumptions about Conflict in sports – Internal Disputes within Federations – Conflicts concerning Individual Rights and Obligations – Conflicts arising from Anti – doping Tests.

UNIT : II

Managing Sports in the 21st century: Defining Sports and Sports Management – Nature and Scope of the Sports Industry – Unique Aspects of the Sports Management – Sports Management Competencies – Future Challenges and Opportunities for Sports Managers – Future of Sports Industry / Organizations

UNIT III

The Sports manager : Basics of Sports Management – Managing in the Sports Environment – Managing People and Administrative Units – Management Functions in Sports – Motivating People – Understanding Leadership – Enhancement of Management Abilities : Fundamentals.

UNIT IV

Sports Organizations and Technology: Technology – Research on technology and Organizations – Critiques of the Technology imperative – Micro – Electronic Technologies – Relationship between Technology and Organizational Structure.

UNIT V

The future of sports management: Why Sports Managers need to understand research – commercial and academic Researches in Sports management – Sports Management Research : Key concepts – Research process – Current Challenges in Sports Management Research – The Future of Sports Management Research.

References :

1. Ruben Acosta Hernandez (2007) Managing Sports Organizations. Illinios Human Kinetics.
2. Trevor Slack et.al (2007) Understanding Sports Organizations, Illinios Human Kinetics.
3. Jean – Loup Chappelet and Emmanuel Bayle, (2006) Strategic and Performance Management of Olympic Sports Organization.



TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

DEPARTMENT OF ADVANCED SPORTS TRAINING AND TECHNOLOGY

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
CHENNAI-600 127

APPROVED SYLLABUS

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Choice Based Credit System

M.TECH SPORTS TECHNOLOGY

DEGREE PROGRAMME OFFERED IN THE

DEPARTMENT OF ADVANCED SPORTS TRAINING

AND SPORTS TECHNOLOGY

TAMILNADU PHYSICAL EDUCATION AND

SPORTS UNIVERSITY

M.TECH SPORTS TECHNOLOGY

Programme Educational Objectives (PEO)

- PEO-1 Graduate will have successful academic and research career.
- PEO-2 Graduates will have employment in public and private sectors and resolve economic, social and environmental issues.

Educational Program Outcomes (POs):

After completion of the program graduates will be able to

PROGRAMME OUTCOMES (PO'S)

The post graduates are able to

PO-1) Attain in–depth knowledge to solve Sports Engineering problems in current needs of stack holders at global perspective.

PO-2) Analyse complex Sports Engineering problems critically.

PO-3) Find optimal solutions for Sports Engineering and Technology problems considering social and environmental issues.

PO-4) Carryout researches in one or more domains of Sports Engineering and Technology

PO-5) Apply appropriate and upgraded tools like DARTFISH,CFD to solve present day Sports Engineering and Technology problems.

PO-6) Carryout projects & research using collaborative and multidisciplinary engineering to enhance sporting performance considering economic aspects.

PO-7) Communicate effectively socio-economic problems related to Sports Engineering and technology by appropriate documentations and presentations.

PO-8) Incline for independent life-long learning.

PO-9) Exhibit social responsibility adhering to ethical values.

PO-10) Make corrective measures based on their own experiences.

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X	X	X	X	X	X	X	X	X	X
PEO-2						X	X		X	X

PROGRAM SPECIFIC OUTCOMES (PSO)

The post graduates are able to

PSO 1 Analyze, design and develop sports devices and players performance with latest available technologies.

PSO-2 Work on sports and interdisciplinary projects in their research and development activities.

I, II, III & IV TH SEMESTERS CURRICULUM AND SYLLABI

CURRICULUM 2018-CHOICE BADED CREDIT SYSTEM

M.TECH SPORTS TECHNOLOGY

I, II, III & IV TH SEMESTERS CURRICULUM AND SYLLABI

SEMESTER I

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme			Credits
			Th	Tuto	Lab	
1	Core/ PST 18CT101	Aerodynamics in sports	3	0	0	3
2	Core/ PST 18CT102	Sports Materials Engineering and Design	3	0	0	3
3	Elective/ PST18DE101	Elective I	3	0	0	3
	Elective/ PST18DE102	Elective II	3	0	0	3
5	PST18CL101	Sports Aerodynamics Lab	0	0	4	2
6	PST18CL102	Computer Aided Modeling lab	0	0	4	2
7	MLC/ PST18CT103	Research Methodology and IPR	2	0	0	2
8	Audit courseI /PST18SE101	Audit course 1	2	0	0	0
Total Credits						18

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

SEMESTER II

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme			Credits
			Th	Tuto	Lab	
1	Core/ PST18CT201	Sports Biomechanics	3	0	0	3
2	Core/ PST18CT202	Measurement and Instrumentation in sports	3	0	0	3
3	Programme Elective/	Elective III	3	0	0	3

	PST18DE201					
	Programme Elective/ PST18DE202	**Elective IV**	**3**	**0**	**0**	**3**
5	**Core Lab 1/ PST18CL201**	Sports Performance Analysis Lab	**0**	**0**	**4**	**2**
6	**Core Lab 2/ PST18CL2012**	Computer Aided Modeling &analysis lab	**0**	**0**	**4**	**2**
7	**Core/ PST18MP101**	Mini Project	**0**	**0**	**4**	**2**
8	**Audit course 2 / PST18AE201**	**Audit course 2**	**2**	**0**	**0**	**0**
Total Credits						**18**

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

SEMESTER III

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme			Credits
			Th	Tuto	Lab	
1	Programme Elective/ **PST18DE301**	Elective V	**3**	**0**	**0**	**3**
2	Open Elective/ **PST18GE101**	**Open Elective I**	**3**	**0**	**0**	**3**
3	Dissertation / **PST18DP301**	Dissertation Phase I	**0**	**0**	**20**	**10**
Total Credits						**16**

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

SEMESTER IV

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme			Credits
3	Dissertation/ **PST18DP401**	Dissertation Phase II	**0**	**0**	**32**	**16**
Total Credits						**16**

Total Credits for the programme 18+18+16+16 = 68

List of Elective Courses Offered in I, II & III Semesters

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Code No.	Course Title	Teaching Scheme			Credits
		Th	Tuto	Lab	
ST 1501	Applications of Statistics in Baseball	**3**	**0**	**0**	**3**
ST 1502	Physiology of Sports and Exercise	**3**	**0**	**0**	**3**
ST 1503	Race engine design for optimal performance	**3**	**0**	**0**	**3**
ST 1504	Sports Equipment Materials	**3**	**0**	**0**	**3**
ST 1505	Sports Traumatology	**3**	**0**	**0**	**3**
ST 1506	Software in Sports	**3**	**0**	**0**	**3**
ST 1507	Sports Psychology: Issues and Applications	**3**	**0**	**0**	**3**
ST 1508	Surveying And Construction Materials	**3**	**0**	**0**	**3**
ST 1509	Applied Biomaterials in Sports Technology	**3**	**0**	**0**	**3**
ST 1510	Commercialization of Sports	**3**	**0**	**0**	**3**
ST 1511	Sports Economics	**3**	**0**	**0**	**3**
ST 1512	Motor Sports Applications	**3**	**0**	**0**	**3**
ST 1513	Sports And Event Management	**3**	**0**	**0**	**3**
ST 1514	Applications of Statistics in Sports	**3**	**0**	**0**	**3**
ST 1515	Cell & Tissue Engineering	**3**	**0**	**0**	**3**
ST 1516	Sports Materials Engineering II	**3**	**0**	**0**	**3**
ST 1517	Race Car Vehicle Dynamics	**3**	**0**	**0**	**3**
ST 1518	Sports Facility Management	**3**	**0**	**0**	**3**

ST 1519	Sports Marketing	**3**	**0**	**0**	**3**
ST 1520	Soil And Ground Improvement Techniques	**3**	**0**	**0**	**3**

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

List of Open Elective Courses Offered for other Department Students

Course code	Course	Teaching Scheme			Credits
		Th	Tuto	Lab	
SET 1501	Fundamentals of Sports Technology	**3**	**0**	**0**	**3**
SET 1502	Intellectual Properties Rights	**3**	**0**	**0**	**3**
SET 1503	Design of Experiments and Research Applications	**3**	**0**	**0**	**3**
SET 1504	Industrial Safety	**3**	**0**	**0**	**3**

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

AUDIT COURSE 1 & 2

Course code	Course	Teaching Scheme			Credits
		Th	Tuto	Lab	
AE01	English for Research Paper Writing	**2**	**0**	**0**	**0**
AE02	Disaster Management	**2**	**0**	**0**	**0**
AE03	Sanskrit for Technical Knowledge	**2**	**0**	**0**	**0**
AE04	Value Education	**2**	**0**	**0**	**0**
AE05	Constitution of India	**2**	**0**	**0**	**0**
AE06	Pedagogy Studies	**2**	**0**	**0**	**0**
AE07	Stress Management by Yoga	**2**	**0**	**0**	**0**
AE08	Personality Development through Life Enlightenment Skills.	**2**	**0**	**0**	**0**
AE09	Professional Ethics in Engineering	**2**	**0**	**0**	**0**

SEMESTER I

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme			Credits
			Th	Tuto	Lab	
1	**Core/ PST 18CT101**	Aerodynamics in sports	**3**	**0**	**0**	**3**
2	**Core/ PST 18CT102**	Sports Materials Engineering and Design	**3**	**0**	**0**	**3**
3	**Elective/ PST18DE101**	Elective I	**3**	**0**	**0**	**3**
	Elective/ PST18DE102	Elective II	**3**	**0**	**0**	**3**
5	**PST18CL101**	Sports Aerodynamics Lab	**0**	**0**	**4**	**2**
6	**PST18CL102**	Computer Aided Modeling lab	**0**	**0**	**4**	**2**
7	**MLC/ PST18CT103**	Research Methodology and IPR	**2**	**0**	**0**	**2**
8	**Audit courseI /PST18AE101**	**Audit course 1**	**2**	**0**	**0**	**0**
Total Credits						**18**

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

PST 18 CT101	AERODYNAMICS IN SPORTS
	Instruction : 4 hr / week *Credits : 4* *Assessment : 25 + 75*
1	**SYLLABUS**

Course Objectives:

- To impart knowledge on Theory and Experimental knowledge in the application of the aerodynamics in sports to design the high performance equipments and to optimize the performance of the athlete.

UNIT I BASIC AERODYNMICS 9

Aerodynamic terminologies, aerodynamic force and moment , drag and lift, one and two dimensional flow, momentum equation, energy equation, Navier –stock equation, angular velocity.

UNIT II POTENTIONAL AND AXISYMMETRIC (INVISCID INCOMPRESSIBLE) FLOW 9

Laplace equation, Bernoulli's equation for rotational flow, Fundamentals of Invicid incompressible flow, sources of flow, Non lifting and lifting of flow over a cylinder, kutta-Joukowski theorem, vortex system and laws of vortex motion, incompressible flow, pitot tube equation, normal shock waves, Mach and shock waves in two dimensional flow.

UNIT III VISCOUS FLOW AND BOUNDARY LAYER 9

Development of boundary layer, boundary layer equation, laminar and turbulent flow, boundary layer separation, momentum integral equation, Reynolds number, Performance factors in bicycling- Human power, drag and rolling resistance.

UNIT IV AERODYNAMICS ON SPORTS EVENTS 9

Cycling aerodynamics, Factors influencing on running and running aerodynamics ,Skin suit aerodynamics, aerodynamics in cross country skiing and speed skiing. Performance factors in ski jumping, case studies ski jumping, Ski jumping aerodynamics.

UNIT V SPORTS BALL AERODYNAMICS AND MEASURMENT 9

Sports Ball Aerodynamics- aerodynamics on Base ball, Golf ball, tennis ball, cricket ball, volley ball , soccer ball , magnus effect, effect of velocity and spin, Case studies,CFD simulations and wind tunnel test.

Total No.of periods : 45

	Reference 1. Aerodynamics for Engineering students , E.L. Houghton, P.W.Carpenter, BH, 2003 2. Sports Aerodynamics, Noerstrud, Helge (Ed.), Springer, 2008 3. Projectile Dynamics in Sport: Principles and Applications, By Colin White, Routledge, 2010 4. Aerodynamic Measurements , G P Russo, Woodhead Publishing, 2011.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand and attain knowledge on Theory and Experimental knowledge of aerodynamics in sports
	CO-2	Apply Theory and Experimental knowledge of aerodynamics in sports
	CO-3	Design the high performance equipments and to optimize the performance of the athlete.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3			3						2
2		3		2						3
3			3		3	3				2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	2	3
3	1	1

Core/PST 18CT102 – SPORTS MATERIALS ENGINEERING AND DESIGN

Course Objectives:

- To impart knowledge on material science and advance materials for the design and manufacture of the different sports apparel and equipments to increase the athlete performance and to avoid the sports injury.

UNIT I SPORTS EQUIPMENT AND PHILOSOPHY OF DESIGN 9

Materials in sports- Factors determining sports performance, role of bioengineering in sports equipment, Advanced materials in the design of sports equipment, materials selection in design of pole vaulting, Bicycle construction , relationship between advanced materials technology in designing sports equipments and performance.

UNIT II FUNDAMENTALS OF ADVANCED MATERIALS 9

Composite materials , Nano and smart materials, Comparing and selecting materials , Basis of sports shoe design , Cycle mechanics from bamboo to fibre composites, Space frame Materials The wheels, Case studies and Future trends .

UNIT III MATERIALS FOR TENNIS SQUASH RACKETS 9

String types, function of string in a racquet, frame stiffness loss in a string, perception of string properties, Racket mechanics: the sweet spot, Influence of materials on racket technology, Specific designs and tests on racket, frame materials, Ball construction , tennis and squash ball ,Case studies.

UNIT IV MATERIALS IN BOATS AND BOARDS AND MOUNTAINEERING 9

Materials for racing hulls, Canoes and Kayaks , Surfboards, Testing ski properties , Materials in boots and bindings , Ski-sticks, Advanced materials and design in skis, materials for ropes in mountaineering, harnesses and slings karabiners, belay, descending and ascending devices, rock protection, ice climbing equipment,

UNIT V MATERIALS FOR SPORTS BALLS AND HELMET 9

Materials for golf club and golf ball, cricket ball, baseball, soccer and volleyball, discus, javelin, archery, fencing and foam materials, material selection and design of helmets. Case studies on helmet materials selection.

Total No.of periods : 45

Reference

1. Mike Jenkins, Aleksandar Subic, "Materials in sports equipment" published by Woodhead publishing.
2. Easterling**, E.A.,** Advanced Materials for Sports Equipment, Springer, 1993
3. *A. Subic,* Materials in Sports Equipment ,Volume 2 , Woodhead, 2007

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of materials and its properties
	CO-2	Apply specific materials for the design and manufacture of the different sports apparel and equipments
	CO-3	Modify suitable materials/ design to increase athlete performance and to avoid the injury.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3			2	1	2				1
2		3	2						2	
3		2		3		3			2	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2
3	1	3

PST18CT103 - Research Methodology and IPR

Course Objectives:

To impart knowledge to the students to Understand research problem formulation, Analyze research related information and follow research ethics.

To impart knowledge on understanding Intellectual Property Rights
To create awareness among students about IPR

Syllabus Contents:

UNIT 1:

Meaning of research problem, Sources of research problem, Criteria Characteristics of a good research problem, Errors in selecting a research problem, Scope and objectives of research problem. Approaches of investigation of solutions for research problem, data collection, analysis, interpretation, Necessary instrumentations

UNIT 2:

Effective literature studies approaches, analysis Plagiarism, Research ethics,

UNIT 3:

Effective technical writing, how to write report, Paper Developing a Research Proposal, Format of research proposal, a presentation and assessment by a review committee

UNIT 4:

Nature of Intellectual Property: Patents, Designs, Trade and Copyright. Process of Patenting and Development: technological research, innovation, patenting, development. International Scenario: International cooperation on Intellectual Property. Procedure for grants of patents, Patenting under PCT.

UNIT 5:
Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications.

UNIT 6:
New Developments in IPR: Administration of Patent System. New developments in IPR; IPR of Biological Systems, Computer Software etc. Traditional knowledge Case Studies, IPR and IITs.

References:

Stuart Melville and Wayne Goddard, "Research methodology: an introduction for science

& engineering students'"

Wayne Goddard and Stuart Melville, "Research Methodology: An Introduction"

Ranjit Kumar, 2nd Edition , "Research Methodology: A Step by Step Guide for beginners"

Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd ,2007.

Mayall , "Industrial Design", McGraw Hill, 1992.

Niebel , "Product Design", McGraw Hill, 1974.

Asimov , "Introduction to Design", Prentice Hall, 1962.

Robert P. Merges, Peter S. Menell, Mark A. Lemley, " Intellectual Property in New Technological Age", 2016.
T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008

<table>
<tr><td rowspan="5">2</td><td colspan="2">COURSE OUTCOMES: Students are able to</td></tr>
<tr><td>CO-1</td><td>Understand research problem formulation</td></tr>
<tr><td>CO-2</td><td>Analyze research related information</td></tr>
<tr><td>CO-3</td><td>. Follow research ethics</td></tr>
<tr><td>CO4</td><td>Understand that today's world is controlled by Computer, Information Technology, but
tomorrow world will be ruled by ideas, concept, and creativity.</td></tr>
<tr><td></td><td>CO5</td><td>Understanding that when IPR would take such important place in growth of individuals &
nation, it is needless to emphasis the need of information about Intellectual Property Right
to be promoted among students in general & engineering in particular.</td></tr>
<tr><td></td><td>CO6</td><td>Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits.</td></tr>
<tr><td>3</td><td colspan="2">MAPPING (CO's and PO's)
<table>
<tr><td rowspan="2">Course Outcomes</td><td colspan="10">Program Outcomes</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
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1	3			3		2				
2						3				
3									3	
4					3					
5								2	1	
6		3	2	1			3			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1
2	2	1
3	3	1
4	3	2
5	2	1
6	3	1

PST18CL101 Sports Aerodynamics Lab

LIST OF EXPERIMENTS

Study on wind tunnel basis and low speed sub sonic wind tunnel

Finding Drag and lift coefficient of different sports balls using wind tunnel Test

Comparing drag coefficient various sports balls

Calculating side force and pressure distribution on various balls

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the influence of air on various sports.
	CO-2	Develop specific models for testing the effect of air
	CO-3	Modify the position of the models to increase athlete performance

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	1								
2				3		2				
3			3						2	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2
3	1	3

PST18CL102 - COMPUTER AIDED MODELING LAB

Course Objectives:

- To familiarise the students with the design and assemble of the sports equipments

using the CAD Software.

LIST OF EXPERIMENTS

Basic 2D and 3D sketch , basic part modelling, sports ball and accessories modelling

LIST OF EQUIPMENTS

1. **Computers with latest configuration - 30 Nos.**
2. **Power back up of required capacity**
3. **Colour printer – 1 No.**
4. **Dotmatrix Printer – 1 No.**

LIST OF SOFTWARES REQUIRED

1. **Any latest modelling softwares like ProE, CATIA, CAD etc.,**

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of software used for modelling and design of sports equipments.
	CO-2	Apply specific softwares for modelling different sports equipments

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1				3					
2		2	3			3			2	

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

(CO)	1	2
1	1	
2	2	1
3		

SEMESTER II

Applicable to the students admitted from the academic year 2018-2019 onwards)

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme			Credits
			Th	Tuto	Lab	
1	Core/ PST18CT201	Sports Biomechanics	3	0	0	3
2	Core/ PST18CT202	Measurement and Instrumentation in sports	3	0	0	3
3	Programme Elective/ PST18DE201	Elective III	3	0	0	3
	Programme Elective/ PST18DE202	Elective IV	3	0	0	3
5	Core Lab 1/ PST18CL201	Sports Performance Analysis Lab	0	0	4	2
6	Core Lab 2/ PST18CL2012	Computer Aided Modeling & analysis lab	0	0	4	2
7	Core/ PST18MP201	Mini Project	0	0	4	2
8	Audit course 2 / PST18AE201	Audit course 2	2	0	0	0
Total Credits						18

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

PST18CT201 - SPORTS BIOMECHANICS

Course Objectives

- To learn the basic idea to integrate the Medical and Engineering science to study the motion of the athlete to optimize the performance and safety.

UNIT I BASIC TERIMINOLOGY AND SKELETAL CONSIDERATIONS FOR MOVEMENT 9

Basic Terminologies- biomechanics versus kinesiology, anatomy versus functional anatomy, kinematics versus kinetics, statics versus dynamics, anatomical terms, movement description, Reference Systems, Measuring the Mechanical properties of Body tissues, Biomechanical Characteristics of Bone, Mechanical properties of bone, loads applied to bone, cartilage- articular cartilage, fibrocartilage, ligaments , bony articulations- the diarthrodial or synovial joint and other types of joints

UNIT II MUSCULAR AND NEUROLOGICAL CONSIDERATION FOR MOVEMENT 9

Muscle Tissue Properties-Irritability, Contractility, Extensibility, Elasticity, Functions of Muscle, Produce Movement, Maintain Postures and Positions, Stabilize Joints, Other Functions, Skeletal Muscle Structure-Physical Organization of Muscle, Force Generation in the Muscle-Motor Unit ,Muscle Contraction, Transmission of Muscle Force to Bone Mechanical Model of Muscle, The Musculotendinous ,Role of Muscle-Origin versus Insertion, Developing Torque, Muscle Role versus Angle of Attachment, Muscle Actions Creating, Opposing, and Stabilizing Movements, Net Muscle Actions, One- and Two-Joint Muscles, Force–Velocity Relationships in Skeletal Muscle-,Force–Velocity and Muscle Action or Load, Factors Influencing Force and Velocity Generated by Skeletal Muscle Strengthening Muscle-Principles of Resistance Training, Training Modalities, Injury to Skeletal Muscle-Cause and Site of Muscle Injury, Preventing Muscle Injury Inactivity, Injury, and Immobilization Effects on Muscle. General Organization of the Nervous System, Motoneurons, Sensory Receptors and Reflexes, Electromyography.

UNIT III FUNCTIONAL ANATOMY OF THE UPPER AND LOWER EXTREMITY9

Anatomical and Functional Characteristics of the Joints of the Shoulder,Combined Movement Characteristics , Muscular Actions, Injury Potential of the Shoulder, Elbow and Radioulnar Joints, Wrist and Fingers, Contribution of Upper Extremity Musculature to Sports Skills or Movements, External Forces and Moments Acting at Joints in the Upper Extremity, Pelvis and Hip Complex, Knee Joint, Ankle and Foot Movement Characteristics, muscle Actions, Contribution of Lower Extremity Musculature to Sports Skills or Movements, Forces Acting on Joints in the Lower Extremity, Vertebral Column, Muscular Actions, Contribution of the Trunk Musculature to Sports Skills or Movements.

UNIT IV LINEAR AND ANGULAR KINEMATICS 9

Collection of Kinematic Data, Position and Displacement, Velocity and Speed, Acceleration, Differentiation and Integration, Linear Kinematics of Walking and Running, Linear

Kinematics of the Golf Swing, Linear Kinematics of Wheelchair Propulsion Projectile Motion, Equations of Constant Acceleration, Angular Motion, Measurement of Angles, Lower Extremity Joint Angles, Representation of Angular Motion Vectors, Angular Motion Relationships, Relationship between Angular and Linear Motions, Angle–Angle Diagrams, Angular Kinematics of Walking and Running, Lower Extremity Angles, Angular Kinematics of the Golf Swing, Angular Kinematics of Wheelchair Propulsion. Case studies.

UNIT V LINEAR AND ANGULAR KINETICS 9

Force**,** types of forces,laws of motion,Representation of Forces Acting on a System, Special Force Applications, Linear Kinetics of Locomotion, Linear Kinetics of the Golf Swing , Linear Kinetics of Wheelchair Propulsion, case studies,torque, types of torque, Newton's Laws of Motion: Angular Analogs, centre of mass, Rotation and Leverage, Representation of Torques Acting on a System, Analysis Using Newton's Laws of Motion, Special Torque Applications, Cinematography and video analysis.

Total No. of Periods : 45

Course Outcome

References:

1. Hamill, J & Knutzen, K , Biomechanical Basis of Human Movement. Lippinncott, Williams and Wilkens, 4th Ed., (2015)
2. Roger Bartlett, Introduction to Sports Biomechanics, Taylor & Francis, 2002
3. *Hay, J. (1978). The biomechanics of sport techniques. (2nd. ed.). Englewood Cliffs:*

   Prentice-Hall.
4. *Hay, J. & Reid, J. (1982). The Anatomical and Mechanical Bases of Human Motion.*

   Englewood Cliffs: Prentice-Hall.
5. *Nordin, M. & Frankel, V. (1990). Basic Biomechanics of the Musculoskeletal System,*

   Philadelphia: Lea & Febiger.
6. *Northrip, J., Logan, G. & McKinney, W. (1983). Analysis of Sport Motion. (3rd. ed).*

   Dubuque: William C. Brown.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the concepts of biomechanics in sports
	CO-2	Modify suitable body positions and movements to increase athlete performance and to avoid injury.
	CO-3	Optimize the performance and safety of athletes using the principles of biomechanics.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	1		2						
2		2		3						
3			3	2		3				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2
3	1	3

PST18CT202 - MEASUREMENT AND INSTRUMENTATION IN SPORTS ENGINEERING

Course Objectives:

- To apply the knowledge of the electronic and sensor technology to measure performance of the athlete and to attain the biological data during the performance.

UNIT I INTRODUCTION OF SPORTS ENGINEERING

Definition, purpose, advantages and applications; General principles and purpose of instrumentation in sports, Workflow of instrumentation and business aspects; Technological and social impacts on sports.

UNIT II SENSORS AND TRANSDUCERS 10

Sensors, data transfer and signal processing,Systematic of sensors and transducers Mechanics and design of sensor,Wireless technology, A/D boards and software systems Signal processing, fractal geometry, Design and problems of measurement chains.

UNIT III INSTRUMENTATION OF EQUIPMENT 10

Instrumentation of Equipment -Workflow of instrumentation, constraints, and sporting rules , Product overview, Definition and identification of performance parameters, Optimisation of training and biofeedback, Calculation and graphical representation of vector diagrams and instantaneous centres of pressure using software , Design of instrumented equipment, sensor locations and balancing, Application of instrumented equipment and case reports, Instrumentation for testing of equipment

UNIT IV INSTRUMENTATION OF THE ATHLETE 10

Overview of instrumentation systems, Worn instrumentation and constraints, Kinematic systems with skin markers (EGM, video, infrared, ultrasound, electromagnetic), Application of kinematic systems and case reports, Performance analysis, Golf swing analysers.

UNIT V INSTRUMENTATION OF THE ENVIRONMENT AND SPORTS FACILITIES 10

Instrumentation of the environment and sports facilities, Video systems and software (Dartfish, SiliconCoach, Simi),Hawk Eye, Infrared contact measurement (Hotspot), Application of video systems and case reports , Performance analysis .

Total No of periods: 45

Course Outcomes:

- To apply to and to attain the biological data during the performance.

References

- ***1.*.** Franz Konstantin Fuss**,** Aleksandar Subic**,** Sadayuki Ujihashi "*The Impact of Technology on Sport II"* Taylor and Francis 2007

- *2. Craig J.J., " Introduction to Robotics Mechanics and Control ", Addison-Wesley, 1999.*
- *Murty, D.v.s. Transducers And Instrumentation Prentice Hall of India, 2008*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Gain knowledge of the electronics and sensor technology
	CO-2	Measure performance of the athlete error free
	CO-3	increase athlete performance and to avoid injury by providing with feed to the players/athletes

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3					2				
2		2								
3			3	3		3				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2
3	1	3

PST18MP201 MINI PROJECT

Teaching Scheme
Lectures: 2 hrs/week

Syllabus Contents:

• Students can take up small problems in the field of design engineering as mini project. It can be related to solution to an engineering problem, verification and analysis of experimental data available, conducting experiments on various engineering subjects, material characterization, studying a software tool for the solution of an engineering problem etc.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Work in actual industrial environment if they opt for internship.
	CO-2	Solve a live problem using software/analytical/computational tools.
	CO-3	Write technical reports.
	CO-4	Present and defend their work in front of technically qualified audience.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		2	2	3		1				
2					3	2				
3	2					2	3			
4						3	3	2	3	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2
3	1	3

PST18CL201 Sports Performance Analysis Lab

Course Objectives:

- To apply movement analysis through image capturing through high resolution camera and motion analysis software to evaluate and optimize the sports performance.

- **LIST OF EXPERIMENTS**

Studies on Motion analysis software, Individual player analysis , match analysis, vertical jumping test, drag flick analysis using stromotion, ball trajectory analysis using stromotion , basketball tagging analysis

LIST OF EQUIPMENTS AND SOFTWARES REQUIRED

1.Computers with latest configuration 30 Nos.

2.Power back up for the required capacity

3.Colour printer

4. High resolution camera

5.Motion analysis software like Dartfish and SportCAD etc .

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Acquire knowledge on Athletes movement capturing using high resolution camera Movement analysis software
	CO-2	Capture and analyse movements in various sports and athletic events
	CO-3	Optimize players performance

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3				3					
2					3	3	2			
3			3						2	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2
3	1	3

PST18CL202 COMPUTER AIDED MODELING & ANALYSIS LAB

Course Objectives:

- To attain Numerical simulation to study the Structural, Fluid and FSI analysis of the sports apparel and equipment to confirm the safety and to optimize the sports performance.

LIST OF EQUIPMENTS

1.Computers with latest configuration 30 Nos.

2.Power back up of the required capacity

3.Colour printer

LIST OF SOFTWARES REQUIRED

1.Any latest modelling software like ProE, CATIA, CAD etc.,

2.Analysis package such as ANSYS ,MATLAB etc

- **LIST OF EXPERIMENTS**

Numerical analysis of different sports balls,
Numerical analysis of stadium,
FEM analysis on 2D pole vault
Race engine modelling and analysis

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Classify a given problem on the basis of its dimensionality as 1-D, 2-D, or 3-D, time-dependence as Static or Dynamic, Linear or Non-linear.
	CO-2	Develop system level matrix equations from a given mathematical model of a problem following the Galerkin weighted residual method or principle of stationary potential.
	CO-3	While demonstrating the process mentioned in 2 above, he will be able to identify the primary and secondary variables of the problem and choose correct nodal degrees of freedom and develop suitable shape functions for an element, implement Gauss-Legendre scheme of numerical integration to evaluate integrals at element level, and assemble the element level equations to get the system level matrix equations. He will also be able to substitute the essential boundary conditions correctly and obtain the solution to system level matrix equations to get the values of the field variable at the global nodes.
	CO-4	state three sources of errors in implementing FEM and suggest remedies to minimize the same for a given problem, viz. Modeling errors, Approximation errors, and numerical errors.
	CO-5	Obtain consistent and lumped mass matrices for axial vibration of bar sand transverse vibration of beams and obtain fundamental frequency of natural vibration using the methods mentioned in the curricula.
	CO-6	use MATLAB for implementation of FEM to obtain elongations at nodes of a bar subjected to traction and concentrated loads and prescribed boundary conditions
	CO-7	use commercial software like ANSYS or ABAQUS for implementation of FEM to obtain stress concentration due to a small hole in a rectangular plate subjected to traction on edges and concentrated loads at points on the edges and prescribed boundary conditions and present his/her work using the above software in a conference or publish the work in a peer reviewed journal 3
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	3								
2	2	2								
3	3	3								
4					3					

5	3	3								
6					3					
7						3	3	3	2	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	2	
3		
4		2
5	1	
6	3	
7		3

SEMESTER III

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme			Credits	Assessment
			Th	Tuto	Lab		
1	Programme Elective/ **PST18DE301**	Elective V	**3**	**0**	**0**	**3**	**25+75**
2	Open Elective/ **PST18GE301**	**Open Elective I**	**3**	**0**	**0**	**3**	**25+75**
3	Dissertation / **PST18DP301**	Dissertation Phase I	**0**	**0**	**20**	**10**	**50+150**
Total Credits						**16**	**400**

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

Dissertation Phase-1

Teaching Scheme
Lectures: 20 hr/week

Guidelines:

- The Project Work will start in semester III and should preferably be a problem with research potential and should involve scientific research, design, generation/collection and analysis of data, determining solution and must preferably bring out the individual contribution.

- Seminar should be based on the area in which the candidate has undertaken the dissertation work as per the common instructions for all branches of M. Tech.

- The examination shall consist of the preparation of report consisting of a detailed problem statement and a literature review.

- The preliminary results (if available) of the problem may also be discussed in the report.

- The work has to be presented in front of the examiners panel set by Head and PG coordinator.

- The candidate has to be in regular contact with his guide and the topic of dissertation must be mutually decided by the guide and student.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Exposed to self-learning various topics.
	CO-2	Survey the literature such as books, national /international refereed journals and contact resource persons for the selected topic of research.
	CO-3	Write technical reports.
	CO-4	Develop oral and written communication skills to present and defend their work in front of technically qualified audience.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2	1	2				3		3
2					2	3				
3							3			
4							3	1	3	2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2	1	2
3		1
4	3	

SEMESTER IV

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Sl.No.	Course type &Code No.	Course Title	Teaching Scheme	Credits	Assessment

			T	Tito	Lab		
1	Dissertatio **PST18DP401**	Dissertation Phase II	**0**	**0**	**32**	**16**	**100+200**
Total Credits						**16**	

Total Credits for the programme 18+18+16+16 = 68

Dissertation Phase- II

Teaching Scheme

Lectures: 32 hr/week

Guidelines:

- It is a continuation of Project work started in semester III. He has to submit the report in prescribed format and also present a seminar.
- The dissertation should be presented in standard format as provided by the department.
- The candidate has to prepare a detailed project report consisting of introduction of the problem, problem statement, literature review, objectives of the work, methodology (experimental set up or numerical details as the case may be) of solution and results and discussion.
- The report must bring out the conclusions of the work and future scope for the study.
- The work has to be presented in front of the examiners panel consisting of an approved external examiner, an internal examiner and a guide, co-guide etc. as decided by the Head and PG coordinator.
- The candidate has to be in regular contact with his guide.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Prepare comprehensive report based on literature survey and Use different experimental techniques
	CO-2	Use different software/ computational/analytical tools.
	CO-3	Design and develop an experimental set up/ equipment/test rig relevant to sports technology

	CO-4	Conduct tests on existing set ups/equipments and draw logical conclusions from the results after analyzing them.
	CO-5	Either work in a research environment or in an industrial environment.
	CO-6	Conversant with technical report writing.
	CO-7	Present and convince their topic of study to the engineering community or to publish the work in a peer reviewed journal/conference.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3		3				3	3	3	1
2	3	3	3		3	3	3	2	3	3
3	3	3	3	1	2	3		3	3	3
4	3	3	3		3	3		3	3	3
5	3	3	3	2	2	3		1	3	1
6	1						3		2	
7	3			3			3		3	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		1
3	2	
4		3
5		
6		2
7	3	

LIST OF ELECTIVE COURSES OFFERED IN I, II & III SEMESTERS

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Code No.	Course Title	L	T	P	C
	THEORY				
ST 1501	Applications of Statistics in Baseball	**3**	**0**	**0**	**3**
ST 1502	Physiology of Sports and Exercise	**3**	**0**	**0**	**3**
ST 1503	Race engine design for optimal performance	**3**	**0**	**0**	**3**
ST 1504	Sports Equipment Materials	**3**	**0**	**0**	**3**
ST 1505	Sports Traumatology	**3**	**0**	**0**	**3**
ST 1506	Software in Sports	**3**	**0**	**0**	**3**
ST 1507	Sports Psychology: Issues and Applications	**3**	**0**	**0**	**3**
ST 1508	Surveying And Construction Materials	**3**	**0**	**0**	**3**
ST 1509	Applied Biomaterials in Sports Technology	**3**	**0**	**0**	**3**
ST 1510	Commercialization of Sports	**3**	**0**	**0**	**3**
ST 1511	Sports Economics	**3**	**0**	**0**	**3**
ST 1512	Motor Sports Applications	**3**	**0**	**0**	**3**

ST 1513	Sports And Event Management	**3**	**0**	**0**	**3**
ST 1514	Applications of Statistics in Sports	**3**	**0**	**0**	**3**
ST 1515	Cell & Tissue Engineering	**3**	**0**	**0**	**3**
ST 1516	Sports Materials Engineering II	**3**	**0**	**0**	**3**
ST 1517	Race Car Vehicle Dynamics	**3**	**0**	**0**	**3**
ST 1518	Sports Facility Management	**3**	**0**	**0**	**3**
ST 1519	Sports Marketing	**3**	**0**	**0**	**3**
ST 1520	Soil And Ground Improvement Techniques	**3**	**0**	**0**	**3**

ST 1501 – APPLICATIONS OF STATISTICS IN BASEBALL

Course Objectives:

- To attain the skill in applying the maths especially statistics in the different sports to predict the success and maximum chance of winning technique.

UNIT I SIMPLE MODELS **9**

All – Star loose ball, APBA Model, Explosing hitting data – simple graphs, means, median measures of spread, comparing groups – Relationship between batting measures Ritching data

UNIT II PROBABILITY **9**

Probability models – A Coin – Toss model, observed and true OBPs, learning – about batting ability, estimating batting ability using a confidence interval

UNIT III SITUATIONAL EFFECTS **9**

Surveying the situation, two models for batting averages, situational effects models for situational effects, finding good models

UNIT IV STREAKINESS AND MEASURING OFFENSIVE PERFORMANCE **9**

Interpreting baseball data – Ziele's true hitting ability , team play great guest, infinitive techniques, OPS, TA,BRA,DX,RC

UNIT V STATISTICAL MODELS **9**

Finding weights for plays, least square linear regression (LSLR) , adding caught stealing to the LSLR model, Adding sacrifice flies to the LSLR model Lindsey – Palmer models – George Lindsey's analysis, palmer enters picture comparing LSLR and Lindsey – Palmer models.
DLSI simulation model, DLSI example, DLSI and runs per day.

UNIT IV PREDICTION AND MEASUREMENT 9

Measuring clutter play, calculation of win probabilities, player game percentage (PGP) prediction – simple prediction method prediction number of MCG wire and sosa home runs.

Total No. of periods : 45

Reference:

1. Jim albert, Jay Bennett, "Curve ball ", ,springer publication
2. Sadouskii.L.E & Sadirskii A L. "Mathematics and sports" University press 1998
3. L.R.Foulds, "Combinational optimization", Springer Verlag – 1984
4. Jim Albert, "Statistical winning in sports", Taylor & Francis, 2005

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand concepts of statistics in the different sports to predict the success and maximum chance of winning technique. various kinds of materials and its properties
	CO-2	Apply statistical techniques in different sports to predict the success and maximum chance of winning.
	CO-3	Optimize the results

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2	2							
2				3		2	2			
3			3	1		2				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		3
3	2	

ST 1502 - PHYSIOLOGY OF SPORTS AND EXERCISE

Course Objectives:

- To attain the knowledge in the athlete anatomy and biological science to apply the technology to measure and study the performance of the athlete.

UNIT I BASIC PHYSIOLOGY OF MOVEMENT 9

Introduction and Overview, Muscular Control of Movement, Neurological Control of Movement, Neuromuscular Adaptations to Resistance Training, Metabolism and Basic Energy Systems

UNIT II SYSTEMIC REGULATION OF EXERCISE 9

Hormonal Regulation of Exercise, Metabolic Adaptations to Training Cardiovascular Control During Exercise, Respiratory Regulation During Exercise.

UNIT III ENVIRONMENT AND TRAINING 9

Cardiorespiratory Adaptations to Training, Thermal Regulation and Exercise, Exercise in Hypobaric, Hyperbaric, and Microgravity Environments, Quantifying Sports Training.

UNIT IV NUTRITION AND ERGOGENIC AID 9

Ergogenic Aids and Performance, Nutrition and Nutritional Ergogenics, Optimal Body Weight for Performance, Growth, Development, and the Young Athlete.

UNIT V AGING AND EXERCISE PRESCRIPTION 9

Aging and the Older Athlete, Sex Differences and the Female Athlete, Prescription of Exercise for Health and Fitness, Cardiovascular Disease and Physical Activity Obesity, Diabetes, and Physical Activity.

Total No.of Periods : 45

Reference:

1. Mooren, Volker,"Modular and Cellular Exercise Physiology". Human Kinetics.
2. Katch, Katch, Mcardle, " Exercise Physiology", Williams and Willams
3. Dr.Sandhya Tiwari, " Exercise Phsiology", Sports

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Attain knowledge in anatomy and biological science.
	CO-2	Understand about training and the influence of environment on training
	CO-3	study and measure the effect of nutritional on optimal performance of the athlete

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			2						
2			2			1				
3			3			2			1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		3
2	3	
3		2

ST 1503 RACE ENGINE DESIGN FOR OPTIMAL PERFORMANCE

Course Objectives:

- To attain the knowledge in the engineering technique to optimize the performance of the vehicle in motor sports.

UNIT I: FUNDAMENTAL OF RACE CAR DESIGN 9

Fundamental mechanical quantities, Torque and Horsepower ,Slip Ratios, Constraints And Specifications of race engine, Design Process.

UNIT II: AERODYNAMICS FOR RACE ENGINE DESIGN 9

Aerodynamic Measurements, Measuring the Aerodynamic Downforce, Discussions On Bernoulli's Equations, Pressure Distribution, Aerodynamic Testing.

UNIT III: ENGINE DYNAMICS 9

Engine Configurations, Engine Characteristics,Carburetion & Fuel Injection.,Minimum Torque Required For Moving The Vehicle

UNITIV: INTRODUCTION TO RACE CAR CHASSIS 9

Types Of Chassis, Chassis Set-Up,Material Selection For Chassis,Strength To Weight Ratio Calculations,Design Aspects Of Different Compartments

UNITV: INTRODUCTION TO TIRE DYNAMICS 9

Tire Construction, Mechanics Of Force Generation, Tractive Properties, Total Wheel Loads, Determining Wheel Loads with Modal Analysis, Cornering Properties, Camber Thrust, Aligning Moment, combined Braking And Cornering, Tire Vibrations, Tire Spring Rates.

Course Outcomes

- .

Reference

1.William F.Milliken and Douglas L.Milliken, "Race Car Vehicle Dynamics", SAE Inc
2. Thomas D.Gillespie , "Fundamentals of Vehicle Dynamics', SAE Inc
3. M.L Mathur and R.P.Sharma, A Course in Internal Combustion Engines, Dhanpat Rai Publications
4. Jörge Segers "Analysis Techniques for Racecar Data Acquisition", SAE – Publications, 2007
www.sae.org

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds terminology in race engine
	CO-2	Acquire knowledge on race car design
	CO-3	Modify suitable design to increase performance and to avoid the injury.

3	**MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2	1							
2			3	2						
3			3		3	2	1		1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		3
2	2	
3		3

ST 1504 SPORTS EQUIPMENT MATERIALS

Course Objectives:

- To attain the knowledge in the application of the different engineering materials in the manufacturing of the sports equipments.

UNIT I: SPORTS MATERIALS 9

Adhesives- Nano glue, nano moulding technology, Nano turf, Foot wear production, Factors and application in sports, constraints. Foams- Polyurethane, Polystyrene, Styrofoam, closed-cell and open-cell foams, Neoprene, Foam Product Case Study. Engineering Polymers- Classification, application in sports, Smart Materials - Shape Memory Alloy (SMA), Thermo chromic film , d3o, Polymorph, Lenticular Sheet, High-density modelling foam, Motorcycle Gloves and d3o Case Study, applications

UNIT II : THERMOPLASTICS-I 9

Polycarbonate (PC), Polyhydroxyalkanoates (PHAs), Polyketone (PK), Polyester Polyethylene (PE), Polyetheretherketone (PEEK), Polyetherimide (PEI), Polyethersulfone (PES), Polyethylenechlorinates (PEC), Polyimide (PI), Polylactic acid (PLA), Polymethylpentene (PMP), Polyphenylene oxide (PPO), Polyphenylene sulfide (PPS), Polyphthalamide (PPA), Polypropylene (PP), Polystyrene (PS), Polysulfone (PSU), Polyvinyl

chloride (PVC), Polyvinylidene chloride (PVDC), Spectralon Acrylonitrile butadiene styrene (ABS). structures and applications in sports engineering.

UNIT III: THERMOPLASTICS-I **9**

Acrylic, Celluloid, Cellulose acetate, Ethylene-Vinyl Acetate (EVA), Ethylene vinyl alcohol (EVAL), Fluoroplastics (PTFEs, including FEP, PFA, CTFE, ECTFE, ETFE) Ionomers, Kydex, a trademarked acrylic/PVC alloy, Liquid Crystal Polymer (LCP) Polyacetal (POM or Acetal), Polyacrylates (Acrylic), Polyacrylonitrile (PAN or Acrylonitrile), Polyamide (PA or Nylon), Polyamide-imide (PAI), Polyaryletherketone (PAEK or Ketone), Polybutadiene (PBD), Polybutylene (PB), Polybutylene terephthalate (PBT), Polyethylene terephthalate (PET), Polycyclohexylene dimethylene terephthalate (PCT).

UNIT IV: FIBRES, FERROUS METALS **9**

High Tech Fibres- Carbon Fibre & Aramids, Uses and applications of Carbon Fibre in Sports, Formula One Car Monocoques Case Study.Resins- types , Composite resins and Thermoset resins, Most common and less common resins, Resin Reinforcement, case study, future uses. Ferrous Metals - Mild Steel, Cast Iron, Stainless Steel, application in sports. Alloys - Sheet form, Plate form and Extrusions, The Future For Metal Alloys

UNIT V: APPLICATION OF NANO TECHNOLOGY **9**

Applications in Medicine, Electronics, Space, Food, Fuel Cell, Solar Cells, Batteries, Fuels, Better Air Quality, Cleaner Water, Chemical Sensors, Sporting Goods with nano technology- Nanocomposite barrier film, Bicycle components strengthened with carbon nanotubes, Golf shafts with nanoparticles filling any voids in the shaft material, Golf balls using nano-enhanced polymer, ns^{tm} Tennis racquet frames containing carbon nanotubes , nCode^{tm} racquet frames containing silicon dioxide nanoparticles. Carrier areas and risks of nano technology.

Total No.of periods : 45

Course Outcomes:

- To apply different engineering materials in the manufacturing of the sports equipments.

Reference

1. John Mongillo, “Nano Technology 101 ” Green wood publishing group.
2. Mike Jenkins, Aleksandar Subic, “Materials in sports equipment” published by Woodhead publishing.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Gain in-depth knowledge on various kinds of materials and its properties
	CO-2	Apply specific materials for manufacturing different sports goods and equipments
	CO-3	Refer suitable materials to design and improve athlete performance and to avoid injury.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3		2							
2		3	2			2				
3			3	2	1					

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	
2	2	
3		2

ST 1505 SPORTS TRAUMATOLOGY

UNIT I SPORTS INJURY 9

Definition and meaning of sports injury – Classification of injuries. Definition, Causes, Features, Management and Prevention of the following injuries : Contusion – Abrasion – Laceration – Sprain – Strain – Fracture – Subluxation – Dislocation – Punctured wounds – Heat Cramp – Heat exhaustion – Heat Stroke – Frost Bite.

UNIT II INFECTIVE DISORDERS IN SPORTS 9

Infection – Types of infection – Mode of transmission – Definition, Causative Organism, Signs & Symptoms , Management and Prevention of Common Cold – Amoebiasis – Salmonellasis – Tetanus - Typhoid – Cholera – Tuberculosis - Malaria - Filariasis – Hepatitis B - Hepatitis A - AIDS.

UNIT III FIRST AID IN SPORTS **9**

Definition of first aid - Qualities of good first aider - Principles of first aid - Contents of first aid box - Safety and accident prevention in sports – Definition, types and management of Shock - First aid measures in Head injury and Spine Injury, Bleeding, Burns, Drowning, Epilepsy, Electrical shock – Cardio Pulmonary Resuscitation.

UNIT IV SPORTS INJURY REHABILITATION **9**

Principles of injury prevention – Warm up and cool down – Stretching – Static, Dynamic, Ballistic, PNF stretching. Principles of rehabilitation – Muscle conditioning – Flexibility – Proprioceptive sports skills – Cardiovascular fitness – Progression and stages of rehabilitation. Physiotherapy – Exercise Therapy, Electrotherapy, Hydrotherapy, Massage Therapy, Manual Therapy.

UNIT V PROTECTIVE EQUIPMENTS IN SPORTS **9**

Protective Equipments – Materials used – Helmets – Protective Equipments of Face – Neck Protection – Shoulder pads – Rib and flank pads – Chest protection – Hip pads –Thigh Pads – Knee protection – Shin Guards – Ankle braces – Hand pads – Footwear – Orthotics and Prosthetics in sports.

Total No. of periods : 45

References :

1. Lars Peterson and Per Renstron: Sports Injuries – Their prevention and treatment, Dunitz.
2. Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
3. Bahr, Clinical Guide to Sports Injuries – Human Kinetics
4. Norris, Sports injuries Diagnosis and Management - Butterworth
5. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
6. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of sports injuries and its prevention
	CO-2	Acquire knowledge on different protective device on sports equipments

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1			1			
2		2	3			2	2		1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		2

ST1506 - SOFTWARE IN SPORTS

Course Objectives:

- To gain knowledge in present trending software for the analysis and prediction of the athlete performance and for sports safety.
-

UNIT I STASTICAL PACKAGES

SPSS-Introduction-software in spss-versions-applications-ANNOVA-introduction-design of experiments-classes of models-characteristics-applications-REGRESSION-introduction-models-types of regression-applications-comparison of stastical packages-applications.

UNIT II GAIT ANALYSIS & CUTTING EDGE TECHNOLOGY

Gait analysis-introduction-process&equipment-techniques-factors&parameters-applications-Cutting edge technology-introduction-how it used-innovations-applications

UNIT III HAWKEYE & GOAL LINE TECHNOLOGY

Hawkeye-introduction-methods of operation-implementation in sports-Goal line technology-introduction-principles-mode of operation

UNIT IV TOOLS

Hot spots-introduction-operation principles-Wagon wheel-introduction-operation-components used- Snickometer -introduction- principles- Accelerometer-introduction-principles-operation-umpire decision review system-procedures

UNIT V OTHER TOOLS & TECHNIQUES

Simulation-principles-implementation- procedures- various applications-factors-CFD-principles-procedures-applications-performance analysis-procedures-video analysis-

techniques-procedures-implementation in various sports-volleyball-baseball-tennis-athletes-others.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of software used in sports
	CO-2	Apply suitable software for analysis and prediction of athletes performance and for error free decision making in sports and games.
	CO-3	Carryout project works

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3				3					
2		3	2		3					
3			3	3		3			1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	
2		1
3	2	

ST 1507 SPORTS PSYCHOLOGY: ISSUES AND APPLICATIONS

UNIT I- SYCHOLOGICAL MEASUREMENT OF INDIVIDUAL DIFFERENCES: 9

The nature of individual differences; Characteristics and construction of standardized psychological tests; Types of psychological tests; Use, misuse and limitation of psychological tests; Ethical issues in the use of psychological tests.

Psychological Well Being And Mental Disorders: Concept of health-ill health; Positive health, well being; Causal factors in mental disorders (Anxiety disorders, mood disorders, schizophrenia and delusional disorders; personality disorders, substance abuse disorders); Factors influencing positive health, well being, life style and quality of life; Happiness disposition.

UNIT – II THERAPEUTIC APPROACHES: 9

Psychodynamic therapies; Behaviour therapies; Client centered therapy; Cognitive therapies; Indigenous therapies (Yoga, Meditation); Bio-feedback therapy; Prevention and rehabilitation of the mentally ill; Fostering mental health.

Work Psychology and Organisational Behaviour: Personnel selection and training; Use of psychological tests in the industry; Training and human resource development; Theories of work motivation – Herzberg, Maslow, Adam Equity theory, Porter and Lawler, Vroom; Leadership and participatory management; Advertising and marketing; Stress and its management; Ergonomics; consumer psychology; Managerial effectiveness; Transformational leadership; Sensitivity training; Power and politics in organizations.

UNIT III APPLICATION OF PSYCHOLOGY IN INFORMATION TECHNOLOGY AND MASS MEDIA: 9

The present scenario of information technology and the mass media boom and the role of psychologists; Selection and training of psychology professionals to work in the field of IT and mass media; Distance learning through IT and mass media; Entrepreneurship through e-commerce; Multilevel marketing; Impact of TV and fostering value through IT and mass media; Psychological consequences of recent developments in Information Technology.

UNIT IV PSYCHOLOGY AND ECONOMIC DEVELOPMENT 9

Achievement motivation and economic development; Characteristics of entrepreneurial behaviour; Motivating and training people for entrepreneurship and economic development; Consumer rights and consumer awareness, Government policies for promotion of entrepreneurship among youth including women entrepreneurs.

UNIT V APPLICATION OF PSYCHOLOGY TO ENVIRONMENT AND RELATED FIELDS 9

Environmental psychology-effects of noise, pollution and crowding; Population psychology: psychological consequences of population explosion and high population density; Motivating for small family norm; Impact of rapid scientific and technological growth on degradation of environment.

Application of psychology in other fields: Sports Psychology -Psychological interventions in improving performance of athletes and sports. Persons participating in Individual and Team Games.

Total No. of periods : 45

Reference

1. Graham Jones, J. Graham Jones, Lew Hardy, Daniel Gould, "Understanding Psychological Preparation for Sports" John Wiley & Sons Inc , 1994
2. *Stephen Mellalieu, Sheldon Hanton* Advances in Applied Sport Psychology, Routledge 2008.
3. *Arnold LeUnes,* Sport Psychology, Psychology Press (formerly published by Lawrence Erlbaum Associates) 4th Edition
4. Morgan & King, "Introduction to Psychology "McGraw-Hill Book Co., 1971
5. Coleman, James C , "Abnormal Psychology and Modern Life", Pearson Scott Foresman, 6th edition, 1980.
6. Milton L Blum, James C Naylor, "Industrial Psychology: Its Theoretical and Social Foundations (Hardcover)" Harper & Row (Dec 1968).
7. B. Kuppuswamy (1990) " Elements of. Social Psychology" , Konark Publishers Pvt Ltd, 7th Edition. 1990

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Gain knowledge on • Psychology on economy issues • Psychology on environmental issues • Ethical and mental health
	CO-2	Improve individual personality

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3						2			
2				1		1		3		2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1
2	2	

ST 1508 SURVEYING AND CONSTRUCTION MATERIALS

Course Objectives:

- To attain the better sound in development of the different sports facility and the

infrastructure

UNIT I – INTRODUCTION AND CHAIN SURVEYING 8

Definition - Principles - Classification - Field and office work - Scales - Conventional signs - Survey instruments, their care and adjustment - Ranging and chaining - Reciprocal ranging - Setting perpendiculars - well - conditioned triangles - Traversing - Plotting - Enlarging and reducing figures.

UNIT II – COMPASS SURVEYING, LEVELLING AND APPLICATIONS 12

Prismatic compass - Surveyor's compass - Bearing - Systems and conversions - Local attraction - Magnetic declination - Dip - Traversing - Plotting - Adjustment of errors - Level line - Horizontal line - Levels and Staves - Spirit level - Sensitiveness - Bench marks - Temporary and permanent adjustments - Fly and check levelling - Booking - Reduction - Curvature and refraction - Reciprocal levelling - Longitudinal and cross sections - Plotting - Calculation of areas and volumes - Contouring - Methods - Characteristics and uses of contours - Plotting - Earth work volume

UNIT III – ENGINEERING SURVEYS 12

Reconnaissance, preliminary and location surveys for engineering projects - Lay out - Setting out works - Route Surveys for highways, railways and waterways - Curve ranging - Horizontal and vertical curves - Simple curves - Setting with chain and tapes, tangential angles by theodolite, double theodolite - Compound and reverse curves - Transition curves - Functions and requirements - Setting out by offsets and angles - Vertical curves - Sight distances

UNIT V – CONSTRUCTION MATERIALS 9

Stone as building material – Criteria for selection – Tests on stones – Deterioration and Preservation of stone work – Bricks – Classification – Manufacture of clay bricks – Tests on bricks – Compressive Strength - Water Absorption – Efflorescence –Bricks for special use – Refractory bricks – Cement and Concrete hollow blocks – Light weight concrete blocks - Lime – Preparation of lime mortar – Cement. Ingredients – Manufacturing process – Types and Grades – Properties of cement and Cement mortar – Aggregates – Natural stone aggregates – Industrial by products – Crushing strength – Impact strength – Grading – Sand – Bulking .

Reference:

1) R. K. Rajput, "Engineering Materials", S. Chand & Company Ltd., 2000.
2) M. S. Shetty, "Concrete Technology (Theory and Practice)", S. Chand & Company Ltd., 2003
3) Kanetkar T.P., Surveying and Levelling, Vols. I and II, United Book Corporation, Pune, 1994.
4) Punmia B.C. Surveying, Vols. I, II and III, Laxmi Publications, 1989

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the significance of various kinds of tools used for development of sports facility and infrastructure
	CO-2	Apply various tools for development of different sports facility and infrastructure
	CO-3	Gain knowledge on construction materials to increase athlete performance and to avoid the injury.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	1		1						
2		3		2		3				1
3			3				2		2	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	
2		2
3	2	

ST 1509 - APPLIED BIOMATERIALS IN SPORTS TECHNOLOGY

Course Objectives:

- To develop knowledge in the application of different biomaterial implantation for athlete in the sports.

UNIT I INTRODUCTION **9**

Definition of biomaterials, requirements of biomaterials, classification of biomaterials, Comparison of properties of some common biomaterials. Effects of physiological fluid on the

properties of biomaterials. Biological responses (extra and intra-vascular system). Surface properties of materials, physical properties of materials, mechanical properties.

UNIT II METALLIC IMPLANT MATERIALS 9

Metallic implant materials - Stainless steel, Co-based alloys, Ti and Ti-based alloys. Importance of stress-corrosion cracking. Host tissue reaction with biometal, corrosion behavior and the importance of passive films for tissue adhesion. Hard tissue replacement implant: Orthopedic implants, Dental implants. Soft tissue replacement implants: Percutaneous and skin implants, Vascular implants, Heart valve implants-Tailor made composite in medium.

UNIT III POLYMERIC IMPLANT MATERIALS 9

Polymeric implant materials - Polyolefins, polyamides, acrylic polymers, fluorocarbon polymers, silicon rubbers, acetals. (Classification according to thermosets, thermoplastics and elastomers). Viscoelastic behavior: creep-recovery, stress-relaxation, strain rate sensitivity. Importance of molecular structure, hydrophilic and hydrophobic surface properties, migration of additives (processing aids), aging and environmental stress cracking. Physiochemical characteristics of biopolymers. Biodegradable polymers for medical purposes, Biopolymers in controlled release systems. Synthetic polymeric membranes and their biological applications.

UNIT IV CERAMIC IMPLANT MATERIALS 9

Ceramic implant materials- Definition of bioceramics. Common types of bioceramics: Aluminium oxides, Glass ceramics, Carbons. Bioresorbable and bioactive ceramics. Importance of wear resistance and low fracture toughness. Host tissue reactions: importance of interfacial tissue reaction (e.g. ceramic/bone tissue reaction). Composite implant materials - Mechanics of improvement of properties by incorporating different elements. Composite theory of fiber reinforcement (short and long fibers, fibers pull out). Polymers filled with osteogenic fillers (e.g. hydroxyapatite). Host tissue reactions.

UNIT V BIOCOMPATIBILITY & TOXICOLOGICAL SCREENING OF BIOMATERIALS 9

Biocompatibility & toxicological screening of biomaterials-definition of biocompatibility, blood compatibility and tissue compatibility. Toxicity tests: acute and chronic toxicity studies (in situ implantation, tissue culture, haemolysis, thrombogenic potential test, systemic toxicity, intracutaneous irritation test), sensitization, carcinogenicity, mutagenicity and special tests.

Sterilisation techniques - ETO, gamma radiation, autoclaving. Effects of sterilization on material properties.Testing of biomaterials/Implants - *In vitro* testing (Mechanical testing): tensile, compression, wears, fatigue, corrosion studies and fracture toughness. *In-vivo* testing (animals): biological performance of implants. *Ex-vivo* testing: *in vitro* testing simulating the *in vivo* conditions. Standards of implant materials.

Total No.of Periods : 45

Course Outcomes:

- Able to apply knowledge in the application of different biomaterial implantation for athlete in the sports medicine.

Reference

1. *J B Park, Biomaterials - Science and Engineering, Plenum Press , 1984.*
2. *Sujata V. Bhat, Biomaterials, Narosa Publishing House, 2002.*
3. *Jonathan Black, Biological Performance of materials, Marcel Decker, 1981*
4. *C.P.Sharma & M.Szycher, Blood compatible materials and devices, Technomic Publishing Co. Ltd., 1991.*
5. *Piskin and A S Hoffmann, Polymeric Biomaterials (Eds), Martinus Nijhoff Publishers. (Dordrecht. 1986)*
6. *Eugene D. Goldbera , Biomedical Ploymers, Akio Nakajima.*
7. *A . Rembaum & M. Shen, Biomedical Polymers, Mercer Dekkar Inc. 1971*
8. *Lawrence Stark & GyanAgarwal , Biomaterials*
9. *L. Hench & E. C. Ethridge, Biomaterials - An Interfacial approach.*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the significance of various kinds implant of materials and its properties
	CO-2	Apply specific implant materials for defective human parts
	CO-3	Gain knowledge on biocompatibility

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3									1
2		3	3			2				
3							3		1	

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

(CO)	1	2
1		2
2	2	
3		3

ST1510 - COMMERCIALISATION OF SPORTS

Course Objectives:

- To develop the entrepreneurship and management skill in the sport industry and private and public sector organisation.

UNIT I SPORTS INDUSTRY **9**

Sports in the late capitalist movement- sporting goods industry- Struggling entrepreneurs – National Business- Transnational corporations- Sports globalization- State and problem of governance.

UNIT II PUBLIC SECTOR AND SPORTS **9**

Government subsidization – private control of civic asset – partnership between local government and leisure departments and commercial sector changes – complexities and consequences.

UNIT III AMATEUR **9**

Piercing the veil of amateurism commercialization – Corruption and US college sports. Strategic responses to institutional pressures for commercialization- A case study of an English Rugby Union Club. – Commercialisation of the modern Olympics.

UNIT IV TELEVISIONAL AND COMMERCIALISATON OF SPORTS **9**

Media sport- globalization and the challenges to commercialisaton- Sports advertising and cultural resistance in Aotearoa/New Zealand.- Televised sport in global consumer age- Media Ownership of teams- The latest stage in the commercialization of team sports.

UNIT V SPORTS SPONSORSHIP **9**

Critical perspective on sport sponsoring- spectator sport's strange Bed fellows. – The commercial sponsorship of sporting events to promote Alcohol- Tobacco and Lotteries.- Let the market decide- Sport sponsorship and its implications for Moral Autonomy.

Total No Of Periods: 45

Course Outcomes:

- Able to apply entrepreneurship and management skill in the sport industry and government organisation.

Reference:

1. Trevor Slack, "The commercialization of sport", Routledge Publication, 2005

2. Franz Konstantin Fuss**,** Aleksandar Subic**,** Sadayuki Ujihashi "*The Impact of Technology on Sport II"* Taylor and Francis 2007

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various issues in commercialising sports
	CO-2	Gain significant knowledge about the role of television and sports sponsorers on commercialising sports
	CO-3	The ethical issues pertaining to commercialisation of sports
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2								
2		3		2		2	3			
3									3	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		
3		

ST1511 - SPORTS ECONOMICS

Course Objectives:

- To attain skill in Market, opportunity, labour relation, taxation and legal issue on sports industry.

UNIT I: DEMAND SUPPLY, AND SPORTS MARKET OUTCOMES 9

Demand and Sports Revenue - The Market for Sports Broadcast Rights - Team Cost, Profit, and Winning - Leagues, Team Location, Expansion, and Negotiations - Leagues and Competitive Balance.

UNIT II : THE MARKET FOR TALENT AND LABOR RELATIONS 9

The Value of Sports Talent - The History of Player Pay - Labor Relations in Pro Sports Government Subsidies and Economic Impact Analysis - The Stadium Mess - Taxes, Antitrust, and Competition Policy.

UNIT III: SPORTS PSYCHOLOGY AND LEGAL ISSUES 9

Psychological interventions in improving performance of athletes and sports. Persons participating in Individual and Team Games. Media influences on pro and antisocial behaviour. National and International Law regarding sports.

UNIT IV: SPSS SOFTWARE FOR SPORTS ENGINEERING 9

Online analytical processing- Descriptive statistics – Customer tables- Basic, general, multiple tables – Compared means, ANOVA- General linear model- Univariate, Multivariate.- Regression linear – Relability anaysis, Non parametric Tests- Chi Square- Independent Samples.

UNIT V: SPSS APPLICATION FOR SPORTS ENGINEERING 9

Chart and Tables – Graphs, Bar, Line, Area, pie, Pareto Boxplots, Error bars, scatter histogram, chart options, services, format, edit, view, insert pivot.
Miscellaneous Options – Utilities, variables, file info, define sets, use sets,Run, Window, Page break, insert old graph.

Total No.of Periods : 45

Course outcomes:

- Able to apply skill in Market, opportunity, labour relation, taxation and legal issue on sports industry.

Reference:

1. Nikos Ntoumanis “SPSS for Sport and Exercise Studies - A Step-by-Step Guide for Students”.

2. Peter Taylor**,** Chris Gratton “The Economics of Sport and Recreation- An Economic Analysis” Taylor and Francis

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Gain significant knowledge on ● Market trends and Opportunity, ● labour relation, ● taxation and legal issue on sports industry.
	CO-2	Apply SPSS tool to predict and analyse sports industry .

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3		2							
2		1	3		3				3	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	
2		2

ST1512 MOTOR SPORTS APPLICATIONS

Course Objectives:

To impart knowledge about racing vehicle behavior and various technologies used in motorsports.

Instructional Objectives

At the end of the course, student will be able to

1.

UNITI: RACE CAR DESIGN AND DEVELOPMENT

Problems Imposed By Racing, Racing Objective, "g-g" Diagram.Constraints And Specifications ,Performance, Handling, Structure.Driver Accommodation And Safety, Tires.

Adjustable Features, Preliminary Design And Analysis.Driver-Vehicle Relationship.Desirable Vehicle Characteristics, Fundamentals Of Testing.Track Test Program Planning And Test Methodology.General Notes On Development–Circular Skid Pad Testing.

UNITII: RACE CAR AERODYNAMICS

Aerodynamic characteristics, Aerodynamic Force And Moment, Race Car Drag Components, Drag Improvement And Estimation. aerodynamic Development of a Vehicle,Ground Effects And Ground-Plane Simulation In Race Car Applications.Spoiler, Dams, Wings Effectiveness Of Wings In Steady State Cornering.High Lift Devices-Flaps And Slats. Flow ControlDevices-Dams ,Fences, Vanes, Skirts, Spoilers.Vortex Creating Devices-Ledges, Edges, Cusps, Lips.Pressure Change Creation Devices-Perforations, Vents, Bleeds, Scoops, Seals.Air-Foil Devices-Slats, Flaps, End Plates, Cuffs, Fillets, Trips.Active Flow Control Devices-Internal Airflow.

UNITIII: RACE CAR CHASSIS

Conditions For Traversing A 90° Corner, Principle Chassis Tuning Items.Effects Of High Speed Braking, Cornering, Combined Braking Cornering.Steady State Cornering, Acceleration Out Of A Corner, Straight Line Acceleration.Throttle Behaviour, Steering Wheel Force And Kick Back.Moving CG Position, Roll Center Position Changing Anti-Pitch Geometry.Chassis Steering Axis Geometry, Changing Camber.Chassis Ride Roll Characteristics, Chassis Track Width.Chassis Ride Spring Rate, Tires And Rims, Adjusting Roll Stiffness And Roll Stiffness Distribution

UNITIV: RACE CAR SUSPENSION SYSTEM

Front Suspension-General Design Issues, Camber Effects.SLA Suspension, McPherson Struts.Independent Rear Suspensio-Trailing Arm Types, Instant Axis Concept.SLA Rear Suspension, Beam Axle Rear Suspensions.Torque Tube And Torque Arm Suspension, Decoupled Rear Axle SuspensionSuspension Springs-Torsion Springs, Coil Springs, Progressive Rate Coil Springs.Leaf Springs, Types, Installation Consideration, Inter Leaf Friction, Spring Fatigue. Damping In Racing-Ride/Handling Compromise, Steering Activity, And Transient Manoeuvring, Bump Damping And Rebound Damping.

UNITV: RACE CARDRIVES AND BRAKING SYSTEMS

Merits Of Front, Rear And Four-Wheel Drive In Racing.Differentials Used In Racing-Open Differentials, Locked (Spool), Limited Slip Differentials.Traction Control And Other Electronic Improvements In Racing..Mechanical Components In Braking System.Limitations And Considerations Of Braking In Racing.Brake Boost, Effects Of “g” Force On Brake Fluids. Brake Hydraulics,Ventilation.Brake Distribution, ABS In Racing.arbon-Carbon discs.

Course Outcomes:

To impart knowledge about racing vehicle behaviour and various technologies used in motorsports.

Reference

1. William F.Milliken and Douglas L.Milliken, “Race car vehicle dynamics”, 11th edition, SAE, 1995.

2. Peter Wright, “Formula 1Technology”,2001.
Reference Books/Other Reading Material

3. Thomas D. Gillespie, “Fundamental of Vehicle Dynamics, Society of Automotive Engineers”, USA 1992.

4. Wolf-Heinrich Hucho, “Aerodynamics of road vehicles”, 4th edition, 2000

5. Jörge Segers “Analysis Techniques for Race car Data Acquisition”, SAE – Publications, 2007
6. www.sae.org
7. www.annualreviews.org/aronline

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the fundamentals of racing vehicle characteristics.
	CO-2	. Understand aerodynamic requirements in racing vehicles
	CO-3	Understand the concepts of chassis behavior of racing vehicles.
	CO-4	Gain knowledge about the concepts of suspension characteristics of racing vehicles.
	CO-5	Understand the problems faced in drives and braking systems in motorsports
3	**MAPPING (CO’s and PO’s)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2								
2		3	2							
3		2	3							
4			2							1
5							3		2	

MAPPING (CO’s and PSO’s)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2	2	
3		3
4		
5	3	

ST1513 SPORTS AND EVENT MANAGEMENT

UNIT I INTRODUCTION 9

Parameters and definition, history of sports, trends in sports paorticipation, pricing of sports participation, the economic impact of sports, sports clubs. Sports club's effectiveness, issues facing sport, trends affecting sports. The role and importance of sport in our society, the benefit of sports, the aim and objectgivees of sport, current issues, sports and society, sport and health.

UNIT II THE VOLUNTARY SECTOR AND LEADERSHIP 9

Voluntary organizations, sports is a voluntary concept, voluntary ethos, voluntary sports organizations, management of sports organizations, the nature of voluntary organizations, organizsational structures and personalities, governing bodies volunteerism and change, voluntary commitment paid staff dynamic, to retain volunteers, the many roel of sports development officer. Leadership – Transactional or transroamationa, leadership qualities in sports situation. Partnership ana liasions, agenecies involved in sports.

UNIT III PEOPLE AND ORGANISATIONAL MANAGEMENT 9

Performance appraisal, managing people, what makes a manager, staff app;raisal, staff motivation, delegation, communication, getting the right people, team building team development, personel management. The role of the sports manager, general management approaches, quality management, strategic management, measuring performance, the complexity of sports management, plannint, objectives, control, organizational changers, the management of change, decision making.

UNIT IV MANAGEMENT IN PRACTICE AND CHALLENGES 9

Management process, financial management, legislation, management of safety, health and safety at work, managing support services, administration, the management of sport as a public service. Challenges – citizens charter, competition, best value, financial control, national standards, pressure for change, voluntary input and management, philosophical challenges, investors in people, leisure trusts, ageing facilities, performance indication.

UNIT V MARKETING, EVENT MANAGEMENT, EDUCATION AND TRAINING AND PERSONAL SKILLS 9

Marketing ethics, maketing participation, implementing the marketing process, marketing activites, public relations, fund raising, sports spornsorship. Event management – Event feasibility, event planning, event requirements, characteristics of the best events, event evaluation. Education and training – Coaching awards, education versus training, sports management education, running sport, volunteering in sports. Personal Skills – Time management, time management action plan, managing meetings, meetings in practice, personal management.

Total No.of Periods : 45

Reference

1. Hans Westerbeek**,** Aaron Smith**,** Paul Turner**,** Paul Emery**,** Christine Green**,** Linda van Leeuwen "Managing Sport Facilities and Major Events", Routledge July 2006

2. David C Watt "Sports Management and Administration", Routledge, Taylor & Francis Group, 2003

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of management concepts
	CO-2	Apply specific leadership styles different state
	CO-3	Modify suitable management skills for different sports event organization

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3									
2										
3										

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	
2		
3		3

ST1514 - APPLICATIONS OF STATISTICS IN SPORTS

Course Objectives:

- To attain the skill in applying the maths especially statistics in the different sports to predict the success and maximum chance of winning technique.

UNIT I STATISTICS IN FOOTBALL **9**

Introduction use of sports in teaching statistics . Football articles, Geometry model for NFL fixed goal kickers .predictions for NFL games via linear – model methodology , probability of winning a football game

UNIT II STATISTICS IN BASEBALL **9**

Introduction to baseball articles – exploring baseball hitting data – player game percentage, estimation with selected binomial information – progress of the score during a baseball game

UNIT III - STATISTICS IN BASKETBALL **9**

Introduction to basketball articles – Improved NCAA basketball Tournament modeling via point spread and team strength information, probability models for basketball tournaments

UNIT IV – STATISTICS IN ICE HOCKEY & MISCELLANEOUS SPORTS **9**

Introduction to ice hockey articles – statistical methods for rating college hockey teams ,deciding ties in hockey rating skating, estimating the effect of a red card in soccer, heavy defeats in tennis – psychological momentum or random effect.

UNIT V – STATISTICAL METHODOLOGIES AND MULTIPLE SPORTS **9**

Introduction to the methodologies and multiple sports articles, bridging different Eras in sports, Data analysis using stein's estimator and its generalizations, assigning probabilities to outcomes of multi – entry competitions, basketball, baseball and the null hypothesis lessons from sports statistics, TQM in athletic performance, Brownian motion model for the progress of sports scores.

Total No. of Periods: 45

Course Outcomes:

- .

Reference :

1. Jim Albert, Jay Bennett, James J.cochran, "Anthology of statistics in sports" – Cambridge university press – 2005
2. Jim Albert, "Teaching statistics using baseball", mathematical association of America
3. Jim Albert, Jay Bennett, "Curve Ball Baseball statistics and the role of chance in the game" Springer - 2005

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Acquire the knowledge of basic statistics concepts and planning aspects
	CO-2	Apply TQM in athletic performance
	CO-3	Derive mathematical model for different sports activities and assess the reliability of the modeled sports activities
	CO-4	Apply the knowledge of reliability and planning concepts to the practical and real time systems.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2								
2		3								
3			3		2		1			
4				3		3	2			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

1		
2	3	
3		3
4	2	

ST 1515 - CELL & TISSUE ENGINEERING

UNIT-I INTRODUCTION **9**

Definition, meaning of Tissue Engineering, Need and Importance of Tissue Engineering, Cell and its functions /Cell division-Mitotic cell division - Misosis cell division, Types of cell and Types, Tissues -Tissue Repair, Tissue dynamics as Interaction cellular-Fate processes.

UNIT-II STEM CELLS **9**

Definition – function- characteristics- Types of Stem cells - Mesenchymal stem cell, Liver stem cell, Neuronal stem cell, Embryonic stem cell, Function of stem cells system, Cell differentiation, Cell Migration and its process, Cell Death

UNIT-III COMMUNICATION **9**

Cell- Cell communication- Soluble Signaling, Types of Growth Factor and chemo kinetics and its activity , Cell- Extracellular matrix interaction, Binding to the ECM, Direct Cell-cell contents

UNIT-IV TISSUE CULTURE **9**

Definition of cell culture, Types of tissue culture ,Tissue culture environment, Biomaterial scaffolds- definition, types, of scaffold.

UNIT-V CLINICAL IMPLANTATION **9**

Clinical therapy-(i) Medical therapy (ii) Surgical therapy-Repair-Replacement, Tissue Engineered Therapies - Mesodermal tissue case study- Articular cartilage - Ectodermal tissue case study –skin -Endodermal tissue case study- Liver -Wound healing response – Angiogenesis -Immune response - Basics of immunity-specific immunity-mechanisms of graft rejection-strategies for modifying the immune response.

Text book:

TISSUE ENGINEERING – Bernhard O. Palsson, and Sangeetha N. Bhatia .Dorling Kindersley India-2009.

Total No.of Periods 45

Reference

1. *J B Park, Biomaterials - Science and Engineering, Plenum Press , 1984.*
2. *Sujata V. Bhat, Biomaterials, Narosa Publishing House, 2002.*
3. *Jonathan Black, Biological Performance of materials, Marcel Decker, 1981*
4. *C.P.Sharma & M.Szycher, Blood compatible materials and devices, Technomic Publishing Co. Ltd., 1991.*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the concepts of cell and tissue and its properties
	CO-2	Gain significant knowledge on cell communication and culture

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	1								
2		3	1			2				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		3

ST 1516 SPORTS MATERIAL ENGINEERING -II

Course Objectives:

- To attain the knowledge in the science of the behaviour of the different materials application in the sports.

UNIT I MAERIAL IN CRICKET **9**

Introduction –cricket balls-cricket bat-protective equipment in cricket-future trends-conclusions

UNIT II MATERIAL IN PARALYMPIC SPORTS **9**

Introduction-physical disabilities-devices and materials used in Paralympics sports-considerations and limitations in design and materials based on Paralympics' sport regulation

UNIT III MATERIAL IN GOLF **9**

Introduction-role of the face-oversized golf drivers-head design criteria-construction effects-frequency spectrum testing-test variables-CoR –frequency relationship-variability within a single club type-design trends-further work-conclusions.

UNIT IV MATERIALS IN SKIING & BALLISTICS **9**

Introduction- the impact of technology-contribution of materials & manufacturing – development of competitive & recreational skiing-future trends. Ballistics –introduction-basic aerodynamic principles of cricket-tennis-baseball-discus-javelin-golf-soccer-volleyball-boomerang-furture trends.

UNIT V FOAM PROTECTION & PERFORMANCE OF SPORTS SURFACES **9**

Introduction-static foam protection products-rigid foam foam protection for sports wear-cycle helmets-soccer shin and ankle protectors.Introduction of surface performance-measurement of surface performance-diversity of sports surface-sports specific surfaces.future developments.

Total no.of.periods:45

Course Outcomes:

- To attain the knowledge in the science of the behaviour of the different materials application in the sports.

Reference

1. Mike Jenkins, Aleksandar Subic, "Materials in sports equipment" published by Woodhead publishing.
2. John Mongillo, "Nano Technology 101 " Green wood publishing group.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of materials and its properties
	CO-2	Gain specific materials knowledge for manufacture of the different sports apparel and equipments
	CO-3	Apply suitable materials to increase athlete performance and to avoid th injury during sporting activities.

3	**MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3									
2		3					1			
3			3			2		1		1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		1
3	2	

ST 1517 RACE CAR VEHICLE DYNAMICS

Course Objectives:

- To attain the knowledge in the engineering technique to optimize the performance of the vehicle in motor sports.

UNIT I TIRE BEHAVIOUR,AERO FUNDAMENTALS,AXIS SYSTEM 9

Tire behaviour-lateral,longitudinal,tire force-chamber effects,other effects,combined operation-aliging torque,pneumatic trail,torque wheel spin axis-aerodynamics fundamentals-properties of air,bernoulli,s equation,pressure difference&its coefficient,aerodynamics force&its testing-vehicle axis system-vehicle motions,two types of axis system.Tire data treatment-pure slip & combined slip characteristics

UNIT II SIMPLIFIED STEADY STATE AND TRANSIENT STABILITY 9

Steady state-low speed geometry, under, neutral, over steer car, responses & its data, non-linear analysis, path curvature stiffness, neutral steer, over steer & under steer responses, physical significance. Transient stability-response data, spring-mass-damper system, single & two degree of freedom automobile, early approach, advanced models

UNIT III STEADY STATE ANALYSIS & FORCE MOMENT ANALYSIS 9

Steady state pair analysis-procedure, MRA computer programme, lateral load transfer-Force moment analysis-computer programme ,limit behaviour, constrained testing, moment methods, CN-AY,N-AY sports car chasis, lap time analysis.

UNIT IV RACE CAR DESIGN, TESTING AND DEVELOPMENT & CHASIS SET UP **9**

Race car design-design process, constraints specification-g-g diagram-conceptual development, vehicle capability, race car applications, general uses. Driver-vehicle relationship, fundamentals of testing, desirable vehicle characteristics, track test programme circular skid pad testing,test methodology-chasis set up-primary& secondary set up.

UNIT V TOOLS OF RACE CAR **9**

Ride roll rates- definitions, installation ratios,1st & 2nd examples-Dampers-technical approach-fundamentals, application-Driving braking-brake systems , merits of front,rear,4 wheel drive-Wheel loads-chassis stiffness, effects of banking, asymmetrical& terrain effects-Steering system-steering geometry, gears, Ackermann geometry, alignment-Suspension geometry & springs-degrees of freedom, beam-independent-front suspensions-twist rear, beam rear, independent rear suspensions.

Course Outcomes:

- Able to apply engineering technique to optimize the performance of the vehicle in motor sports.

Reference

Race Car Vehicle Dynamics. William F. Milliken and Douglas L. Milliken.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Exhibit the knowledge in • Tire behaviour • Transient stability • Steady state pair analysis
	CO-2	Apply the concept learned to design and testing of a race car
	CO-3	Modify suitable design changes to increase athlete performance and to avoid injury.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2								
2		3			2		1			
3			3	2		3			1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		1
3	1	

ST 1518 SPORTS FACILITY MANAGEMENT

Course Objectives:

- To understand facility management and to impart knowledge on effective utilization sports facilities while conducting different sports activities.

UNIT I FACILITY MANAGEMENT **9**

Facility Management: Meaning-The Facility manager-Constitutents managerial functions-Computer Aided Facility Management-Strategies-Leadership-Out sourcing.

UNIT II FACILITY PLANNING **9**

Facility Planning: Fundamentals-Planning for existing and Future facilities-facility site and design: Site location-site cost-site selection- Facility design and construction-construction planning and elements-project cost-completion and analysis.

UNIT III FACILITY SYSTEM **9**

Facility Systems: Heating, Ventilation and Air conditioning-Energy systems-Interior and Exterior Systems. Space management-Facility Repair Management: Maintenance Repair Program-Basic maintenance.

UNIT IV FACILITY MARKETING **9**

Facility marketing-Sales-Financial concepts-Revenue and Expenses-Budgeting-New Facility Financing – Selling of a Facility –Sport Facility Jobs-Employment Management-Training – Risk Management and Insurance.

UNIT V FACILITY PREPARATION **9**

Facility Preparation: Attracting Events-event preparation-Implementing a Security plan: Crowd management-Crisis Management-Event management in the Facility: Marketing for the future.

Reference:

Gil Fried, Managing Sport Facilities, Human Kinetics

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Learn about • Concepts of facility management • facility planning • facility marketing • Facility Preparation
	CO-2	Apply the different sports facility management techniques to organize various sports activities effectively
	CO-3	Analysis sports performance through facility management

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3			1						

	2		2	2				3			
	3			3	2		2				1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	
2		2
3		3

ST 1519 SPORTS MARKETING

Course Objectives:

- To impart knowledge on marketing and to study about various sports marketing techniques and opportunities

UNIT I SPORTS MARKETING **9**

Definition-Marketing Myopia in sport-Uniqueness of sports marketing-Model of the Sports Industry-Implementation of Sports Marketing Programme.

UNIT II PERSPECTIVES IN SPORTS CONSUMER BEHAVIOUR **9**

Perspectives in sports consumer behaviour: Environmental Factors-Individual Factors-Decision Making for Sports Involvement-Role of Research in Sports Marketing: Types of Primary market research-Common problems in sports marketing research.

UNIT III THE SPORTS PRODUCT **9**

The sports product : Its core and extensions-key issue in sport product strategy –managing sports brands: benefits and development of brand equity-sales:;definition-typical sales approaches used in sport-Selling sports to the community.

UNIT IV PRICING STRATEGIES **9**

Pricing strategies: the basic of pricing-core issues-special pricing factors-advertising media for sport-promotional concepts, practices and components-sponsorship: definition-growth of sponsorship-evaluating and ensuring sponsorship effectiveness-selling the sponsorship-ethical issues.

UNIT V PLACES / PRODUCT DISTRIBUTION **9**

Places/Product distribution: placing core products and their extensions –the facility – marketing channels-the product-place matrix-electronic media landscape-media impact on sport public relations-integrating sales, promotion, sponsorship, media and community relations-cross impacts among the five P's-the legal aspects of sports marketing.

Reference:

Bernard J Mullin, Stephen Hardy, William A Sutton,Sport Marketing, Human Kinetics.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Demonstrate knowledge in: • Concepts in sports Marketing • sports consumer behaviour • Pricing strategies • Places/Product distribution
	CO-2	Apply sports marketing techniques to market various sports goods
	CO-3	Analyse different sports marketing techniques and to implement in the real sports marketing environment
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3					2				
2			3	1						
3		3		1		2	1		1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		2

3		

ST 1520 SOIL AND GROUND IMPROVEMENT TECHNIQUES

Course Objectives:

- To aware of the different sports surface engineering technique for the good performance of the athlete and to avoid the sports injury.

UNIT 1 SOIL PROPERTIES **9**

Soil formation – Geotechnical engineering – Soil formation – Soil profile. Soil Composition –Water content determination – Determination of specific gravity of solids. Index properties of soil – Shape and size of particle –Shrinkage ratio - Volumetric shrinkage – Atterberg indices – Classification of soil.

UNIT II – PROBLEMATIC SOIL AND IMPROVEMENT TECHNIQUES **9**

Role of ground improvement in foundation engineering – methods of ground improvement – Geotechnical problems in alluvial, lateritic and black cotton soils – Selection of suitable ground improvement techniques based on soil conditions.

UNIT III – DEWATERING **9**

Dewatering Techniques - Well points – Vacuum and electroosmotic methods – Seepage analysis for two – dimensional flow for fully and partially penetrated slots in homogeneous deposits (Simple cases only).

UNIT IV – INSITU TREATMENT OF COHESIONLESS AND COHESIVE SOILS **9**

In-situ densification of cohesion-less soils and consolidation of cohesive soils: Dynamic compaction Vibroflotation, Sand compaction piles and deep compaction. Consolidation: Preloading with sand drains, and fabric drains, Stone columns and Lime piles-installation techniques only – relative merits of above methods and their limitations - stabilization of expansive soils.

UNIT V – GROUT TECHNIQUES **9**

Types of grouts – Grouting equipments and machinery – injection methods – Grout monitoring – stabilization with cement, lime and chemicals.

Referance:

1. Purushothama Raj, P.Ground Improvement Techniques, Laxmi Publications (P) Ltd. New Delhi, 1999.
2. Koerner, R.M. Construction and Geotechnical Methods in Foundation Engineering, McGraw Hill, 1994.

3. Moseley, M.P., Ground Improvement Blockie Academic and Professional, Chapman and Hall, Glassgow, 1998.

4. Jones J.E.P. Earth Reinfocement and Soil Structure, Butterworths, London, 1985

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of soils and ground improvement technique and its properties
	CO-2	Aware of the different sports surface engineering technique for the good performance of the athlete and to avoid sports injury.
	CO-3	Apply ground improvement techniques to improve players performance

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2								
2	3	3								
3			3	2		3	1			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	3	
2		
3		2

List of Generic/Open Elective Courses Offered for other Department Students

Course code	Course	Teaching Scheme			Credits	Assessment
		Th	Tuto	Lab		

SET 1501	Fundamentals of Sports Technology	**3**	**0**	**0**	**3**	**25+75**
SET 1502	Intellectual Properties Rights	**3**	**0**	**0**	**3**	**25+75**
SET 1503	Design of Experiments and Research Applications	**3**	**0**	**0**	**3**	**25+75**
SET 1504	Industrial Safety	**3**	**0**	**0**	**3**	**25+75**

(Th-Theory, Tuto- Tutorial, Lab – Laboratory)

SET 1501 - FUNDAMENTALS OF SPORTS TECHNOLOGY

Course Objectives:

At the end of the course, students will be able to:
Appreciate the different technological advances available for application in sports domain.

UNIT I SPORTS TECHNOLOGY BASIC CONCEPTS 9

History of Engineering in Sports, The relationship between sports engineering and sports science, need , scope and objectives , advantages and applications of Sports Technology, Sports Technology terminologies, carrier opportunities.

UNIT II IMPACT OF ENGINEERING IN SPORTS 9

Concepts of human engineering , Impact of various modern technologies in Materials engineering, role of technology in equipments design and development, importance of Ergonomics in sports equipments. Recent technological advancements in various sports goods.

UNIT III COMPUTER AND INSTRUMENTATION IN SPORTS 9

Role and importance of computer and instrumentation technology in various sports, computer simulation for sports, applications and advantages, video technology, hawk-eye technology in sports.

UNIT IV VARIOUS ENGINEERING APPLICATIONS IN SPORTS 9

Aerodynamics and sports applications, Nano technology and its sports applications, sensor technology and its sports applications, software based sports performance analysis, Sport analytics, and Internet of Things.

UNIT V BUSINESS AND RESEARCH APPLICATIONS IN SPORTS ENGINEERING 9

Entrepreneurial skills and business opportunities in sports, Research opportunities in sports technological research, Recent Research trend in various sports equipment design, ball sports, tennis racket technology, and water sports, various Sports Engineering research groups, and journals in sports technology.

Course Outcomes:

Students will be able to appreciate the opportunities available in the domain of sport technology, innovation and entrepreneurship, and be able to act upon it.

Reference.

1. An overview of sports engineering: history, impact and research, Zahari Taha, Mohd Hasnun Arif , Hassan Anwar P.P., Abdul Majeed , Mohd Azri, Aris Nina, Nadia Sahim, Movement, Health & Exercise, 2, 1-14, 2013
2. Ross, S. (2012). Sports technology. Mankato, Minn: Smart Apple Media.
3. Fuss, F. K. (2014). Routledge handbook of sports technology and engineering. New York: Routledge.
4. Ciletti, D., & Chadwick, S. (2012). Sports entrepreneurship: Theory and practice. Morgantown, WV: Fitness Information Technology.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Acquire knowledge on • Sports Science and Sports Engineering • Applications of Engineering in Sports
	CO-2	Understand engineering concepts and techniques used in different sports .
	CO-3	Understand business opportunities in sports engineering.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3									
2	3	2					1		2	
3		3								1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		1
3	3	

SET 1502 INTELLECTUAL PROPERTIES RIGHTS

UNIT 1:

Nature of Intellectual Property: Patents, Designs, Trade and Copyright. Process of Patenting and Development: technological research, innovation, patenting, development.

UNIT 2:

International Scenario: International cooperation on Intellectual Property. Procedure for grants of patents, Patenting under PCT.

UNIT 3:

Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications.

UNIT 4:

New Developments in IPR: Administration of Patent System. New developments in IPR; IPR of Biological Systems, Computer Software etc.

UNIT 5:

Traditional knowledge Case Studies, IPR and IITs.

References:

Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd ,2007.

Mayall , "Industrial Design", McGraw Hill, 1992.

Niebel , "Product Design", McGraw Hill, 1974.

Asimov , "Introduction to Design", Prentice Hall, 1962.

Robert P. Merges, Peter S. Menell, Mark A. Lemley, " Intellectual Property in New Technological Age", 2016.

T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008

2	**COURSE OUTCOMES: Students are able to**	
	CO1	Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.
	CO2	Understanding that when IPR would take such important place in growth of individuals & nation, it is needless to emphasis the need of information about Intellectual Property Right to be promoted among students in general & engineering in particular.
	CO3	Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2								
2	3	3				2				
3				2		3			2	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		2
3	3	1

SET 1503 - DESIGN OF EXPERIMENTS AND RESEARCH APPLICATIONS

Course Objectives:

• To impart knowledge about Design of Experiments, Taguchi's Methods and Robust Design.

UNIT- I: INTRODUCTION 9

Importance of experiments, experimental strategies, Planning of Experiments- Experimental design-basic principles of Experimental design, terminology, steps in experimentation, sample size, normal probability plot, Simple linear regression models, Analysis of variance (ANOVA) – one way and two way.

UNIT- II: SINGLE FACTOR EXPERIMENTS 9

Completely randomized design, Randomized block design, Latin square design, Statistical analysis and estimation of model parameters, model adequacy checking, pair wise comparison tests.

UNIT-III: MULTIFACTOR EXPERIMENTS 9

Two and three factor full factorial experiments, Randomized block factorial design, Experiments with random factors, rules for expected mean squares, approximate F- tests. 2K factorial Experiments.

UNIT- IV: ROBUST DESIGN PROCESS 9

Classical design of Experiments- Taguchi's design of experiments –Comparison of classical and Taguchi' approach- Factor selection-variability due to noise factors- Principle of robustization, classification of quality characteristics and parameters, objective function in robust design, S/N ratios.

UNIT- V: TAGUCHI METHODS AND PRODUCT / PROCESS OPTIMIZATION 9

Orthogonal Arrays, Variable data analysis, Robust design- control and noise factors, S/N ratios, parameter design, Multi-level experiments, Inner and outer OA experiments, Optimization using S/N ratios, attribute date analysis, a critique of robust design.

Course Outcomes:

• At the end of the course students can able to apply Design of Experiments, Taguchi's Methods and Robust Design techniques in research.

Reference

1. Krishnaiah, K. and Shahabudeen, P. Applied Design of Experiments and Taguchi Methods, PHI learning private Ltd., 2012.

2. Montgomery, D.C., Design and Analysis of experiments, John Wiley and Sons, Eighth edition, 2012.

3. Nicolo Belavendram, Quality by Design; Taguchi techniques for industrial experimentation, Prentice Hall, 1995.

4. Phillip J.Rose, Taguchi techniques for quality engineering, McGraw Hill, 1996.

5. Montgomery, D.C., Design and Analysis of Experiments, Minitab Manual, John Wiley and Sons, Seventh edition, 2010

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Acquire knowledge on • Design of Experiments • Taguchi's Methods and • Robust Design techniques.
	CO-2	Understand Design of Experiments, Taguchi's Methods and Robust Design techniques in research
	CO-3	Apply Design of Experiments, Taguchi's Methods and Robust Design techniques in research

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2								
2		2	3	3						
3				3		3			2	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		1
3	1	2

SET 1504 - INDUSTRIAL SAFETY

Lecture: - 3 h/week

Course objectives:

- To aware of the safety procedure during accident and the maintenance of the machinery and the production sit to avoid the accident.

UNIT-I: INDUSTRIAL SAFETY

Accident, causes, types, results and control, mechanical and electrical hazards, types, causes and preventive steps/procedure, describe salient points of factories act 1948 for health and safety, wash rooms, drinking water layouts, light, cleanliness, fire, guarding, pressure vessels, etc, Safety color codes. Fire prevention and firefighting, equipment and methods.

UNIT-II: FUNDAMENTALS OF MAINTENANCE ENGINEERING

Definition and aim of maintenance engineering, Primary and secondary functions and responsibility of maintenance department, Types of maintenance, Types and applications of tools used for maintenance, Maintenance cost & its relation with replacement economy, Service life of equipment.

UNIT-III: WEAR AND CORROSION AND THEIR PREVENTION

Wear- types, causes, effects, wear reduction methods, lubricants-types and applications, Lubrication methods, general sketch, workingand applications, i. Screw down grease cup, ii. Pressure grease gun, iii. Splash lubrication, iv. Gravity lubrication, v. Wick feed lubrication vi. Side feed lubrication, vii. Ring lubrication, Definition, principle and factors affecting the corrosion. Types of corrosion, corrosion prevention methods.

UNIT-IV: FAULT TRACING

Fault tracing-concept and importance, decision tree concept, need and applications, sequence of fault finding activities, show as decision tree, draw decision tree for problems in machine tools, hydraulic, pneumatic, automotive, thermal and electrical equipment's like, I. Any one machine tool, ii. Pump iii. Air compressor, iv. Internal combustion engine, v. Boiler, vi. Electrical motors, Types of faults in machine tools and their general causes.

UNIT-V: PERIODIC AND PREVENTIVE MAINTENANCE

Periodic inspection-concept and need, degreasing, cleaning and repairing schemes, overhauling of mechanical components, overhauling of electrical motor, common troubles and remedies of electric motor, repair complexities and its use, definition, need, steps and advantages of preventive maintenance. Steps/procedure for periodic and preventive maintenance of: I. Machine tools, ii. Pumps, iii. Air compressors, iv. Diesel generating (DG) sets, Program and schedule of preventive maintenance of mechanical and electrical equipment, advantages of preventive maintenance. Repair cycle concept and importance

Reference:

1.Maintenance Engineering Handbook, Higgins & Morrow, Da Information Services.
2.Maintenance Engineering, H. P. Garg, S. Chand and Company.
3.Pump-hydraulic Co mpressors, Audels, Mcgrew Hill Publicat ion.
4.Foundation Engineering Handbook, Winterkorn, Hans, Chapman & Hall London.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Acquire knowledge on • Industrial safety • Maintenance engineering
	CO-2	Apply safety and the maintenance to avoid the accident and injury.
	CO-3	Plant efficiency improved

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3						1			1
2		3						1	3	
3			3			1		1		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		3
2	2	
3	3	2

AUDIT COURSE 1 & 2

Course code	Course	Teaching Scheme			Credits
		Th	Tuto	Lab	
AE01	English for Research Paper Writing	**2**	**0**	**0**	**0**
AE02	Disaster Management	**2**	**0**	**0**	**0**
AE03	Sanskrit for Technical Knowledge	**2**	**0**	**0**	**0**
AE04	Value Education	**2**	**0**	**0**	**0**
AE05	Constitution of India	**2**	**0**	**0**	**0**
AE06	Pedagogy Studies	**2**	**0**	**0**	**0**
AE07	Stress Management by Yoga	**2**	**0**	**0**	**0**
AE08	Personality Development through Life Enlightenment Skills.	**2**	**0**	**0**	**0**
AE09	Professional Ethics in Engineering	**2**	**0**	**0**	**0**

AE01: ENGLISH FOR RESEARCH PAPER WRITING

Course objectives:

Students will be able to:

1.Understand that how to improve your writing skills and level of readability
2.Learn about what to write in each section
3.Understand the skills needed when writing a Title
4.Ensure the good quality of paper at very first-time submission

Syllabus

Units	Content	Hrs
1	Planning and Preparation, Word Order, Breaking up long sentences, Structuring Paragraphs and Sentences, Being Concise and Removing Redundancy, Avoiding Ambiguity and Vagueness	4
2	Clarifying Who Did What, Highlighting Your Findings, Hedging and Criticising, Paraphrasing and Plagiarism, Sections of a Paper, Abstracts. Introduction	4
3	Review of the Literature, Methods, Results, Discussion, Conclusions, The Final Check.	4
4	key skills are needed when writing a Title, key skills are needed when writing an Abstract, key skills are needed when writing an Introduction, skills needed when writing a Review of the Literature.	4
5	skills are needed when writing the Methods, skills needed when writing the Results, skills are needed when writing the Discussion, skills are needed when writing the Conclusions	4
6	useful phrases, how to ensure paper is as good as it could possibly be the first- time submission	4

Suggested Studies:

1.Goldbort R (2006) Writing for Science, Yale University Press (available on Google Books)

2.Day R (2006) How to Write and Publish a Scientific Paper, Cambridge University Press

3.Highman N (1998), Handbook of Writing for the Mathematical Sciences, SIAM. Highman's book .

4.Adrian Wallwork , English for Writing Research Papers, Springer New York Dordrecht Heidelberg London, 2011

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Improve your writing skills and level of readability
	CO-2	Understand what to write in each section
	CO-3	Submit good quality of paper at very first-time

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1						3			2
2		2		3					2	
3				3		3				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		2

3		

AE02: DISASTER MANAGEMENT

Course Objectives:

Students will be able to:

1. learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
2. critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
3. develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.
4. critically understand the strengths and weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country or the countries they work in.

Syllabus

Units	Content	Hrs
1	Introduction Disaster: Definition, Factors And Significance; Difference Between Hazard And Disaster; Natural And Manmade Disasters: Difference, Nature, Types And Magnitude.	4
2	**Repercussions Of Disasters And Hazards:** Economic Damage, Loss Of Human And Animal Life, Destruction Of Ecosystem. Natural Disasters: Earthquakes, Volcanisms, Cyclones, Tsunamis, Floods, Droughts And Famines, Landslides And Avalanches, Man-made disaster: Nuclear Reactor Meltdown, Industrial Accidents, Oil Slicks And Spills, Outbreaks Of Disease And Epidemics, War And Conflicts.	4
3	**Disaster Prone Areas In India** Study Of Seismic Zones; Areas Prone To Floods And Droughts, Landslides And Avalanches; Areas Prone To Cyclonic And Coastal Hazards With Special Reference To Tsunami; Post-Disaster Diseases And Epidemics	4
4	**Disaster Preparedness And Management** Preparedness: Monitoring Of Phenomena Triggering A Disaster Or Hazard; Evaluation Of Risk: Application Of Remote Sensing, Data From Meteorological And Other Agencies, Media Reports: Governmental And Community Preparedness.	4
5	**Risk Assessment** Disaster Risk: Concept And Elements, Disaster Risk Reduction, Global	4

	And National Disaster Risk Situation. Techniques Of Risk Assessment,Global Co-Operation In Risk Assessment And Warning, People's Participation In Risk Assessment. Strategies for Survival.	
6	**Disaster Mitigation** Meaning, Concept And Strategies Of Disaster Mitigation, Emerging Trends In Mitigation. Structural Mitigation And Non-Structural Mitigation, Programs Of Disaster Mitigation In India.	4

SUGGESTED READINGS:

1. R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies "'New Royal book Company.
2. Sahni, Pardeep Et.Al. (Eds.)," Disaster Mitigation Experiences And Reflections", Prentice Hall Of India, New Delhi.
3. Goel S. L. , Disaster Administration And Management Text And Case Studies" ,Deep &Deep Publication Pvt. Ltd., New Delhi.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand key concepts in disaster risk reduction and humanitarian response.
	CO-2	Evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
	CO-3	Understand the strengths and weaknesses of disaster management approaches.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2								2	1
2		2							3	2
3		3						2		1

MAPPING (CO's and PSO's)

Course	Program Specific

Outcomes (CO)	Outcomes (PSO)	
	1	2
1		3
2	2	
3		2

AE03 SANSKRIT FOR TECHNICAL KNOWLEDGE

Course Objectives :

1.To get a working knowledge in illustrious Sanskrit, the scientific language in the world
2.Learning of Sanskrit to improve brain functioning
3.Learning of Sanskrit to develop the logic in mathematics, science & other subjects enhancing the memory power
4.The engineering scholars equipped with Sanskrit will be able to explore the huge knowledge from ancient literature

Syllabus

Units	Content	Hrs
1	• Alphabets in Sanskrit, • Past/Present/Future Tense, • Simple Sentences	8
2	• Order • Introduction of roots • Technical information about Sanskrit Literature	8
3	• Technical concepts of Engineering-Electrical, Mechanical, Architecture, Mathematics	8

Suggested reading

1. “Abhyaspustakam” – Dr.Vishwas, Samskrita-Bharti Publication, New Delhi
2. “Teach Yourself Sanskrit” Prathama Deeksha-Vempati Kutumbshastri, Rashtriya Sanskrit Sansthanam, New Delhi Publication
3. “India’s Glorious Scientific Tradition” Suresh Soni, Ocean books (P) Ltd., New Delhi.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding basic Sanskrit language
	CO-2	Ancient Sanskrit literature about science & technology can be understood
	CO-3	Being a logical language will help to develop logic in students

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1								2		2
2								2	2	
3						2				1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		3
3		

AE04: VALUE EDUCATION

Course Objectives

Students will be able to

1.Understand value of education and self- development
2. Imbibe good values in students

3. Let the should know about the importance of character

Syllabus

Units	Content	Hrs
1	• Values and self-development –Social values and individual attitudes. Work ethics, Indian vision of humanism. • Moral and non- moral valuat ion. Standards and principles. • Value judgements	4
2	• Importance of cultivation of values. • Sense of duty. Devotion, Self-reliance. Confidence, Concentration. Truthfulness, Cleanliness. • Honesty, Humanity. Power of faith, National Unity. • Patriotism. Love for nature ,Discipline	6
3	• Personality and Behavior Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline. • Punctuality, Love and Kindness. • Avoid fault Thinking. • Free from anger, Dignity of labour. • Universal brotherhood and religious tolerance. • True friendship. • Happiness Vs suffering, love for truth. • Aware of self-destructive habits. • Association and Cooperation. • Doing best for saving nature	6
4	• Character and Competence –Holy books vs Blind faith. • Self-management and Good health. • Science of reincarnation. • Equality, Nonvio lence , Humilit y, Role of Women.	6

	• All religions and same message. • Mind your Mind, Self-control. • Honesty, Studying effectively	

Suggested reading

1 Chakroborty, S.K. "Values and Ethics for organizations Theory and practice", Oxford University Press, New Delhi

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Knowledge of self-development
	CO-2	Learn the importance of Human values
	CO-3	Developing the overall personality

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1								3	1	1
2						1			2	2
3								2		3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		2
3		2

AE05: CONSTITUTION OF INDIA

Course Objectives:

Students will be able to:

1.Understand the premises informing the twin themes of liberty and freedom from a civil rights perspective.
2.To address the growth of Indian opinion regarding modern Indian intellectuals' constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism.
3.To address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution.

Syllabus

Units	Content	Hrs
1	**History of Making of the Indian Constitution:** • History • Drafting Committee, (Composition & Working)	4
2	**Philosophy of the Indian Constitution:** • Preamble • Salient Features	4
3	**Contours of Constitutional Rights & Duties:** • Fundamental Rights • Right to Equality • Right to Freedom • Right against Exploitation • Right to Freedom of Religion • Cultural and Educational Rights • Right to Constitutional Remedies • Directive Principles of State Policy • Fundamental Duties.	4
4	**Organs of Governance:** • Parliament • Composition • Qualifications and Disqualifications • Powers and Functions • Executive • President • Governor • Council of Ministers • Judiciary, Appointment and Transfer of Judges, Qualifications • Powers and Functions	4

5	**Local Administration:** • District's Administration head: Role and Importance, • Municipalities: Introduction, Mayor and role of Elected • Representative, CEO of Municipal Corporation. • Pachayati raj: Introduction, PRI: Zila Pachayat. • Elected officials and their roles, CEO Zila Pachayat: Position and role. • Block level: Organizational Hierarchy (Different departments), • Village level: Role of Elected and Appointed officials, • Importance of grass root democracy	4
6	**Election Commission:** • Election Commission: Role and Functioning. • Chief Election Commissioner and Election Commissioners. • State Election Commission: Role and Functioning. • Institute and Bodies for the welfare of SC/ST/OBC and women.	4

Suggested reading

1.The Constitution of India, 1950 (Bare Act), Government Publication.
2. Dr. S. N. Busi, Dr. B. R. Ambedkar framing of Indian Constitution, 1st Edition, 2015.
3. M. P. Jain, Indian Constitution Law, 7th Edn., Lexis Nexis, 2014.
4. D.D. Basu, Introduction to the Constitution of India, Lexis Nexis, 2015.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Acquire knowledge about • fundamental of Indian constitution • Constitutional Rights & Duties:
	CO-2	Understand civil and economic rights and social justice in India
	CO-3	Acquire knowledge about • Local Administration • Election commission
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1							2	3		
2									3	2
3									3	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		2
3	2	

AE06: PEDAGOGY STUDIES

Course Objectives:

Students will be able to:

1.Review existing evidence on the review topic to inform programme design and policy making undertaken by the DfID, other agencies and researchers.
2.Identify critical evidence gaps to guide the development.
Syllabus

Syllabus

Units	Content	Hrs
1	**Introduction and Methodology:** • Aims and rationale, Policy background, Conceptual framework and terminology • Theories of learning, Curriculum, Teacher education. • Conceptual framework, Research questions • Overview of methodology and Searching.	4
2	**Thematic overview:** Pedagogical practices are being used by teachers in formal and informal classrooms in developing countries. • Curriculum, Teacher education.	2
3	• Evidence on the effectiveness of pedagogical practices • Methodology for the in depth stage: quality assessment of included studies. • How can teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy? • Theory of change. • Strength and nature of the body of evidence for effective pedagogical practices. • Pedagogic theory and pedagogical approaches. • Teachers' attitudes and beliefs and Pedagogic strategies.	4
4	• Professional development: alignment with classroom practices and follow-up support • Peer support • Support from the head teacher and the community. • Curriculum and assessment • Barriers to learning: limited resources and large class sizes	4
5	**Research gaps and future directions** • Research design • Contexts • Pedagogy • Teacher education • Curriculum and assessment • Dissemination and research impact.	2

Suggested reading

1.Ackers J, Hardman F (2001) Classroom interaction in Kenyan primary schools, Compare, 31 (2): 245-261.
2. Agrawal M (2004) Curricular reform in schools: The importance of evaluation, Journal of Curriculum Studies, 36 (3): 361-379.
3. Akyeampong K (2003) Teacher training in Ghana - does it count? Multi-site teacher education research project (MUSTER) country report 1. London: DFID.

4. Akyeampong K, Lussier K, PryorJ, Westbrook J (2013) Improving teaching and learning of basic maths and reading in Africa: Does teacher preparation count? International Journal Educational Development, 33 (3): 272–282.
5. Alexander RJ (2001) Culture and pedagogy: International comparisons in primary education. Oxford and Boston: Blackwell.
6. Chavan M (2003) Read India: A mass scale, rapid, 'learning to read' campaign.
7. www.pratham.org/images/resource%20working%20paper%202.pdf
.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	What pedagogical practices are being used by teachers in formal and informal classrooms in developing countries?
	CO-2	What is the evidence on the effectiveness of these pedagogical practices, in what conditions, and with what population of learners?
	CO-3	How can teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy?

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1									2
2		2					1			
3								2	2	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		2
3	2	3

AE07: STRESS MANAGEMENT BY YOGA

Course Objectives:

1. To achieve overall health of body and mind

2. To overcome stress

Syllabus

Units	Content	Hrs
1	• Definitions of Eight parts of yog. (Ashtanga)	8
2	• Yam and Niyam. Do`s and Don't's in life. i) Ahinsa, satya, astheya, bramhacharya and aparigraha ii) Shaucha, santosh, tapa, swadhyay, ishwarpranidhan	8
3	• Asan and Pranayam i) Various yog poses and their benefits for mind & body ii)Regularization of breathing techniques and its effects- Types of pranayam	8

Suggested reading

1. 'Yogic Asanas for Group Tarining-Part-I" : Janardan Swami Yogabhyasi Mandal, Nagpur
2. "Rajayoga or conquering the Internal Nature" by Swami Vivekananda, Advaita Ashrama (Publication Department), Kolkata

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Develop healthy mind in a healthy body thus improving social health also.
	CO-2	Improve efficiency.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1				2				2	3	1
2				2		2				

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

(CO)	1	2
1		3
2	3	

AE08 PERSONALITY DEVELOPMENT THROUGH LIFE ENLIGHTENMENT SKILLS

Course Objectives:

1. To learn to achieve the highest goal happily
2. To become a person with stable mind, pleasing personality and determination
3. To awaken wisdom in students

Syllabus

Units	Content	Hrs
1	• Neetisatakam-Holistic development of personality • Verses- 19,20,21,22 (wisdom) • Verses- 29,31,32 (pride & heroism) • Verses- 26,28,63,65 (virtue) • Verses- 52,53,59 (dont's) • Verses- 71,73,75,78 (do's)	8
2	• Approach to day to day work and duties. • Shrimad Bhagwad Geeta : Chapter 2-Verses 41, 47,48, • Chapter 3-Verses 13, 21, 27, 35, Chapter 6-Verses 5,13,17, • 23, 35, • Chapter 18-Verses 45, 46, 48.	8
3	• Statements of basic knowledge. • Shrimad Bhagwad Geeta: Chapter2-Verses 56, 62, 68 • Chapter 12 -Verses 13, 14, 15, 16,17, 18 • Personalit y o f Ro le model. Shrimad Bhagwad Geeta: • Chapter2-Verses 17, Chapter 3-Verses 36,37,42, • Chapter 4-Verses 18, 38,39 • Chapter18 – Verses 37,38,63	8

Suggested reading

1. "Srimad Bhagavad Gita" by Swami Swarupananda Advaita Ashram (Publication Department), Kolkata
2. Bhartrihari's Three Satakam (Niti-sringar-vairagya) by P.Gopinath,Rashtriya Sanskrit Sansthanam, New Delhi.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Study of Shrimad-Bhagwad-Geeta will help the student in developing his personality and achieve the highest goal in life .
	CO-2	The person who has studied Geeta will lead the nation and mankind to peace and prosperity .
	CO-3	Study of Neetishatakam will help in developing versatile personality of students.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1								2	2	2
2								1	2	3
3								2	2	3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	3	
3		3

AE09: PROFESSIONAL ETHICS IN ENGINEERING

COURSE OBJECTIVES

- Provide basic knowledge about engineering Ethics, Variety of moral issues and Moral dilemmas, Professional Ideals and Virtues
- To provide knowledge about Engineers as responsible Experimenters, Research Ethics, Codes of Ethics, Industrial Standards, Exposure to Safety and Risk, Risk Benefit Analysis
- To Have an idea about the Collegiality and Loyalty, Collective Bargaining, Confidentiality, Occupational Crime, Professional, Employee
- To Have an adequate knowledge about MNC's, Business, Environmental, Computer Ethics, Honesty, Moral Leadership, sample Code of Conduct.

UNIT I HUMAN VALUES

Concepts on morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self confidence – Character – Spirituality – Introduction to Yoga and meditation for professional excellence and stress management.

UNIT II ENGINEERING ETHICS

Senses of 'Engineering Ethics' – Variety of moral issues – Types of inquiry – Moral dilemmas – Moral Autonomy – Kohlberg's theory – Gilligan's theory – Consensus and Controversy – Models of professional roles - Theories about right action – Self-interest – Customs and Religion – Uses of Ethical Theories.

UNIT III ENGINEERING AS SOCIAL EXPERIMENTATION

Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics – A Balanced Outlook on Law.

UNIT IV COMMERCIAL AWARENES

Commercial awareness and business acumen, Planning ahead and future proofing, Professional self-awareness, Data analysis and manipulation

UNIT V GLOBAL ISSUES

Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership –Code of Conduct – Corporate Social Responsibility.

REFERENCES :

1. Mike Martin and Roland Schinzinger, "Ethics in Engineering", McGraw Hill, New York (2005).

2. Charles E Harris, Michael S Pritchard and Michael J Rabins, "Engineering Ethics – Concepts and Cases", Thompson Learning, (2000).

3. Charles D Fleddermann, "Engineering Ethics", Prentice Hall, New Mexico, (1999).

4. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, (2003)

5. Edmund G Seebauer and Robert L Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, (2001)

6. Prof. (Col) P S Bajaj and Dr. Raj Agrawal, "Business Ethics – An Indian Perspective", Biztantra, New Delhi, (2004)

7. David Ermann and Michele S Shauf, "Computers, Ethics and Society", Oxford University *Press, (2003)*

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The students will understand the basic perception of profession, professional ethics, various moral & social issues, industrial standards, code of ethics and role of professional ethics in engineering field.
	CO-2	The students will aware of professional rights and responsibilities of an engineer, responsibilities of an engineer for safety and risk benefit analysis.
	CO-3	The students will acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1							1	2	3	
2									3	2
3									3	2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	3	2
3	1	3

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
CHENNAI-600 127

APPROVED SYLLABUS

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Choice Based Credit System

BSC SPORTS COACHING

DEGREE PROGRAMME OFFERED IN THE

DEPARTMENT OF ADVANCED SPORTS TRAINING

AND SPORTS TECHNOLOGY

TAMILNADU PHYSICAL EDUCATION AND

SPORTS UNIVERSITY

BSC SPORTS COACHING

Programme Educational Objectives (PEO)

- PEO-1 The students will learn the fundamental skills of specified sports for future career in Sports.
- PEO-2 The students will be exposed to train the children in Sports.

Educational Program Outcomes (POs):

After completion of the program graduates will be able to

PROGRAMME OUTCOMES (PO'S)

The under graduates are able to

PO-1) Attain the knowledge to train the sports person.

PO-2) Analyse the students Psychology in terms of improving the Games.

PO-3) Guide to treat and rehab the sports injuries.

PO-4) Understand the Sports movements.

PO-5) Identify the talent in basic level children to promote the welfare of Sports.

PO-6) The designed internship program will help the student to get exposure in teaching and training the fundamental skills.

PO-7) Teach and train the fundamental skill effectively.

PO-8) Motivate the students for updating the sports related knowledge

PO-9) Responsible for the healthy Society

PO-10) Imparting the knowledge for effective judgement in Sports

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X			X		X	X			X
PEO-2	X		X	X	X				X	X

PROGRAM SPECIFIC OUTCOMES (PSO)

The under graduates are able to

PSO 1 Understanding the different components of sports training skills and its developments.

PSO-2 Intend to work with the young children for sports excellence.

SEMESTER – I (FIRST YEAR)					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
17101	Tamil – I	3	0	0	3
17012	English – I	3	0	0	3
17103	Anatomy and Physiology	3	0	0	3
17014	History and administration of Specified Sports	3	0	0	3
17105	Allied theories sports and Games Part – I	3	0	0	3
17106	Teaching practice- conditioning	0	0	3	3
	Total	15	0	3	18
SEMESTER – II					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
17201	Tamil – II	3	0	0	3
17202	English – II	3	0	0	3
17203	Science of Sports Training– I	3	0	0	3
17204	Rules Regulation and Techniques of Specified Sports	3	0	0	3
17205	Allied theories sports and Games Part – II	3	0	0	3
17206	Teaching practice – fundamental skills	0	0	3	3
	Total	15	0	6	21

L – Lecture Hour T – Tutorial Hour P - Practical Hour C - Credits

First year students would give coaching in a primary school for 15 days

SEMESTER – III (SECOND YEAR)					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
17301	Tamil – III	3	0	0	3
17302	English – III	3	0	0	3
17303	Science of sports training - 11	3	0	0	3
17304	Technique and tactics of Specified Sports/ Games	3	0	0	3
17305	Allied theories sports and Games Part – III	3	0	0	3
17306	Teaching practice - individual training	0	0	3	3
	Total	15	0	3	18
SEMESTER – 1V					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
17401	Tamil – IV	3	0	0	3
17402	English – IV	3	0	0	3
17403	Sports Psychology and Sociology of Sport	3	0	0	3
17404	Sports Medicine and Nutrition	3	0	0	3
17405	Allied theories sports and Games Part – IV	3	0	0	3
17406	Practical – II Specified Sports / Games	0	0	3	3
17407	Teaching practice team training	0	0	3	3
	Total	15	0	6	21

L – Lecture Hour T – Tutorial Hour P - Practical Hour C - Credits

In the Second year students are expected to coach an under -15 years team in a sports of their choice.

SEMESTER – V (THIRD YEAR)					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
17501	Kinesiology and Bio Mechanics	3	0	0	3
17502	Anthropometry Sports Pedagogy and Talent Identification	3	0	0	3
17503	Personality Development and Communication Skills	3	0	0	3
17504	Specific Motor qualities, System of play and functional training	3	0	0	3
17505	Pedagogic competition	3	0	0	3
	Total	15	0	0	15
SEMESTER – VI					
Subject Code	**Title of the Paper**	**L**	**T**	**P**	**C**
17601	Fundamentals of Sports Management and methods	3	0	0	3
17602	Computer Application, Test and Measurement	3	0	0	3
17603	Team preparation Coaching , Match Analysis of and philosophy of coaching	3	0	0	3
17604	Disaster management	3	0	0	3
17605	Practical – III Specified Sports / Games	0	0	3	3
17606	Practical – IV Specified Sports/ Games	0	0	3	3
17607	Internship	0	5	0	5
	Total	15	5	6	26
	Grand Total (I +II+III+IV+V+VI)				119

L – Lecture Hour T – Tutorial Hour P - Practical Hour C- Credits

SEMESTER I

17102	**ENGLISH – I BASIC LANGUAGE SKILL** ***Instruction : 4 hr / week*** ***Credits : 4*** ***Assessment : 25 + 75***
1	**SYLLABUS** **ENGLISH – I BASIC LANGUAGE SKILL** **SUBJECT CODE – 17102** **LISTENING & SPEAKING** **UNIT – I** a) Greeting people & responding to greetings b) Introducing oneself & Other People c) Asking for & giving personal details (Name, Occupation, etc.,) **UNIT – II** a) Using the Telephone – exchanging information & taking messages b) Describing a visual clipping **UNIT - III** a) Completing forms with personal details bio-data & curriculum vitae b) Paragraph writing – converting note making to paragraph c) Interpreting advertisements **UNIT – IV** a) Grammar in usage b) Descriptive writing – describing a scene / a person / a situation c) Translation – 50 words **UNIT – V** a) Cabuliwallah – Rabindranath Tagore

b) The Last Leaf – O. Henry

c) Upper Division Love – Manohar Malgnkar

REFERENCE:

1. The Last Leaf & other stories by Anand Kumar Raju (Blackie Books)

Reference

1. Aerodynamics for Engineering students , E.L. Houghton, P.W.Carpenter, BH, 2003
2. Sports Aerodynamics, Noerstrud, Helge (Ed.), Springer, 2008
3. Projectile Dynamics in Sport: Principles and Applications, By Colin White, Routledge, 2010
4. Aerodynamic Measurements , G P Russo, Woodhead Publishing, 2011.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand and attain knowledge on Novel.
	CO-2	Able to introduce themselves in a better way
	CO-3	Able to communicate in English with proper grammar

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3			3						2
2		3		2						3
3			3		3	3				2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2
3	1	1

ANATOMY AND PHYSIOLOGY – 17103

UNIT – I

Anatomy – Definition - need - importance - Cell tissues - types - structure - function

UNIT – II

Muscular system – structure - types - functions - mechanism of muscular system- Adaptation of Muscular system to training

UNIT – III

Cardio vascular system- Heart - Structure- functions - Cardiac cycle - exchange - adaptation of cardio vascular system to training

UNIT – IV

Respiratory system - Mechanism of respiratory system - principles of gas exchange - adaptation - of Respiratory system to training

UNIT - V

High Altitude training - Hot and Cold Climate - Acclimatization -

Physiological adaptation at high altitude

REFERENCES:

1. Surrender H Singh, Krishna Garg, (2008), : Anatomy and Physiology for Nurses & Allied Health Sciences" CBS
2. Clerk.D.H.(1995) : Exercise Physiology Prentice-Hall,Inc., Englewood Clif, New jersy
3. Frank W Dick, Sports training principles, London, Lepus Book Co., 1980

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the structure and functions of human organs
	CO-2	Proper exercise may be prescribed for the development of the muscles and training

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3			2	1					1
2	1		2						3	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	
3	1	3

HISTORY ADMINISTRATION OF SPORTS/GAME-17104

UNIT – I

World - History - Origin - Development - Structure - Regulations - Organization set up - Recent Trends

UNIT – II

Indian - History - Origin - Development - Structure - Regulations - Organization set up - Recent Trends

UNIT - III

SAI- Aim- motto- vision- schemes- organizational set up- schemes- facilities – selection of teams – recent trends

UNIT - IV

SDAT- introduction- motto- vision- schemes- facilities- organizational set up – recent trends

UNIT - V

District clubs- functions- schemes- recent trends - State level & National Tournaments - formation of committees -

REFERENCES :

1. FIVB/FIFA/IHF/IAAF coaches manual
2. FIVB/FIFA/IHF/IAAF Rules book
3. FIFA COACCOLA International Academy Part – I & Part – II

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the past events of the game and its development
	CO-2	To understand the facts performing growth and development

3	**MAPPING (CO's and PO's)**										
	Course Outcomes	Program Outcomes									
		1	2	3	4	5	6	7	8	9	10
	1	2		1			1				
	2								2		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2	2	

ALLIED THEORIES OF SPORTS AND GAMES – 17105

UNIT – I

History : Origin - development - Structure - Organizational set up - Recent Trends World - Asia - India

UNIT - II

Rules of the Game - interpretation

UNIT - III

Pre requisites of an officials - qualification and qualities of officials - duties - powers - mechanism of officiating

UNIT- IV

Techniques - Technical training - Tactics

UNIT- V

Layout of play field - constriction - leveling - marking - maintenance

REFERENCES :

1. FIVB / FIFA / IHF / FIE / IAAF Coaches manual
2. FIVB / FIFA / IHF / FIE / IAAF Rules book.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To understand the rules of the specific game to play better
	CO-2	Plan for a State level match

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		2					3			
2			2				1			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2

SEMESTER II

ENGLISH - II DEVELOPING THE LANGUAGE SKILLS - 17202

LISTENING & SPEAKING

UNIT - I

a) Asking for & giving permission

b) Inviting a person – accepting / declining

WRITIN

G UNIT

– II

a) Grammar in usage

b) Translation - idioms & phrases

c) Filling up forms – Bank Chalans / Pay in Slips / Demand Draft, Railway Reservation/Cancellation

UNIT - III

a) Welcoming a foreign visitor & describing region & country

b) Letter writing

c) Descriptive writing – describing on event

UNIT - IV

a) Ode to the best wind – P.B. Shelley

b) The Gift of India - Sarojini Naidu

UNIT - V

a) The Man Who Could Work Miracles - H.G. Wells

b) The Verger - Somer Set Maugham

REFERENCE:

1) The Last Leaf & Other Stories by Anand Kumar Faju (Blackie Books)
2) The Silent Song - K.M. Tharankan (Macmillan)

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Communication is important for teaching and training.
	CO-2	It helps for greeting the people

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		2				1				
2	1		2						1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

SCIENCE OF SPORTS TRAINING -I - 17203

UNIT - I

Sports training - meaning - definition - aim - objective - characteristic

UNIT - II

General principles - over load - specificity- reversibility over load - symptoms - recovery

UNIT - III

Physical fitness- meaning definition- health related – skill related speed- meaning importance – types- flexibility – importance - types

UNIT – 1V

Motor qualities - meaning definition - Strength: Definition - types - importance

UNIT - V

Endurance: definition - types - importance – coordinative abilities

REFERENCE

1. Frank W. Dick, Sports training principles, London, Lepus Book Co., 1980
2. Hardyal Singh Science of Sports training, DVS publication, New Delhi, 1995

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The knowledge of sports training principles will help to understand different qualities.
	CO-2	Developing the motor qualities and skills

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		2		3					1	
2	1						2			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1

2	2	

RULES REGULATION AND TECHNIQUES OF SPECIFIED SPORT/GAME – 17204

UNIT - I

Dimensions of play fields - measurements - layout – markings. Equipments- specifications – importance

UNIT - II

Rules and regulation and their interpretation

UNIT - III

Officiating - duties - powers of the referee / umpires - mechanism of officiating -

UNIT - IV

Organizational set up - drawing fixtures - knock out - league - seeding -

UNIT - V

Competitions : state level – National level -

REFERENCES:

1. Law of the game /FB/ VB/ HB/ ATHLETICS
2. Rules and regulations of /FB/ VB/ HB/ ATHLETICS
3. International Academy Part I & Part II

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To understand the rules of the specific game to play better
	CO-2	To prevent from injuries

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1					3	
2			1					2		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2

ALLIED THEORIES OF SPORTS AND GAMES – 17205

UNIT – I

History : Origin - development - Structure - Organizational set up - Recent Trends World - Asia - India

UNIT - II

Rules of the Game - interpretation

UNIT - III

Pre requisites of an officials - qualification and qualities of officials - duties - powers - mechanism of officiating

UNIT - IV

Layout of play field - constriction - leveling - marking - maintenance

UNIT - V

Competitions –state level – national level- international level

REFERENCES :

1. FIVB / FIFA / IHF / FIE / IAAF Coaches manual
2. FIVB / FIFA / IHF / FIE / IAAF Rules book.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To understand the rules of the specific game to play better
	CO-2	Plan for a State level match

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		2				2			3	
2						2			2	1

SEMESTER III

ENGLISH - III PROGRESSIVE LANGUAGE SKILLS – 17302

LISTENING & SPEAKING

UNIT - I

a) Discussion interests & leisure activities

b) Checking in & out of a hotel

c) Complaint & apology

WRITIN

G UNIT

- II

a) Comprehension

b) Developing hints

UNIT - III

a) Descriptive Writing - Comparing & Contrasting

b) Translation - Sentences - English to Tamil

UNIT - IV

a) Where The Cross Is Made – A.P.J. Abdul Kalam

b) Pip & The Convict - Guy R. Williams

UNIT - V

a) The Dream Of The Message - A.P.J. Abdul Kalam

b) Women of the Public Sphere - Dona. S. Sanzone

REFERENCES :

1. A.K. Rama Bushanam "Human values through English Prose" (Blackie)
2. Short Plays of Yesterday & Today – V. Sachindanadam

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Acquire knowledge on writing the letter
	CO-2	Communicate better

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1				3					
2	2				3		2			1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	1

SCIENCE OF SPORTS TRAINING -II - 17303

UNIT - I

Sports training - types - weight training- resistance training- sample exercises – development of strength – maximum strength- explosive strength- strength endurance.

UNIT - II

Development of speed- reaction speed- speed in movement- single response – collective response- sample exercises- factors determining speed

UNIT - III

Circuit training – importance- benefits- development of strength endurance – skill development general circuit- special circuit

UNIT – IV

Interval training – meaning – importance – benefits – types- short term= middle term- long term- development of endurance

UNIT - V

Development of Coordinative abilities- shuttle run- ladder exercises- fart lek training

REFERENCES:

1. Frank W. Dick, Sports training principles, London, Lepus Book Co., 1980
2. Hardyal Singh Science of Sports training, DVS publication, New Delhi, 1995

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Plan the training for best performance
	CO-2	Apply for the development of strength, speed, reaction, endurance and flexibility.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1							2		
2		2						3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

SPORTS MEDICINE AND NUTRITION – 17304

UNIT – I

Sports medicine – meaning - aim - objective - need - importance - preventive - measures - First Aid - Safety – hygiene

UNIT - II

Injuries - types - sports specific injuries - fracture - laceration - abrasion - dislocation - CPR

UNIT - III

Women in sports - anatomical - biological - physiological - psychological - factors affecting sports performance

UNIT - IV

Massage - types - importance - need - principles - doping

UNIT - V

Nutrition - classification - sources - balance diet - Carbohydrate - fat - protein - vitamins - supplements - pre game meal - post game meal

REFERENCES:

1. Lars Peterson and Per Restorn (2001) Sport Injuries – Their Prevention and treatment, United States, Human Kinetics
2. Richard B.Birrer (2004), Sports Medicine for the Primary care physician, Florida, United Stetes, Human Kinetics
3. Bruckner and Karim Khan (2006) Clinical Sports medicine, Australia Megraw Hill
4. Sports medicine by Richer H. strauss

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Help the sportsmen to prevent from sports injuries
	CO-2	Develop the knowledge of side effects of doping

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		1			1				3

	2						2				2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

TECHNIQUE AND TACTICS OF SPECIFIED SPORTS/ GAMES

UNIT – I

Technique - Definition - Technique without equipment / ball – positioning – movements - Principles of learning

UNIT – II

Technique with equipment/ball – simple to complex exercises - positioning - movements - technical training- Technical training - simple - complex - pressure - training under physical aspects

UNIT - III

Tactics – meaning- definition- types – offensive- defensive

UNIT - IV

Tactical training - Mental training to improve technique & tactics - Combining different technique

UNIT - V

Individual tactics- team tactics – group tactics - Development of technically superior player - reaction time – movement time - response time - reflex time

REFERENCES :

1. Coaching manual by S. Subramanian & Richerd Bate Malayasia
2. FIVB/FIFA/IHF/IAAF coaches manual
3. FIVB/FIFA/IHF/IAAF Rules book.
4. International sports Academy – Part I & Part II

2

COURSE OUTCOMES: Students are able to

CO-1	Help to learn skills in proper form and execute
CO-2	By learning this technique the performance could be enhanced to play competitive sport, this learning is important and it serves as basic.

3

MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2					1			3	1
2	2				1	3		2		3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

ALLIED THEORIES OF SPORTS AND GAMES – 17306

UNIT – I

History : Origin - development - Structure - Organizational set up - Recent Trends World - Asia - India

UNIT - II

Rules of the Game - interpretation

UNIT - III

Pre requisites of an officials - qualification and qualities of officials - duties - powers - mechanism of officiating

UNIT - IV

Techniques - Technical training - Tactics

UNIT - V

Layout of play field - construction - leveling - marking - maintenance

REFERENCES:

1. FIVB / FIFA / IHF / FIE / IAAF Coaches manual

2. FIVB / FIFA / IHF / FIE / IAAF Rules book.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To learn the other sports with support along main sport
	CO-2	It help us to learn the new skill by transfer of learning method
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1		2					1		
2		2					1			2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

1	1	
2		

SEMESTER IV

ENGLISH – IV

CAREER LISTENING AND SPEAKING – 17402

UNIT – I

a) Group discussion – predicting and describing future possibilities

1. Globalization
2. Consumerism
3. Current event

b) Interview – focus on personality development and body language

WRITIN

G UNIT

- II

a) Report writing

b) Note Making

UNIT - III

a) How to write an e-mail

b) Descriptive writing – writing with a purpose

UNIT – IV

a) How soon hath time - John Milton

b) Leave this chanting - Robindranath Tagore

UNIT – V

a) Dharma in Tirukural - C. Subramanian

b) Love all serve all - Derek Williams

REFERENCE

1. A.K.Raman Bhushanam "Human values through English prose" (Blackie)
2. Shankuntala Bharvani "The best words" Nissin Ezekial

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Attain knowledge in attending the interview
	CO-2	Ability to improve the personality

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			3						1
2			2			1				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

SPORTS PSYCHOLOGY AND SOCIOLOGY OF SPORT - 17403

UNIT - I

Psychology - Definition – importance – branches - sports psychology - Definition – importance – development

UNIT - II

Personality – definition – traits theories – inter personal relation – cognation – memory

UNIT – III

Motivation - definition – types - anxiety – stress - aggression - arousal

UNIT - IV

Sports sociology : meaning – definition - need - importance - scope - social control – social group - social stratification

UNIT – V

Socialization – meaning - definition - community - culture - group dynamic – group cohesion - sociogram – audience effect

REFERENCES :

1. John.D,Lauther, (2001) Psychology of coaching, New jersy; Enginewood Cliffs, Prenticce Hall Inc.
2. Thelma Horn (2002) Advances in Sports Psychology, Human Kinetics.
3. Jay Coakley(2001), Sports in society – issues and conterouersies in International education, Mc-Craw Seventh.Ed.
4. Yobu A Sports sociology, Jehova Nissin Publication 2003

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the character and behaviour of a sport person
	CO-2	The sportsmen will be Psychologically strong to play the match
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	2	1						2	
2			1	2						

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		

TACTICS AND TACTICAL DEVELOPMENT OF SPECIFIED SPORT/GAME – 4BCC2

UNIT – I

Tactics - definition - principles of play Attacking

UNIT - II

Tactics - principles of play Defence

UNIT - III

Tactics – individual tactics - its tactical development - training under technical and tactical aspects

UNIT - IV

Tactics – group tactics – its tactical development - training under technical and tactical aspects – training under tactical and physical aspects

UNIT – V

Tactics – team tactics – its tactical development – training under tactical aspects

– Mental training to improve tactics

REFERENCE :

1. Coaches Manual : Erric Ribbeck, Gremany
2. FIVB/FIFA/IHF/IAAF coaches manual
3. FIVB/FIFA/IHF/IAAF Rules book
4. International Academy – Part I & Part II

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To reach the top level performance it is mandatory to equip and excel the tactics.
	CO-2	By developing this tactic all the fundamentals skills of the specific sports could be enhanced at the maximum level
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		2			1				
2		3	2			2				2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2		

ALLIED THEORIES OF SPORTS AND GAMES – 4BCA1

UNIT – I

History : Origin - development - Structure - Organizational set up - Recent Trends World - Asia - India

UNIT - II

Rules of the Game - interpretation

UNIT - III

Pre requisites of an officials - qualification and qualities of officials - duties- powers - mechanism of officiating -

UNIT - IV

Techniques - Technical training - Tactics

UNIT - V

Layout of play field -constriction - leveling - marking - maintenance

REFERENCES :

1. FIVB / FIFA / IHF / FIE / IAAF Coaches manual
2. FIVB / FIFA / IHF / FIE / IAAF Rules book.

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of sports injuries and its prevention
	CO-2	Acquire knowledge on different protective device on sports equipments

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			1			1			
2		2	2			1	2			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		

SEMESTER V

KINESIOLOGY AND SPORTS BIO MECHANICS – 5BCC1

UNIT – I

Kinesiology - meaning – definition – need – importance – role - Planes – Axis

UNIT – II

Joints - types – movements Muscles – biceps – triceps - pectoralis - deltoid - origin – insertion

UNIT – III

Bio mechanics – definition - meaning - need - importance – speed - Velocity - Acceleration – relation

UNIT – IV

Motion – meaning – definition – types – Newton laws – Lever – types

UNIT – V

Stability – force – Projectile motion

REFERENCES :

1. Bruce Aberethy, (2005). The Biophysical foundation of

human movement. Human Kinetics

2. MC Clawaig, (2002). Biomechanics of human motion. Delhi : Sports publication
3. Peter Jain, (2006). Atlas of Human body. Delhi: Sports publication
4. Nancy Hamiltion, (2002) Kinesiology. Scientific basis of human motion. Newyark: Mc Graw-Hall companies, Inc.
5. Nichdas Stergious, (2004). Innovative Analysis of human movement. Human Kinetics

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of sports movemsnts.
	CO-2	Acquire knowledge about the fundamental movements.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3						2			
2		1						1		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	2	

ANTHROPOMETRY SPORTS PEDAGOGY AND TALENT IDENTIFICATION - 5BCC2

UNIT – I

Anthropometry – definition – need – importance – place of measurements –

UNIT – II

Science of pedagogy – definition – importance – training skills ability – proficiency in teaching – organic development – principles

UNIT – III

Talent identification – nature – importance - profiling one dimension - multi dimensions - prediction

UNIT - IV

Identifying physical attributes - importance - vision - assessing physical attributes

UNIT - V

Assessing psychological skills - participating stages - sampling year - specializing year - perfection year – parenting support – testing

REFERENCES:

Sports Talent : how to identify and develop outstanding sportsman. Jim Brown Human Kinetics

Identifying Exceptional Talent: 1999 Georgia tech sports Medicine and performance news letter

Andras S. Science of pedagogy ICC Semmelweis University Hungary

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Gain knowledge on Anthropometry

	CO-2	Improve individual personality by improving the talent

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1							2			
2				1		1		3		2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2		

PERSONALITY DEVELOPMENT &COMMUNICATION SKILL – 5BCC3

UNIT – I

Personality : meaning - need - importance – concept - self esteem - Guideline - good personality

UNIT – II

Career rules : psychological position - better human values – time management - leadership quality

UNIT - III

Yoga : meaning - definition - hastangayoga - benifita : physiological - psychological – therapeutical value

UNIT – IV

Communication skill : meaning – definition - need - importance - basic communication – theories of motivation - goals

UNIT - V

Communication principles – barriers - real communication listening - audience and psychology - presentation technique.

REFERENCES :

1. Abraham.R, (1995). Personality Development, communication skills and Public speaking, Saint Catherine Press, Chennai
2. Gharote. M.L, (1982). Guidelines for Yoga practice, Lonawala Medha Publications

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Improve individual personality
	CO-2	Improve the human values and leadership qualities

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1						
2		3					2			1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		

2		

SPECIFIC MOTOR QUALITIES OF SPECIFIED SPORT/GAME – 5BCC4

UNIT – I

Motor quality: development of specific speed - power meaning - definition - types

UNIT – II

Specific Strength : meaning - definition - types - Circuit training - up hill training

UNIT - III

Specific Endurance : meaning - definition - types - specific interval training

UNIT - IV

Specific Flexibility - specific Coordinative abilities : meaning – definition - types - its developments

UNIT - V

Warming up - importance - cool down - mental development – diet

REFERENCES :

1. Frank W Dick, Sports training principles, London, Lepus Book Co., 1980
2. Hardyal Singh Science of sports training, DVS Publication, New Delhi, 1995

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To understand and learn the specific qualities recovered to improve the particular game
	CO-2	Sports movement are different from sport to sport so we need to understand and choose the correct quality and to excel in the particular sports

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1				2						1
2			3			2			1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2		

SYSTEM OF PLAY AND FUNCTIONAL TRAINING – 5BCC5

UNIT – I

Strategy - meaning - importance - methods - factors

UNIT - II

System of play - importance - various systems - formation - methods

UNIT - III

Functional training - importance - methods - individual - group - team - duties - attack - defence - systematic approach

UNIT - IV

Set plays - importance - various movements - attacking - defending - factors

UNIT – V

Related practice - Phase practice - minor games - small sided game -

REFERENCES :

1. FIVB coaches manual I and II Canadian Volleyball Association
2. FIVB Rules book
3. Hubert Dhanraj, (1985). Sports Authority of India, New Delhi

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To play any sport we need to follow certain systems and rules also insist the same
	CO-2	By learning the system of play, advanced tactics could be employed to get success in a match

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	2							1	
2		3				2	3			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	

SEMESTER VI

FUNDAMENTALS OF SPORTS MANAGEMENT - 6BCC1

UNIT – I

Sports Management - meaning - organization - administration – importanc guiding principles

UNIT - II

Planning - budgeting - organizing - directing - controlling - coordinating sports - maintenance of records - registers - report

UNIT - III

Leadership - Definition - need - importance - nature - types - training - personal traits - behavior approach - contingency model

UNIT - IV

Sports Organizations – SAI - SDAT - International – National - State - District level organization

UNIT – V

Facility management – facility system - facility location - facility layout - features of facility

REFERENCES :

1. Stoner, et.al, Management, Prentice Hall
2. Koontz and O'Donnel, Management: A system Approach, Tata MCGraw Hill
3. John Argenti, Management Techniques : A Practical Guide

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The knowledge of management will help to arrange systematic formation of the program

	CO-2	The knowledge of sports management will help to program any sports event using effective system of management

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1			2							1
2		1	3		3				3	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		1

COMPUTER APPLICATION TEST AND MEASUREMENT - 6BCC2

UNIT - I

Computer – meaning – need - importance – types – maintenance - components – hardware - input - output – control unit - memory - storage

UNIT – II

Data entry - magnetic and tape – output devices - MS – Office - MS - Word – Excel – creating documents

UNIT – III

Test - measurement - meaning - need - importance

UNIT - IV

Criteria of test - reliability - objectivity - validity - availability of norms - administrative feasibility

UNIT – V

Physical fitness test - AAHPER test - JCR test - Cardiovascular test - Howard step test - sports sill test - major games –

REFERENCES:

Manddell L.S Computer and Data processing today West publishing Co.St Paul 1988

Slontnick D.L. and et.al Computer and application – An introduction to data processing D.C. health and Co.

Thompson A.L. Fujumoto K. The Art of Using Computer. Boyd & Fraser Publishing Co. Boston, 1986

Bovard J.F. Cpzens E.W. and Hagman P.E Test and Measurement in Physical Education W.B. Sunders company, Philadephia, 1949

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	This electronic device will help to design and store the data pertaining to sports performance
	CO-2	By understanding the knowledge of computer and different testing methods will help the stack holders to assess the process and product.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	2						2		
2			2					1	1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

1		
2		

PHILOSOPHY OF SPORTS COACHING – 6BCC3

UNIT – I

Coaching philosophy - coach - coaching - art – science - technique - skill - style

UNIT - II

Teaching methods - learning process - training principles - the code of ethics prepare training programs

UNIT - III

Effective practices - knowledge - functional activities of coach - teacher - trainer - motivator - disciplinarian - scientist - social worker

UNIT - IV

Performance management - Long Term Athlete Development (LTAD) - capabilities of growing children

UNIT - V

Sports coach's legal responsibilities - General Methodology - human aspects - psychological preparation

REFERENCES :

1. Coaching Manual I & II FIVB
2. Football Coaching -1, (1983), BLV Veriagsgesellschaft, Munich

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the concept of coaching with stipulated principles
	CO-2	Philosophical approach towards coaching will help the students to update their knowledge towards better performance.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3							2		
2						1				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	

TEAM PREPARATION FOR SPECIFIC /GAME - 6BCC4

UNIT – I

Player identification - selection of team player - guide to select team

UNIT - II

Modern training - technical - tactical fitness - nutrition relation to physical conditioning - off season - pre season - in season

UNIT - III

Planning - training plan - Annual plan - periodical training plan

UNIT - IV

Psychological preparation - Inter personal relation - Motivation - its relevance to the specified sports/games method -

UNIT - V

Professional requirements - age group training - Towards team sprit - goal setting - group - criticism - effective team –

REFERENCES :

1. Soccer : Arpan Csanadi
2. FIVB/FIFA/IHF/IAAF coaches manual
3. FIVB/FIFA/IHF/IAAF Rules book
4. International Academy - Part I & Part II

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Preparation for any activity is needed to execute effectively, and understanding this concept the learners will be exposed to preparation of the sportsmen for the competitions
	CO-2	The success of any program purely depends on the preparations, which will help to reach the goal.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2					1			
2		3							2	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

1		1
2		

TEAM COACHING AND MATCH ANALYSIS OF SPECIFIC SPORT /GAME – 6BCC5

UNIT – I

Organization - routine - relation - repetition - personalized coaching - player coach relationship - role of the coach - coached practice game

UNIT - II

Team meeting - Pre competition meeting - half time meeting - post match meeting - purpose - fluid replacement - diet - pre – during - after the match

UNIT - III

Match analysis - age - sex - equipment - psychological factors - environment - diet - climate - ground condition - medical assistance

UNIT - IV

Match analysis - physical fitness - technical - tactical - system - strategies - opponent's team - key player - dangerous players - strong and weak points of players - opponents

UNIT - V

Match analysis - aim - objectives - methods - system - computer assistance - execution - feedback - chart - notational analysis

REFERENCES :

1. Teaching sports skill, Eric Worthington, Lepus book, London
2. FIVB/FIFA/IHF/IAAF coaches manual
3. FIVB/FIFA/IHF/IAAF Rules book
4. International Academy - Part I & Part II

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Evaluation plays vital role in success of any program , this approach towards the competition is scientific one.
	CO-2	Understanding the importance of assessment thereby enhancing the performance by redesigning

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		1				1		2		
2		1	1			1				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2		

SPECIFIED SPORTS PRACTICAL II, IV AND VI SEMESTER

The Candidate has to select any one of the Major Games as Specified Sports practical during II, IV and VI semester

Semester	**Games**	**Marks – Max - 100**		
		Internal	**External**	**Total**
II Semester	Handball, Football, Swimming, Volleyball, Fencing, Taekwondo	100	-	100
IV Semester	Handball, Football, Swimming, Volleyball, Fencing, Taekwondo	100	-	100
VI Semester	Handball, Football, Swimming, Volleyball, Fencing, Taekwondo	25	75	100

ANCILLARY PRACTICAL : PART – I, II, III & IV

The candidate has to select any one of the following games as ancillary practical during I, II and IV semester. During III Semester the candidate has to select Track and Field Compulsory

Sport III Semester	**Games I, II and IV Semester**	**Max Marks 100 (Internal Marks)**	**Minimum pass Marks**
Track and Field	Badminton, Ball Badminton, Basketball, Handball, Hockey, Kabaddi, Football, Kho-kho, Tennis, Swimming, Table Tennis, Volleyball and Weight Lifting	100	50

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY CHENNAI-600 127

APPROVED SYLLABUS

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Choice Based Credit System

MSC SPORTS COACHING

DEGREE PROGRAMME OFFERED IN THE

DEPARTMENT OF ADVANCED SPORTS

TRAINING AND COACHING

TAMILNADU PHYSICAL EDUCATION AND

SPORTS UNIVERSITY

MSC SPORTS COACHING

Programme Educational Objectives (PEO)

- PEO-1 Inorder to obtain the thorough and wider knowledge in this specialized area to master the subject.
- PEO-2 Included research knowledge will help the student to prepare training schedule after having obtaining research results.

Educational Program Outcomes (POs):

After completion of the program graduates will be able to

PROGRAMME OUTCOMES (PO'S)

The post graduates are able to

PO-1) Attain the knowledge to impart training for elite players.

PO-2) Obtaining knowledge with latest trends to motivate the students.

PO-3) Understand the course and treatment of sports injuries.

PO-4) The knowledge of Biomechanics empowered to analyze every movement of the sportsmen for effective performance.

PO-5) Identification of sports talent will help the stake holders to have effective method of identification of talent for the better performance.

PO-6) The designed Coaching camps and internship program will help the student to get exposure in teaching and training the fundamental skills.

PO-7) Imparting suitable training to the sports specific.

PO-8) Motivate the students for updating the sports related knowledge

PO-9) To make awareness among the common public the health benefits will be demonstrated.

PO-10) Imparting the knowledge for effective judgement in advance level Sports

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X	X	X	X	X	X	X	X	X	X
PEO-2				X		X				

PROGRAM SPECIFIC OUTCOMES (PSO)

The post graduates are able to

PSO 1 Understanding the different components of sports training skills and its developments.

PSO-2 Intend to work with the young children for sports excellence.

SEMESTER I

SCIENCE OF SPORTS TRAINING

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The knowledge of advance sports training principles will help to understand different motor qualities and to develop this sports specific qualities.
	CO-2	Understanding the factors influencing the motor qualities.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2	2			1					2
2		2		2			1			3

MAPPING (CO's and PSO's

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2	2	

ANATOMY AND EXERCISE PHYSIOLOGY

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the structure, functions and its influence on exercise.
	CO-2	Proper exercise may be prescribed for the development of the muscles and training

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3					2				2
2		3		2						3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2	2	

SEMESTER II

SPORTS MEDICINE AND NUTRITION

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Helps to understand the causes and treatment of sports injuries
	CO-2	Develop the knowledge of side effects of doping

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		2		1					1
2	1		2						1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2		

EXERCISE PSYCHOLOGY

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the personality and behaviour of a sport person
	CO-2	This Psychological knowledge will helps and leads to behavioural

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2						3	2		
2			2				1	1		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	2

SEMESTER III

KINESIOLOGY AND BIOMECHANICS

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of sports specific movements and analysis.
	CO-2	Acquire knowledge about the fundamental and sports specific movements.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	2		2		1				
2	1		2	3					1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

SEMESTER IV

RESEARCH METHODOLOGY AND STATISTICS IN ADVANCED TRAINING AND COACHING

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand research problem formulation
	CO-2	Analyze research related information
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	2		3					1	
2	1						2			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1
2	2	

TEST AND MEASUREMENT IN ADVANCED TRAINING AND COACHING

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To understand and analyze the different components of sports with scientific test
	CO-2	This knowledge will help to reschedule the training programme based on the results
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1					3	
2			1					2		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1
2		

GENERIC ELECTIVE PAPER

DOPING IN SPORTS

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To understand the classification of doping and its adverse effect on human system
	CO-2	Understand the side effect of doping

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3	2				2			3	
2						2			2	1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2	2	

STRENGTH AND CONDITIONING

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To understand the influence of strength component and its development
	CO-2	To update the recent trend in conditioning ability of sportmen

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1				3					
2	2				3		2			1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	1

PHILOSOPHY OF SPORTS COACHING

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the concept of coaching with stipulated principles
	CO-2	Philosophical approach towards coaching will help the students to update their knowledge towards better performance.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1				3					
2	2				3		2			1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		

AGE GROUP TRAINING

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the implementation of the training program to the selected sports
	CO-2	Learn and implement different factors on the age and training outcome.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1							2		
2		2						3		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		

IMPLEMENTATION OF TRAINING PROGRAMME

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the implementation of the training program to the specific sports
	CO-2	Learn and implement different factors of training.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1				3					
2	2				3		2			1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

DISCIPLINE SPECIFIC ELECTIVE – ODD SEMESTER

TESTING OF PLAYERS FITNESS

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the concept of testing to analyze the performance
	CO-2	By updating the knowledge in testing, redesigning the training program could be framed

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1		2					1		
2		2					1			2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		

WOMEN PARTICIPATION IN THE OLYMPIC MOVEMENT

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the Physiological factors influencing the sports performance among women
	CO-2	Performance program could be arranged for women to excel in the international sport
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			3						1
2			2			1				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1
2		

REQUIREMENTS OF THE SPORTS AND GAME

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The knowledge of advance sports training principles will help to understand different motor qualities and to develop this sports specific qualities.
	CO-2	Understanding the factors influencing the motor qualities.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			3						1
2			2			1				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	

SCIENCE OF SPORTS KINANTHROPOMETRY

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Obtained knowledge in Kinanthropo, will help to identify the sports specific movements
	CO-2	The knowledge of Kinanthropo provides deep understanding of the sports specific movements

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	2	1						2	
2			1	2						

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2		

DISCIPLINE SPECIFIC ELECTIVE – EVEN SEMESTER

TALENT IDENTIFICATION AND SCIENCE PEDAGOGIC

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Updated knowledge to excel the effective teaching methodology
	CO-2	Learned the ICT based teaching.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		2		2	1				
2			2		2	2				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		

SPORTS FORENSIC SCIENCE

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the effect of Psychological component and players security of personal data
	CO-2	Understanding the administrating capacity in Sports

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	3		1			1			
2		2	2			1	2			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		

CAREERS IN THE SPORTS INDUSTRIES

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the job opportunities in this field
	CO-2	Understanding the different administrative capacity

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	3						2			
2		1						1		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	2	

ENVIRONMENT AND NUTRITION OF THE PLAYER

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the environmental factors to perform better sports
	CO-2	Understand to identify the nutritional benefits of sportsmen.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1							2			
2				1		1		3		2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2		

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY CHENNAI-600 127

APPROVED SYLLABUS

(Applicable to the students admitted from the academic year 2018-2019 onwards)

Choice Based Credit System

PG DIPLOMA COACHING

DEGREE PROGRAMME OFFERED IN THE

DEPARTMENT OF ADVANCED SPORTS

TRAINING AND COACHING

TAMILNADU PHYSICAL EDUCATION AND

SPORTS UNIVERSITY

PG DIPLOMA SPORTS COACHING

Programme Educational Objectives (PEO)

- PEO-1 In order to obtain the thorough and wider knowledge in the specialized area to master the subject.
- PEO-2 Included all types of training to train the different level of players.

Educational Program Outcomes (POs):

After completion of the program graduates will be able to

PROGRAMME OUTCOMES (PO'S)

The post graduates are able to

PO-1)Able to teach and train the fundamental skills of the selected Sports.

PO-2)Obtaining knowledge with latest trends to motivate the students.

PO-3) To effectively impart the technique and tactical aspect of fundamental skills.

PO-4) Understanding the knowledge of Biomechanics for effective teaching and training

PO-5) Enable to indentify the right person for the sports participation.

PO-6) The knowledge gain from internship will help to reschedule the plan

PO-7) Imparting specific training to the sports specific.

PO-8)Understanding the effective method of teaching the fundamental skills.

PO-9) To help the common public, to become physically fit.

PO-10) Imparting the knowledge for effective judgement in advance level Sports

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1	X	X	X	X	X			X		
PEO-2	X		X		X	X			X	

PROGRAM SPECIFIC OUTCOMES (PSO)

The post graduates are able to

PSO 1 Designed to teach and train the fundamental skills of specified sports.

PSO-2 Integrate pedagogy and coaching for better sports performance among the students.

SEMESTER I

GENERAL THEORY AND METHODS OF TRAINING

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Obtained knowledge in terms of sports training will help to formulate the suitable training programme..
	CO-2	Understanding the factors for the development of sports skills and fitness.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1										
2									1	

MAPPING (CO's and PSO's

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		

EXERCISE PHYSIOLOGY AND NUTRITION

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand the structure, functions and its influence on exercise.
	CO-2	Understanding the knowledge of nutrition to formulate the menu and to keep good health

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1					3					
2									1	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

SPORTS MEDICINE AND ANTHROPOMETRY

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Helps to understand the causes and treatment of sports injuries
	CO-2	The knowledge of Anthropometry will help to recommend the talented person to the respective sport

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1						2			1	
2					1				1	2

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

MAIN SPORTS THEORY PAPER I

FOOTBALL

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the history and development of Football for effective teaching
	CO-2	Understanding the rules and regulations of Football for better teaching and training

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		2					3			
2			2				1			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	

MAIN SPORTS THEORY PAPER II

FOOTBALL

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Helps to understand the training programme and evaluation process
	CO-2	Helps to understand the different system of play for better performance.
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1			1			3				
2			2							

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		

THEORY AND SCIENCE OF VOLLEYBALL

PAPER I

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the rules and regulations of the game for better teaching
	CO-2	Understand the organizational setup and its significance for the promotion of Volleyball
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		1				2			1	
2	1						2			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1
2	2	

THEORY AND SCIENCE OF VOLLEYBALL

PAPER II

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the significance of warming up and impart better teaching
	CO-2	To obtain the tactical knowledge, to implement for the best performance

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1						
2			1					2		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		1
2		

THEORY AND SCIENCE OF HANDBALL

PAPER I

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Obtaining the knowledge of history and to motivate the students for better learning
	CO-2	Gain knowledge in terms of fundamental skills and tactics.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1				3						1
2						1				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

THEORY AND SCIENCE OF HANDBALL

PAPER II

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Helps to understand the rules of the game
	CO-2	Obtaining the knowledge of different fundamental skills.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2			1				3		1
2						1				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2		

SEMESTER II

SPORTS PSYCHOLOGY

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	To solve the issues related to sports performance
	CO-2	Acquire knowledge on motivational factors

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		1				2				
2		1							2	

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	2	

KINESIOLOGY AND BIOMECHANICS

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Gain knowledge in Biomechanics and to use it for better performance
	CO-2	Acquire knowledge about the fundamental and sports specific movements.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1				1						
2	3			1						1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	1	

MAIN SPORTS THEORY PAPER III

FOOTBALL

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Develop the team tactics among the Football players
	CO-2	Force to understand the recent trends in Football

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1									
2					3		2			1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

MAIN SPORTS THEORY PAPER IV

FOOTBALL

MAPPING (CO's and PSO's)

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding principles of periodization to formulate training programme
	CO-2	Learn and implement different factors on the age and training outcome.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1								2		
2		2						3		

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		

THEORY AND SCIENCE OF VOLLEYBALL

PAPER III

MAPPING (CO's and PSO's)

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Obtained knowledge in talent identification will help to spot out the talent for better performance
	CO-2	Updated planning and periodization programme will help to solve periodizing the plan effectively

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1			3							
2	1				2					

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

THEORY AND SCIENCE OF VOLLEYBALL

PAPER IV

MAPPING (CO's and PSO's)

Course Outcomes	Program Specific Outcomes (PSO)

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	For the development of team tactics and performance output this knowledge of tactics and tactical development could be used.
	CO-2	Understanding the knowledge of sports marketing is one of the factor to develop sports

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1							1		
2		2					1			

(CO)	1	2
1	1	
2		

THEORY AND SCIENCE OF HANDBALL

PAPER III

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Benefit of testing knowledge in assessing the skills will be obtained
	CO-2	The knowledge of sports injuries would be useful for the entire training and developmental programme

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			3						1
2			2			1				

1		
2	2	

THEORY AND SCIENCE OF HANDBALL

PAPER IV

MAPPING (CO's and PSO's)

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Given subject knowledge in group and team tactics in Handball could be beneficial for the trainees
	CO-2	Learning the Psychological knowledge could be utilized as a tool to motivate the sportsmen

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1	1								1
2		1	2			1				

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY CHENNAI-600 127

APPROVED SYLLABUS

(Applicable to the students admitted from the academic year 2008-2009 onwards)

Choice Based Credit System

MPhil SPORTS COACHING

DEGREE PROGRAMME OFFERED IN THE

DEPARTMENT OF ADVANCED SPORTS

TRAINING AND COACHING

TAMILNADU PHYSICAL EDUCATION AND

SPORTS UNIVERSITY

MPhil SPORTS COACHING

Programme Educational Objectives (PEO)

- PEO-1 Thorough and wider knowledge obtained in research would be useful for the future research activities.
- PEO-2 To formulate effective training modules this knowledge will be used.

Educational Program Outcomes (POs):

After completion of the program graduates will be able to

PROGRAMME OUTCOMES (PO'S)

The post graduates are able to

PO-1) Graduate will be exposed to better and depth successful academic and research career.

PO-2) The stack holders will be exposed to modern training so that they can design and execute the latest training methods.

PO-3) The students will be exposed to obtain the knowledge of Biomechanical analysis and approach

PO-4)True nutritional values supporting better performance will be obtained by the graduates.

PO-5) The graduates exposed to enrich their knowledge to incorporate the required Psychological qualities for training purpose.

PO-6) Understand and use the statistical procedure for analysing the performance data for assessment.

PO-7) Identification of sports talent will help the stake holders to have effective method of identification of talent for the better performance.

PO-8) Make corrective measures based on their own experiences.

PO-9) Exhibit social responsibility adhering to ethical values.

PO-10) Motivate the students for updating the sports related knowledge

MAPPING OF PEO'S WITH PO'S

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
PEO-1		X				X		X	X	
PEO-2				X			X			

PROGRAM SPECIFIC OUTCOMES (PSO)

The post graduates are able to

PSO 1 Understanding the research knowledge for better evaluation and replanning.

PSO-2 Encourage the graduates to expose research based analysis and formulate training schedule

SEMESTER I

Research Processes and advanced statistics in training and coaching

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand research problem formulation
	CO-2	Understand to analyze the research output
3	**MAPPING (CO's and PO's)**	

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1				3					
2	1							2		

MAPPING (CO's and PSO's

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	2	
2	2	

Modern Trends in advanced training and coaching

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The scholars are exposed to understand recent changes in training methods.
	CO-2	The knowledge of different training methods will be exposed to select the suitable training method

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1		1			3					3
2		1						2		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		

Application of Biomechanics in advanced training and coaching

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understand various kinds of sports specific movements and analysis.
	CO-2	Acquire knowledge about the advance and sports specific movements.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		1							3
2			1				2			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		2

Anatomy, exercise Physiology and Nutrition

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The graduates gain knowledge with Physiological aspect of training outcomes.
	CO-2	Understand and to advocate suitable nutritional diet to the sports specific activity.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1				1						3
2	3					2				

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1	1	
2		2

Sports Psychology and Sociology

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The graduates are exposed to obtain knowledge in the Psychological domain of personality traits.
	CO-2	The stack holders gain the knowledge of sociology and its impact on training

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2						2			1
2				3						1

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

SEMESTER II

Talent identification and science of pedagogic

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The different pedagogic approach using electronic devices for better identification of talent.
	CO-2	The knowledge and process of talent identification using scientific method could be obtained by the students.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2		1				1			
2							1			3

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2	2	

Measurement and evaluation in advances training and coaching

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	Understanding the importance and significance of measurement and its techniques to collect data for future analysis.
	CO-2	This knowledge will help to reschedule the training programme based on the results

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	2							1		2
2				3				1		

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		
2		2

Advanced sports training

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The knowledge of advance sports training principles will help to understand different motor qualities and to develop this sports specific qualities.
	CO-2	Understanding the factors influencing the motor qualities for the advance level of players.

3 **MAPPING (CO's and PO's)**

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			3						2
2			2				1			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2	1	

Advanced sports training

2	**COURSE OUTCOMES: Students are able to**	
	CO-1	The knowledge of advance sports training principles will help to understand different motor qualities and to develop this sports specific qualities.
	CO-2	Understanding the factors influencing the motor qualities for the advance level of players.

3 MAPPING (CO's and PO's)

Course Outcomes	Program Outcomes									
	1	2	3	4	5	6	7	8	9	10
1	1			3						2
2			2				1			

MAPPING (CO's and PSO's)

Course Outcomes (CO)	Program Specific Outcomes (PSO)	
	1	2
1		2
2	1	

Tamil Nadu Physical Education and Sports University Chennai 600 127.

Registrar
Tamilnadu Physical Education
and
Sports University
Chennai

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

CHENNAI-600 127

BSc., SPORTS BIOMECHANICS AND KINESIOLOGY

CBCS CURRICULUM - 2019-2020

DEPARTMENT OF EXERCISE PHYSIOLOGY AND BIOMECHANICS

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
DEPT. OF EXERCISE PHYSIOLOGY AND BIOMECHNANICS
MELAKKOTTAIYUR POST
CHENNAI - 600 127
B.Sc., SPORTS BIOMECHANICS AND KINESIOLOGY
(Three years Regular Programme)

CHOICE BASED CREDIT SYSTEM (CBCS)

Objectives of BSc Sports Biomechanics and Kinesiology Under Graduate Programme:

1. To gain knowledge on anatomy and physiology, kinesiology, biomechanics, motor skills, techniques of human movement and sports skills, research and statistics, and biomechanical instrumentation and measurement in 2D and 3D with inverse dynamics.
2. To apply the principles of mechanics on the human movement and sports skills to enhance the performance and reduce the risk of injury.
3. To analysis the sports skill technique/performance qualitatively and quantitatively using the biomechanical instrumentation and measurement.
4. To gain knowledge in the area of gait analysis and analysis the normal gait and pathological gait.
5. To assess the human body posture and prescribe corrective exercise to correct postural deviations.
6. To create a platform for students to engage in sports biomechanics research and pursue higher research degrees.
7. To produce an efficient sports biomechanist to work in research laboratories, sports academies, national teams, and faculty in academic institutions.
8. To produce sports performance analyst to work with sports teams/sports clubs/research labs as sports performance analyst.

REGULATIONS:

B.Sc. **Sports Biomechanics and Kinesiology** (Three Years) Undergraduate Regular Degree programme under CBCS system is implemented from the academic year 2019-2020 onwards.

1. ELIGIBITLITY FOR ADMISSION:

A Candidate shall be admitted to the degree of **Bachelor of Science in Sports Biomechanics and Kinesiology** only if he/she produces satisfactory evidence to the effect that he/she has successfully completed Higher Secondary examinations with Maths / Physics / Biology / Computer Science / Chemistry / Statistics or its equivalent approved by the syndicate of the Tamil Nadu Physical Education and Sports University. Sports participation at District / Divisional / State / National (School/Open) level is desirable.

Maximum number of seats is 40.

2. COURSE OF STUDY:

B Sc. **Sports Biomechanics and Kinesiology** is a three academic year's regular degree programme comprising of six semesters. The maximum duration of the course is 6 years from the date of joining.

3. SEMESTERS:

An academic year is apportioned into two semesters.

Odd Semester - July to November

Even Semester - December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days and 6 hours a day (30 hours a week). For Co-curricular activities and Project, the candidates will be working extra hours in lab, library and pertaining field of study.

4. CHOICE BASED CREDIT SYSTEM (CBCS)

The CBCS in **B Sc**. **Sports Biomechanics and Kinesiology** programme would have the following components and the minimum credit requirements for each component to be completed in three years are:

	Core CGPA	Credits details		Total Credits
PART I	1. Languages	8 papers	4 credits	**32 credits**
PART-II	2. Core Theory	12 papers	4 credits	**48 credits**
	3. Discipline Specific Electives	6 papers	4 credits	**24 credits**
	4. Core practical	12 practical	2 credits	**24 credits**
Non- CGPA				
PART -III	5. Ability Enhancement Course (AEC)	1 papers	4 credits	**04 credits**
	6. Skill Enhancement Course (SEC)	2 papers	4 credits	**08 credits**
	7. Co –Curricular Activities	6 activities	2 credits	**12 credits**
Total Credits				**152 credits**

CGPA- CUMULATIVE GRADE POINT AVERAGE: A CGPA credit course has been classified into four components enlisted in part I and part II. The marks earned in the CGPA courses will be calculated for overall percentage of marks.

NON- CGPA: The students can earn additional credits by the way of choosing Non- CGPA compulsory credit course such as ability enhancement courses, skill enhancement courses and co-curricular activities. The marks scored in the NON-CGPA courses will not be accounted in overall percentage calculation.

SEMESTER WISE CREDIT DISTRIBUTION

Semester	Language	Core Theory	DSE	Core Practical	AEC	SEC	Co-curricular activities	Total Credits	Total Marks
I	8 Credits (2*4)	12 Credits (3*4)	-	4 Credits (2*2)	-	-	02 credits	**26**	**700**
II	8 Credits (2*4)	12 Credits (3*4)	-	4 Credits (2*2)	04 Credits	-	02 credits	**30**	**800**
III	8 Credits (2*4)	12 Credits (3*4)	-	4 Credits (2*2)	-	-	02 credits	**26**	**700**
IV	8 Credits (2*4)	12 Credits (3*4)	-	4 Credits (2*2)	-	02 Credits	02 credits	**28**	**800**
V	-	-	12 Credits (3*4)	4 Credits (2*2)	-	04 Credits (1*4)	02 credits	**22**	**600**
VI	-	-	12 Credits (3*4)	4 Credits (2*2)	-	02 Credits (1*4)	02 credits	**20**	**600**
Total	**32**	**48**	**24**	**24**	**04**	**08**	**12**	**152**	**4200**

5. <u>COURSE WEIGHT:</u>

Courses are designed with weightage of four/two credits, depending upon the content, duration and specialization.

Theory: Each theory hour per week is considered as 1 credit.

Practical: Each two practical hours per week is considered as 1 credit.

6. <u>CREDIT DISTRIBUTION</u>:

B.Sc., SPORTS BIOMECHANICS AND KINESIOLOGY (Three Academic Years) under graduate degree programme semester wise credit distribution as follow.

Semester-I							
Part -I	**Course Code**	**Name of the Course**	**Lecture**	**Credit**	**Internal**	**External**	**Total**
Language	USBK19CT101	Tamil – I / Hindi- I	4	4	25	75	100
	USBK19CT102	English - I	4	4	25	75	100
Core Theory	USBK19CT103	Introduction to Human Anatomy and Physiology	4	4	25	75	100
	USBK19CT104	Basic Biomechanics	4	4	25	75	100
	USBK19CT105	Mathematics in Biomechanics	4	4	25	75	100
Part –II Core Practical	USBK19CP101	Anatomy and Physiology	4	2	25	75	100
	USBK19CP102	Biomechanics	4	2	25	75	100
Total				**24 C**			**700**
	NON CGPA						
Part – III A	Ability Enhancement Course (AEC)	-	-	-	-	-	-
PART III B	Skill Enhancement Course (SEC)	-	-	-	-	-	-
PART III C	Co-curricular Activities	NSS / Swachh Bharat / MOOC / Sports participation / VPP / Workshop / Conference / Match Scouting	-	2	-	-	-
Grand Total			**28**	**26 C**			**700**

Paper Code	PRACTICAL	CONTENT
USBK19CP101	**Anatomy & Physiology**	1. levels of organization, 2. skeletal system gross anatomy; 3. axial skeleton; skull, hyoid bone, vertebral column and thoracic cage- 4. appendicular skeleton; pectoral girdle and upper limb, pelvic girdle and lower limb, bone shapes, bone types, joints and its types, types of movements. 5. Functions of muscular, properties system of muscle and types of muscle.
USBK19CP102	**Basic Biomechanics**	1. Equilibrium and human movement, 2. Force , Gravity, Centre of gravity, 3. Newton laws & Its concept, 4. Kinematic concepts for analysing human movement, 5. Kinetic concepts for analysing human movement.

Semester-II							
Part -I	**Course Code**	**Name of the Course**	**Lecture**	**Credit**	**Internal**	**External**	**Total**
Language	USBK19CT201	Tamil – II / Hindi II	4	4	25	75	100
	USBK19CT202	English - II	4	4	25	75	100
Core Theory	USBK19CT203	Applied Anatomy and Physiology	4	4	25	75	100
	USBK19CT204	Introduction to Kinesiology	4	4	25	75	100
	USBK19CT205	Physiology of Exercise	4	4	25	75	100
Part –II Core Practical	USBK19CP201	Applied Anatomy and Physiology	4	2	25	75	100
	USBK19CP202	Kinesiology	4	2	25	75	100
Total				**24 C**			**700**
	NON CGPA						
Part – III A	Ability Enhancement Course (AEC)	Environmental studies	4	4	25	75	100
PART III B	Skill Enhancement Course (SEC)	-	-	-	-		-
PART III C	Co-curricular Activities (CCA)	NSS / Swachh Bharat / MOOC / Sports participation / VPP / Workshop / Conference / Match Scouting	-	2	-	-	-
Grand Total			**28**	**30C**			**800**

Paper Code	**PRACTICAL**	**CONTENT**
USBK19CP201	**Applied Anatomy& Physiology**	Identification of bones in spine , Shoulder, Elbow, Wrist, Anatomical Landmarks and Identification of Muscles, Pathological Conditions of Spine , Shoulder, Pelvis
USBK19CP202	**Kinesiology**	Movement Terminology, Joint Functions and Measuring Joint Range of Function, Analysis of Fundamental Movements, Gait and Posture

Semester-III							
Part -I	**Course Code**	**Name of the Course**	**Lecture**	**Credit**	**Internal**	**External**	**Total**
Language	USBK19CT301	Tamil – III / Hindi III	4	4	25	75	100
	USBK19CT302	English - III	4	4	25	75	100
Core Theory	USBK19CT303	Applied Biomechanics	4	4	25	75	100
	USBK19CT304	Motor Learning	4	4	25	75	100
	USBK19CT305	Kinanthropometry	4	4	25	75	100
Part –II Core Practical	USBK19CP301	Applied Biomechanics	4	2	25	75	100
	USBK19CP302	Kinanthropometry	4	2	25	75	100
Total				**24 C**			**700**
	NON CGPA						
Part – III A	Ability Enhancement Course (SEC)	-	-	-	-	-	-
PART III B	Skill Enhancement Course (SEC)	-	-	-	-	-	-
PART III C	Co-curricular Activities	NSS / Swachh Bharat / MOOC / Sports participation / VPP / Workshop / Conference / Match Scouting	-	2	-	-	-
Grand Total			**28**	**26 C**			**700**

Paper Code	PRACTICAL	CONTENT
USBK19CP301	**Applied Biomechanics**	1. Motion analysis using video- equipment considerations- video cameras, picture quality, frame rate, shutter speed, 2. Motion analysis using online systems 3. Force and pressure measurement 4. Surface electromyography 5. Isokinetic dynamometry-Applications
USBK19CP302	**Kinanthropometry**	1. Measurement of Body Mass Index, 2. Palpation Techniques, 3. Anthropometric measurements, 4. Somatotyping, 5. Somatographing.

Semester-IV							
Part -I	**Course Code**	**Name of the Course**	**Lecture**	**Credit**	**Internal**	**External**	**Total**
Language	USBK19CT401	Tamil – IV / Hindi IV	4	4	25	75	100
	USBK19CT402	English - IV	4	4	25	75	100
Core Theory	USBK19CT403	Introduction to Human Gait and Posture	4	4	25	75	100
	USBK19CT404	Biomechanics of Track events	4	4	25	75	100
	USBK19CT405	Biomechanics of field events	4	4	25	75	100
Part –II Core Practical	USBK19CP401	Biomechanics of Track and field events	4	2	25	75	100
	USBK19CP402	Human Gait and Posture	4	2	25	75	100
Total				**24 C**			**700**
NON CGPA							
Part – III A	Ability Enhancement Course (SEC)	-	-	-	-	-	-
PART III B	Skill Enhancement Course (SEC)	Internship	-	2	25	75	100
PART III C	Co-curricular Activities	NSS / Swachh Bharat / MOOC / Sports participation / VPP / Workshop / Conference / Match Scouting	-	2	-	-	-
Grand Total			**28**	**28 C**			**800**

Paper Code	Practical	Content
USBK19CP401	**Track and field events**	**1. Running Events** Sprint (100m,200m and 400m),Middle and Long distance running. **2. Jumping Events** Long Jump, High Jump, triple Jump, Pole Vault.
USBK19CP402	**Human Gait and Posture**	1. Analysis of fundamental movements, gait and posture 2. Gait Cycle, Running Gait, Pathological Gait 3. Posture, poor Posture, Type of Poor Posture 4. Corrective Exercise for poor Posture.

Semester-V							
Part -I	**Course Code**	**Name of the Course**	**Lecture**	**Credit**	**Internal**	**External**	**Total**
Core Theory	USBK19CT501 USBK19CT502 USBK19CT503 USBK19CT504 USBK19CT505	A student can choose any one of the discipline specific electives subject enlisted in the odd semester and even semester according to his/her choice.	4	4	25	75	100
			4	4	25	75	100
			4	4	25	75	100
Part –II Core Practical		Biomechanics of sports and games I	4	2	25	75	100
	USBK19CP502	Biomechanics of sports and games II	4	2	25	75	100
Total				**16 C**			**500**
NON CGPA							
Part – III A	Ability Enhancement Course (SEC)	-	-	-	-	-	-
PART III B	Skill Enhancement Course (SEC)	Computer Applications in Biomechanics and Kinesiology	4	4	25	75	100
PART III C	Co-curricular Activities	NSS / Swachh Bharat / MOOC / Sports participation / VPP / Workshop / Conference / Match Scouting	-	2	-	-	-
Grand Total			**24**	**22 C**			**600**

Discipline Specific Electives Subjects	
Course code	**Course name**
USBK19CT501	Biomechanics of sports and games I
USBK19CT502	Biomechanics of sports and games II
USBK19CT503	Fundamentals of Research and Statistics in Biomechanics and Kinesiology
USBK19CT504	Software Applications in Biomechanics and Kinesiology
USBK19CT505	Sports Technology

Paper Code	Practical	Content
USBK19CP501	**Biomechanics of Sports & Games – I**	Hockey, Football, Cricket, Boxing, Fencing, Gymnastics, Golf & Cycling
USBK19CP502	**Biomechanics of Sports & Games – II**	Basketball, Handball, Volleyball, Kabaddi, Tennis, Table Tennis, Badminton, Squash, Swimming

Semester-VI							
Part -I	**Course Code**	**Name of the Course**	**Lecture**	**Credit**	**Internal**	**External**	**Total**
Core Theory	USBK19CT601	A student can choose any one of the discipline specific electives subject enlisted in the odd semester and even semester according to his/her choice.	4	4	25	75	100
	USBK19CT602		4	4	25	75	100
	USBK19CT603 USBK19CT604 USBK19CT605		4	4	25	75	100
Part –II Core Practical	USBK19CP601	Sports Performance Analysis	4	2	25	75	100
	USBK19CP602	Introduction to Sports Programing Skills	4	2	25	75	100
Total				**16 C**			**500**
	NON CGPA						
Part – III A	Ability Enhancement Course (AEC)	-	-	-	-	-	-
PART III B	Skill Enhancement Course (SEC)	Group Project	4	2	25	75	100
PART III C	Co-curricular Activities	NSS / Swachh Bharat / MOOC / Sports participation / VPP / Workshop / Conference / Match Scouting	-	2	-	-	-
Grand Total			**24**	**20 C**			**600**

Discipline Specific Electives Subjects	
Course code	**Course name**
USBK19CT601	Introduction to Sports Performance Analysis
USBK19CT602	Foundations of Sports Training, Measurement & Evaluation
USBK19CT603	Introduction to Mat lab in Biomechanics and Kinesiology
USBK19CT604	Introduction to Python in Biomechanics and Kinesiology
USBK19CT605	Introduction to opensim in Biomechanics and Kinesiology

Paper Code	**Practical**	**Content**
USBK19CP601	**Sports Performance Analysis**	
USBK19CP602	**MATLAB/ Python / Opensim**	

7. CREDIT REQUIREMENT FOR THREE YEARS B.Sc., PROGRAMME:

Core (CGPA)	Credits		Marks
Languages	8*4=32	32 Credits	800
Core subjects	12*4=48	48 Credits	1200
Core Practical	12*2=24	24 Credits	1200
DSE	6*4=24	24 Credits	600
Total = 128 credits			
Mandatory NON CGPA (Compulsory)			
AEC	1*4=04	04 Credits	100
SEC	2*2=04 1*4=04	08 Credits	300
Co - curricular Activities	6*2=12	12 Credits	
Total = 24 credits			
	Total	**152 Credits**	**4200**

8. ASSESSMENT:

Theory

Assessment of the student's attainment will consist of Continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 25-75.

Continuous Internal Assessment (CIA)

a) The CIA marks shall be awarded based on the following:

Best Scores of two tests out of three tests	- 15
Seminar /Assignment / Group Discussion	- 6
Attendance	- 4

	25
	---

b) The Attendance is calculated from the date of commencement of programme in each semester

The candidates who secure 80 % of attendance and above will be permitted to write the respective semester exam. The candidates who fail to secure 80% of attendance will have to redo the course.

9. END SEMESTER EXAMINATION (ESE):

Except in the case of and exclusively practical/project/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 75 for theory papers.

Practical exam will be assessed for a maximum of 75 marks externally and 25 marks internally.

10. EVALUATION:

The following procedure will be followed for evaluation

a) The answer scripts are evaluated by either internal or external examiners (Single valuation)

b) If there is 10% difference between the two examiners, a third revaluation is conducted, which will be final.

c) The Question paper pattern followed as per the CBCS pattern.

Part-A (Questions numbered as 1-10)	10 questions	10*2= 20 Marks
Part-B (Questions numbered as 11-15)	Question 11(a) or question 11(b)	5*5=25 Marks
Part-C (Questions numbered as 16-20)	Three question out of five	3*10=30 Marks

For a pass in each paper, the candidate is required to secure at least 50% in the end semester Examinations (i.e.) 12 in Internal and 38 in External compulsory.

11. THE AWARD OF GRADES IS AS FOLLOW

Raw Scores	Grade	Description	Grade Points
90 and above	S	Superior	9.0 – 10.0
80 to 89	A	Very Good	8.0 – 8.9
70 to 79	B	Good	7.0 – 7.9
60 to 69	C	Very Fair	6.0 – 6.9
50 to 59	D	Satisfactory	5.0 - 5.9
Less than 50	F	Failure	< 5.0

If a student has any grievance relating to his/her CIA, he/she may, within three working days of the declaration of the Scores/thereof, prefer an appeal through his/her class Advisor to the appeal committee, which will consists of the HOD, class advisor and course teacher. The Appeal committee will review/peruse the student's record work. Any appeal should be made along with an appeal fee as per university norms. The decision of the appeals committee shall be final.

Single valuation system will be adopted for ESE valuation and therefore revaluation is permitted by paying a fee of Rs.300/- per paper.

12. CO CURRICULAR ACTIVITIES:

The number of credits allotted for each Co-curricular activities is two.

1. **NSS**

   A student has to enroll in NSS first year and serve in NSS for at the start of period of two years (120 hours each year) and production of regular certificate; he /she will be awarded two credits.

2. **SWACHH BHARAT**

   A student has to serve for 15 days in village and produce a report signed by village administration officer to acquire the two credits.

3. **WORKSHOP / CONFERENCE**

   A student has to enroll any relevant Workshop / Conference and submit the participation certificate to the department to acquire the two credits.

4. **INTERNSHIP**

   A student has to attend the internship programme for a period of two weeks in the summer vacation of second year. He/she will be visiting the established sports biomechanics laboratories to gain hands on experience and submit the internship report in the department at the start of third semester to acquire two credits.

5. **Sports participation**

   A Student will acquire 2 credits if he/she represents inter university team.

6. **VPP**

   A student has to attend the village placement programme for a period of three days. He/she will be visiting the nearby village and analyzing the health status of peoples and report in the department to acquire two credits.

7. **Match Scouting**

   A Student will do a notational analysis in a game in a tournament and submit a report. On Submission of report he/she will acquire 2 credits.

SEMESTER- I
PAPER CODE - USBK19CT101(B)
HINDI I (B)

UNIT- I
Prose: SabhayataKaRashasya by Premchand
Business & Administrative Terminology – Translation from Hindi to English Business Letters – Enquires, Orders and Complaints

UNIT – II
Prose: Mitratha by AacharyaRamchandraShukla
Business & Administrative Terminology – Translation from Hindi to English Letters to the Editor for Social cause

UNIT – III
Prose: Nayasamaj by Hari Krishna "Premi"
Official Letters: Memorandum, Circular

UNIT – IV
Prose: BadtheshoreKaGehrataSankat by Ravendra Kumar
Applied Grammar: Change the Tense
Official Letters: Reminder, Notice, Office Order

UNIT V
Prose: TootiHuyiZindagi by Sri RajjanTrivedi
Applied Grammar: Correction of Sentence
Letters of Application: Leave Letter & Banking Letters – Opening an account closing an account, issue of cheque book

Reference Books:

1. Prose (Detailed Study) : HINDI GADHYA MALA By Dr. Syed Rahamathullah Pub: PoornimaPrakashan No 4/7B, Begum 3rd Street, Royapettah, Chennai – 600 014.
2. Applied Grammer : HINDI GRAMMER By Sastri&Apte Dakshin Bharat Hindi PracharSabha T.Nagar, Chennai – 600 017.
3. Functional Hindi & Letter Writing : PRAYOJAN MOOLAK HINDI By Prof .Dr. Syed Rahamathullah Dr.ChittiAnnapoorna Pub: PoornimaPrakashan No 4/7B, Begum 3rd Street Royapettah, Chennai – 600 014.

SEMESTER- I
PAPER CODE – USBK19CT102
ENGLISH I

OBJECTIVES:

1. To make students involved in Listening and writing for developing Basic Learning Skills.
2. To make academic presentations precisely, logically and effectively

LEARNING OUT COMES:

1. Students can learn theme, ideas and information from Listening from a poem, prose, short story etc…
2. This enhance students to know how to write in basic level,
3. Students can gain knowledge on both uses and usage of grammar section.

LISTENING & SPEAKING

UNIT-I

A) Greeting people & responding to greetings
B) Introducing oneself & Other People
C) Asking for and giving personal Details (Name, Occupation, etc.,)

UNIT-II

A) Using the Telephone- exchanging information & taking messages
B) Describing a visual clipping

WRITING

UNIT-III

A) Completing forms with personal details bio-data & curriculum vitae
B) Paragraph writing converting note making to paragraph.
C) Interpreting advertisements

UNIT-IV

A) Grammar in Usage
B) Descriptive writing- describe a scene / a person/ a situation
C) Translate 50 words

UNIT-V

A) Cabuliwallah - Rabindranath Tagore
B) The last Leaf - O.Hentry
C) Upper division Love - ManoharMalgnkar

REFFERENCE:

1. The last leaf and others stories by AnandkumarRaju (Blackie Books)
2. Great Indian "Twentieth Century writers and their works" by Emerald Publications.
3. Ramachandran, T. N., trans. The Hymns of KaaraikkaalAmmaiyaar. Dharmapuram: International Institute of SaviaSiddhanta Research,
4. English Grammer in use by Raymond Murphy, Cambridge publication 3rd edition.
5. Basic English Grammer by Betty.S.Azar and Stacy A.Hagen Pearson Publication 4th edition.

SEMESTER- I
PAPER CODE - USBK19CT103
INTRODUCTION TO HUMAN ANATOMY & PHYSIOLOGY

Learning objectives:

1. To make the students to learn the fundamental concepts and terminology of anatomy and physiology.
2. To equip the students to learn (emphasis on Musculo-skeletal system) system of the body.
3. To help them to understand the structure and the functions of the body.
4. To make them acquire a strong foundation in anatomy which will facilitate the study of biomechanics

Unit-I

Organization of human body

Anatomy and physiology- different levels of anatomy and physiology-Structural and functional organization- six levels of organization- Characteristics of life-six characteristics-Organ systems of the body, Terminology; anatomical position, supine, prone, directional terminology – body parts and region-body planes. Body cavities-Serous membranes- Cells; structure of cell- Tissues; types of tissues; epithelial tissue, connective tissue, muscular tissue, nervous tissue- membranes.

Unit-II

skeletal system gross anatomy; axial skeleton; skull, hyoid bone, vertebral column and thoracic cage-appendiclular skeleton; pectoral girdle and upper limb, pelvic girdle and lower limb.

Skeletal system; functions of skeletal system-cartilage-bone histology; bone matrix, bone cells, woven and lamellar bone, cancellous and compact bone- bone anatomy; bone shapes, structure of long, flat, short, irregular bones-bone development; intramembranous ossification, endochondral ossification- bone growth; growth in bone length and width, growth at articular cartilage, factors affecting bone growth-bone remodelling- bone repair-effects of aging on skeletal system-

Unit-III

Articulations and movement

Joints, classification of joints; fibrous joints and its types, cartilaginous joints and its types, synovial joints-structure, bursa and tendon and their functions, types of synovial joints- types of movements; gliding movements, angular movements, circular movements and special movements- structure of shoulder joint, elbow joint, hip joint, knee joint, and ankle joint and arches of the foot

Unit-IV

Muscular system (Histology and Physiology)

Functions of muscular, properties system of muscle and types of muscle tissue- structure of skeletal muscle; connective tissue covering of the muscle, nerves and blood vessels, muscle fibers- physiology of skeletal muscle fibers, **Muscular System Gross Anatomy**- Terminology, origin, insertion, agonist, antagonist, synergist, prime mover and fixate- muscle shapes. muscles of head and neck, trunk muscles-muscles moving vertebral column, thoracic muscles, abdominal wall, pelvic floor and perineum-upper limb muscles;

Unit-V

Functional organization of nervous tissue

Functions of nervous system- divisions of nervous system; CNS and PNS- cells of nervous system, neurons and types of neurons- organisation of nervous tissue- electric signals- spinal cord and spinal nerves- structure-reflexes- brain and cranial nerves-development of CNS- structure and functions of brain-integration of nervous system functions.

Reference:

1. *Richard L. Drake et al.* ***Gray's Anatomy for students (3rd Edition),*** *Elsevier, 2015.*
2. *Seeley Stephens Tate.* ***Anatomy & Physiology (8th Edition),*** *McGraw Hill, 2008.*
3. *Valerie C. Scanlon and Tina Sanders.* ***Essentials of anatomy and physiology,*** *F.A. Davis Company, 2015.*
4. *Francesca Gould.* ***Anatomy, Physiology and Pathology (3rd edition),*** *Nelson Thornes, 2012*
5. *Kathryn Lutgens et al.* ***Kinesiology (Scientific Basis of Human Motion)****, Brown and Bench mark, 1992.*
6. *Donald C. Rizzo.* ***Fundamentals of anatomy and physiology****, Delmer, 2001.*
7. *Clare E. Milner.* ***Functional anatomy for sports and exercise****, Routledge, 2008.*
8. *Martini et al.* ***Fundamentals of anatomy and Physiology (9th Edition),*** *2012.*
9. *Robert. S. Behnke.* ***Kinetic anatomy (3rd edition),*** *Human Kinetics, 2006.*
10. *Christy Cael.* ***Functional anatomy,*** *Lippincott.2010.*
11. *Byas Deb Ghosh.* ***Human anatomy for students (2nd edition),*** *Jaypee Brother, 2013*

E- resource

www.alison.com

https://opentextbc.ca/anatomyandphysiology

teachmeanatomy.info

http://anatomyatlases.org/atlasofanatomy/plate01/01skullfront.shtml

http://www.innerbody.com/image/musfov.html

SEMESTER- I
PAPER CODE - USBK19CT104
BASIC BIOMECHANICS

Learning objectives:

1. To enable the students to learn the basic concept of biomechanics.
2. To make the students to understand kinematic and kinetic concept of human movement.
3. To equip the students to learn the principle of aerodynamic and hydrodynamics.
4. To enable the students to acquire the skills of qualitative and quantitative of human movement.

Unit-I

Biomechanics – Sports Biomechanics- branches of biomechanics; statics, dynamics, kinematics, kinetics- Definition - Meaning - Scope - Need and importance of Biomechanics - Historical development of Sports Biomechanics.

Unit II

Equilibrium and human movement - Torque, moment arm, couple, resultant joint torque, levers; types of levers, anatomical and mechanical levers- equations of static equilibrium- equations of dynamic equilibrium, centre of gravity and location of centre of gravity, influence of gravity, location of human body centre of gravity; reaction board, segmental method- stability and balance.

Unit-III

Newton laws; Law of inertia, law of acceleration and law of acceleration- law of gravitation- mechanical behaviour of bodies in contact; friction, static friction, kinetic friction, influence of air resistance- factors affecting projectile trajectory; projection angle, projection speed, relative height of release, optimum projection conditions, analysing projectile motion, equations of constant acceleration.

Unit IV

Kinematic concepts for analyzing human movement - Kinematics; linear and angular kinematics- distance, displacement, speed, velocity and acceleration-forms of motion, linear motion, angular motion and general motion- tools for measuring kinematic quantities- common units of kinematic quantities. Angular kinematics- measuring angles-relative and absolute angle-tools for measuring body angles- instant centre of rotation- angular kinematic relationship-; angular distance and displacement, angular speed and velocity, angular acceleration

Unit-V

Kinetic concepts for analyzing human movement- Inertia, mass, force, net force, centre of gravity, weight, pressure, volume, density, specific weight, torque, impulse- common units of kinetic quantities- mechanical loads on the human body; compression, tension and shear force- mechanical stress' torsion, bending and combined loads- scalar, vector, composition and resolution, graphic solutions of vector problems- trigonometric solutions of vector problems- tools for measuring kinetic quantities.

Reference:

1. *Paul Grimshaw et al.* ***Sports & Exercise Biomechanics,*** *Taylor & Francis Group, (2007).*
2. *Susan J. Hall,* ***Basic Biomechanics****, McGraw Hill Education, 2004.*
3. *Peter McGinnis* ***Biomechanics of Sport and Exercise****, Human Kinetics, 2005.*
4. *Kathryn Lutgens et al.* ***Kinesiology (Scientific Basis of Human Motion)****, Brown and Bench mark, 1992.*
5. *Roger Bartlett.* ***Introduction to Sports Biomechanics Analyzing Human Movement Patterns****, Routledge, 2007.*
6. *Roger Bartlett.* ***Introduction to Sports Biomechanics,*** *Spon Press, 1997*
7. *Knudson Duane V****. Fundamentals of biomechanics****, Springer, 2007.*
8. *Tomothy et al.* ***Applied anatomy and biomechanics in sport (2nd edition)****, Human Kinetics, 2009*
9. *Steven T. McCaw.* ***Biomechanics for dummies,*** *John Wiley, 2014.*
10. *Anthony J. Blazevich.* ***Sports Biomechanics (2nd edition),*** *Bloomsbury, 2012.*

Web links:

1. *http://www.sportsbiomech.com/aboutsportsbiomech.php*
2. *www.isb.com*
3. *www.clinbiomech.com*

SEMESTER- I
PAPER CODE - USBK19CT105
MATHEMATICS IN BIOMECHANICS

Learning objectives:

1. To enable the students to learn the basic mathematics related to biomechanics.
2. To make the students to apply mathematical concepts and principles to perform computations in biomechanics.
3. To enable the students to apply mathematics to solve problem related to biomechanics.
4. To equip the students to acquire a strong mathematic foundation which facilitate in learning MATLAB and simulation and modelling.

Unit-I

Algebra

- Introduction and basic operation
- Solving equations
- Formulas and literal equations
- Applied problems
- Vector algebra basic operations

Unit-II

Matrix

- Introduction and basic operations
- Matrix multiplication
- Algebraic properties of matrix operations
- Invertible matrices
- Special matrices; Triangular, Symmetric, Diagonal
- Elementary matrices for matrices
- System of equations an introduction
- System of linear equations (Gaussian elimination)
- System of linear equation (two and three variables)
- Introduction to determinants
- Eigenvalues and Eigen vectors
- Diagnolisation of Matrices

Unit-III

Trigonometry

- Introduction
- Units of measurements of angle
- Relation between the Length of an arc of a Circle and the Circular measure of its Central angle
- General Angle (Conterminal Angle)
- Angle in the Standard Position
- Trigonometric Function
- Trigonometric Function of any Angle
- Fundamental Identities

- Signs and values of the Trigonometric function

Unit-IV

Calculus (Differentiation)

- Functions of single variables
- Concept of limit, continuity, and differentiability
- Definition of derivative
- Using the definition to compute derivatives
- Techniques of differentiation
- Derivatives of trigonometric function
- Taylor's series
- Functions of two variables, limit, continuity, partial derivatives
- Concept of maxima and minima
- Power series, Fourier series

Calculus (Integration)

- Fundamental and mean value – theorems of integral calculus
- Evaluation of definite and improper integrals
- Integration by parts
- Integration by rational numbers
- Substitution
- Trigonometric substitution
- The area problem and the definite integral

Unit-V

Ordinary differentials equations

- First order equation (linear and non- linear)
- Second order differential equations with variables coefficients
- Variation of parameters methods
- Higher order linear differential equations with constant coefficients

Partial differential equations

- Separations of variables
- Laplace equation
- Solution of one dimensional heat and wave equations

Reference:

1. *Peter H. Selby & Steve Slavin.* ***Practical Algebra: A Self -Teaching Guide****, 2nd Edition*
2. *Jiri Nedoma, Jiri Stehlík, Ivan Hlavacek, Josef Danek, TatjanaDostalova, Petra Preckova.* ***Mathematical and Computational Methods in Biomechanics of Human Skeletal Systems:*** *An Introduction, 2011.*
3. *Jiri Nedoma& Jiri Stehlik.* ***Mathematical and Computational Methods and Algorithms in Biomechanics:*** *Human Skeletal Systems, Wiley, 2011.*
4. *Marvin Bittinger.* ***Basic College Mathematics****, Global Edition, 12th Edition, Pearson, 2014.*

Knudson Duane V. ***Fundamentals of biomechanics****, Springer, 2007*

Semester II

Content

SEMESTER- II-
PAPER CODE - USBK19CT201(B)
HINDI II (B)

PAPER – II: ONE ACTPLAY, SHORT STORY AND TRNSLATION PRACTICE

UNIT - I
Detailed Study : Deep Dan by Dr. Ram Kumar Verma
Non – Detailed Study : MukthiDhan by Premchand

UNIT – II
Detailed Study :DusHazar by Uday Shankar Bhatt
Non – Detailed Study :Tayee by VishambharNathSharmaKaushik

UNIT – III
Detailed Study:YehMeriJanmaBhoomiHai by Hari Krishna"Premi"Mera Vatan by Vishnu Prabhakar

UNIT –IV
Detailed Study: Mai BhiManav Hun by Vishnu Prabhakar
Translation Practice : English to Hindi

UNIT – V
Non - Detailed Study : AadmiKaBaccha by Yashpal
Translation Practice : Hindi to English

Reference Books:

1. One Act Play (Detailed Study): EKANKI RATNAKAR By Dr.Sridhar Singh VaniPrakashan 21- A, DariyaGanj New Delhi – 110 002.

2. Short Story (Non-Detailed Study): KATHA MADHURI By ChittiAnnapoorna Rajeswari Publications 21/3, Motilal Street T.Nagar, Chennai – 600 017

3.Translation Practice : PRAYOJAN MOOLAK HINDI By Prof .Dr. Syed Rahamathullah Dr.ChittiAnnapoorna Pub: PoornimaPrakashan No 4/7B, Begum 3rd Street Royapettah, Chennai – 600 014.

SEMESTER II
PAPER CODE - USBK19CT202
ENGLISH-II DEVELOPING THE LANGUAGE SKILL

OBJECTIVES:

- To Develop the Language Skills through the skill of Listening and Speaking.

LEARNING OUT COMES:

1. Students can participate various speaking activates to improve their skill of speaking such as storytelling, Conversation, dialogue completing, debate etc…
2. These practices make students interesting on speaking English and they can speak without hesitation before peer group and others.
3. When students know about Features and necessaries of Listening and speaking skill they can involve voluntary to participate in activities of speaking and listening.

LISTENING AND SPEAKING

UNIT-I

A) Asking for & giving permission

B) Inviting a person – accepting and / declining

UNIT-II

A) Grammar in usage
B) Translation- idioms & phrases
C) Filling up forms- Bank Chelan's/ Pay in Slips/ Demand Draft, Railway Reservation/ Cancellation

UNIT-III

A) Welcoming a foreign visitor & describing region& country
B) Letter writing
C) Descriptive writing

UNIT-IV

A) Ode to the west wind - P.B. Shelley

B) The Gift of India – Sarojini Noidu.

UNIT-V

A) The Man who could work Miracle - H.G.Wells

B) The Verger - Samerset Maugham

REFFERENCE:

1. The Last leaf & Other stories by AnandkumarFaju(Blackie Books)

2. The Silent Song- K.M.Tharangan(macmillans)

3. English:Grammer in use by Raymond Murphy, Cambridge publication 3rd edition.

4. Basic English Grammer by Betty.S.Azar and Stacy A.Hagen Pearson Publication 4th edition

SEMESTER II
PAPER CODE - USBK19CT203
APPLIED ANATOMY AND PHYSIOLOGY

Learning objectives:

1. To make the students to learn the fundamental concepts and terminology of anatomy and physiology.
2. To equip the students to learn (emphasis on Musculo-skeletal system) system of the body.
3. To help them to understand the structure and the functions of the body.
4. To make them acquire a strong foundation in anatomy which will facilitate the study of biomechanics

UNIT-I

Structure and Articulation of the Spinal Column-Articulations of the Vertebral Bodies- Ligamentous reinforcement-Articulations of the vertebral arches- arches-articulation- atlanto-axial articulation-Atypical contours-Movement of the spine as a whole-Individual movements-Summary of spinal movements-Regional classification of spinal movements factors influencing stability and mobility of spine-muscles operating the spinal column- Location-Characteristics and functions of individual spinal muscles-Muscular analysis of Fundamental movements of the head and spine.

UNIT-II

Spine-Cervical region-Thoracic and lumbar, Sacrum and Coccyx-Structure and articulations of the thorax-Movements of the thorax-Enlargement of the thorax in inhalation- Phases of respiration-Muscles of respiration-Characteristics of individual muscles with primary function in respiration-characteristics of individual muscles with secondary function in Respiration-Muscular analysis of respiration-Common athletic Injuries of the Neck, back, and thorax- Exercise program to stretch and strengthen the muscles of spinal column.

UNIT- III

The shoulder joint-structure-Ligamentous and muscular reinforcements-movements- Muscles of the shoulder joint-location-characteristics and functions-the shoulder girdle structure of acromioclavicular Articulation-structure of sternoclavicular articulation-Muscles of the shoulder girdle-location-characteristics and functions-Joint and muscular analysis of fundamental movements-Movements in frontal plane-movements in Sagittal plane- Movements in horizontal plane-Diagonal movements- -Common athletic Injuries acromioclavicular Sprain-Fracture of the clavicle-Dislocation of the Shoulder-Chronic dislocation of the shoulder-Rotator cuff strains-Exercise program to stretch and strengthen the Shoulder muscles.

UNIT -IV

The elbow joint-structure –movements-the radio-ulnar joints-structure of proximal radio-ulnar joint structure of distal radio-ulnar joint-movements-Muscles of the elbow and radio-ulnar joints-location-characteristics and functions of individual muscles-Muscular analysis of fundamental movements of the forearm-the wrist and hand-structure of the wrist joint.

UNIT-V

Structure and movement of the midcarpal and intercarpal joints-structure of the Carpometacarpal and intermetacarpal joints-movements of the carpometacarpal joints of the thumb-Movements of the Carpometacartpal and intermetacarpal joints of the fingers-structure of the metacarpophalangeal joints-Movements of the metacarpophalangeal joints of the four fingers-movements of the metacarpo phalangeal of the thumb- The inter-phalangeal joints muscles of the wrist and hand location-characteristics and functions of muscles-Muscular analysis of the fundamental movements of the wrist,

fingers, and thumb-Cooperative actions of the wrist and digits-Length of long finger muscles relative to range of motion in wrist and fingers-Examples of using the hand for grasping-Common athletic injuries-Elbow dislocation- Elbow fracture dislocation- sprained or strained wrist-carpal tunnel syndrome-Avulsion fracture- Tennis Elbow - Exercise program to stretch and strengthen the muscles of the elbow and wrist.

Reference:

1. *Paul Grimshaw et.al,* ***Sports & Exercise Biomechanics,*** *Taylor & Francis Group,(2007).*
2. *Susan J.Hall,* ***Basic Biomechanics****, McGraw Hill Education, 2004.*
3. ***Biomechanics of Sport and Exercise****, Peter M.McGinnis, Human Kinetics, 2005.(ISBN-0-7360-5101-5) www.HumanKinetics.com*
4. *Kathryn Lutgens et al.* ***Kinesiology (Scientific Basis of Human Motion)****, Brown andBench mark, 1992.*
5. *Roger Bartlett,* ***Introduction to Sports Biomechanics Analyzing Human MovementPatterns****, Routledge, 2007.*
6. *Knudson, Duane V.* ***Fundamentals of biomechanics****, Springer, 2007.*

SEMESTER II
PAPER CODE -USBK19CT204
INTRODUCTION TO KINESIOLOGY

Learning objectives:

1. To equip the students with foundations of kinesiology.
2. To familiarize the students with muscle origin, insertion and action.
3. To equip the students on gait analysis.
4. To enable the students to learn posture analysis.

Unit-I

Kinesiology: Meaning, history, scope and importance. Anatomical reference position- reference planes- reference axis- sagittal plane movement- frontal plane movement- transverse plane movement. Directional terms – joints movement terminology. **Muscle** – functions - structure- fiber architecture- structural classification of muscle- types of muscle fiber. Behavioural properties of muscle- types of contraction- role of muscles-uni joint- two joint and multi joint muscles. Factors affecting muscular force generation- force velocity relationship, length tension relationship, and short stretch cycle- electromechanical delay- - common muscle injuries. **Bone**: composition and structure of bone tissue - function- types of bone- axial and appendicular skeleton- **Joints**-classification of joints- articular cartilage- articular fibrocartilage- articular connective tissue- - common bone injuries.

Unit-II

Structure of shoulder joint and shoulder girdle- origin, insertion and action of shoulder joint muscles and shoulder girdle muscles- common injuries of shoulder joint and shoulder girdle- exercise programme to stretch and strengthen the shoulder joint muscles. Structure of elbow and wrist joint – origin, insertion and action of elbow and wrist joint muscles- common injuries of elbow and wrist joint- exercise programme to stretch and strengthen the elbow and wrist joint muscles. Structure of spinal column- origin, insertion and action of spinal column muscle- common injuries of spinal column- stretching and strengthening exercise programme to spinal column muscle.

Unit-III

Structure of pelvic girdle and hip joint- origin, insertion and action of pelvic girdle and hip joint- common injuries of hip joint- exercise programme to stretch and strengthen the pelvic girdle and hip joint muscles. Structure of knee and ankle joint- origin, insertion and action of knee and ankle joint muscles- common injuries of knee and ankle – exercise programme to stretch and strengthen the knee and ankle joint muscles.

Unit-IV

Gait - Meaning, phases of gait cycle- stance phase, swing phase. Temporal variables- stance time, single limb and double limb support time- swing time, stride and step time cadence, speed. Spatial variables stride length, step length, and width, degree of toe out. Abnormal gait: structural impairment- increased Q- angle. increased pronation and supination of the foot- Functional impairment- Parkinson's gait, calcaneal gait, gluteus medius gait, gluteus maximus gait, antalgic gait, scissors gait, foot drop gait.

Unit-V

Posture - Definition – static and dynamic posture- poor posture and compensatory posture. Muscle analysis of standing posture- posterior view- pelvic position- tilting and rotation, buttock region-line of neck and shoulder- Anterior view- pelvic tilt, abdominal wall , facial and head alignment- Lateral view – head position. Analysis of standing posture- sagittal plane alignment and analysis-,lordosis and kyphosis. Frontal plane alignment analysis-pes planus,pes cavus, genu valgum, genu varum, scoliosis.

Reference:

1. *Levangie PK, Norkin CC;* ***Joint Structure & Function- A Comprehensive Analysis;*** *Jaypee brothers, New Delhi; 2006.*
2. *Kapandji IA;* ***The Physiology of Joints;*** *Churchill Livingstone, Edinburgh; 1998.*
3. *Magee J D.* ***orthopedic physical assessment****. W.B. saunders ompany.*
4. *Grisaffi D.* ***Posture and core conditioning*** *Published by David Grisaffi and Personal*
5. *Fitness Development in the United States of America.*
6. *Kendall, F. P., Mccreary, E. K., & Provance, P. G. (1993).* ***Muscles Testing and***
7. ***Function*** *(4th Ed). Baltimore: Williams &Wilkins.*
8. *Frank C C.,* ***Lardner assessment and treatment of muscle imbalance****, human kinetics.*

USBK19DSE1
PHYSIOLOGY OF EXERCISE

Learning objectives:

1. To understand basic sports physiology and the physiological factors affecting health, fitness and performance.
2. To familiarise with knowledge of health and skill related components of physical fitness.
3. To explore how the body adapts sports & exercise activities.
4. To identify exercise needs of a person/team and design appropriate exercise interventions.

Unit I

Exercise physiology- definition, need and importance. Energy, work and power - Forms of energy- chemical, kinetic and potential- **ATP -** role, breakdown, re-synthesis of ATP- The principle of coupled reactions; exothermic and endothermic reactions- **ATP resynthesis:** three energy systems – ATP/PC (alactic) – The lactic acid system – The aerobic system - Detail required to include the type of reaction (aerobic or anaerobic), the chemical or food fuel used, the specific site of the reaction, the controlling enzyme, energy yield, specific stages within a system, and the by-products produced

Unit II

Energy continuum

The type of exercise (duration and intensity) – the onset of blood lactate accumulation/OBLA) -The effect of the level of fitness, availability of oxygen and food fuels, and enzyme control on the energy system used - **The recovery process:** returning the body to its pre-exercise state - The oxygen debt / excess post exercise oxygen consumption (EPOC) - The alactacid and lactacid debt components, including the processes that occur and the duration of each component -Replenishment of myoglobin stores and fuel stores, and the removal of carbon dioxide - implications of recovery process to be considered when planning training sessions, for example training intensities, work/relief ratios.

Unit III

Principles of training: Specificity, progression, overloads (FIT), reversibility, moderation, and variance - The physiological implications of a warm up and cool down (for example, reduce the delayed onset of muscular soreness – DOMS) - periodisation of training to include the macro, meso and micro cycle- Awareness of the implications of the principles when applied to the candidate's own training.

Unit IV

Components of fitness

Aerobic capacity - Definition – factors affecting- training, age and sex - Methods of evaluating aerobic capacity (for example, multi-stage fitness test, PWC170 test) – Assessment of the candidate's own VO2 max., matching their result against the aerobic demand of their chosen activity -Types of training- continuous running, repetition running, fartlek and interval training - - Energy system and food/chemical fuels used during aerobic work - Physiological adaptations after aerobic training- **Strength -** Definition- types of strength – Strength endurance – maximum strength – Explosive/elastic strength – Static and dynamic strength -Factors affecting strength-, -Types of training used to develop strength –The repetition, sets and resistance guidelines used to improve each type of strength - Use of multigym, weights, plyometrics and circuit/interval training (work intensity, work duration, relief interval, number of work/relief intervals)- Energy system and food/chemical fuels - physiological adaptations after training, including neural and physiological changes to skeletal muscle- physiological adaptation to flexibility , Body composition, Balance, coordination, Reaction time and speed training.

Unit V

Erogenic aids - An awareness of current methods of performance enhancement - The effects of each aid - Which athletes would benefit from each aid - Nutritional aids: – Carbohydrate loading – Pre/post competition meals – Food/fluid intake during exercise : Use of creatine supplements -Blood doping and recombinant erythropoietin (Rh EPO) -Effects of caffeine - Effects of alcohol - Anabolic steroids (e.g. Nandralone)- Human growth hormone (HGH).

Reference:

1. Clegg C, **Exercise Physiology and Functional Anatomy**, Feltham Press, 1995.
2. McArdle W et al. **Essentials of Exercise Physiology**, Lippincott Williams and Wilkins, 2005.
3. Wilmore J and Costill D, **Physiology of Sport and Exercise,** Human Kinetics, 2004.
4. John Porcarie et al. **Exercise Physiology**. F.A. Davis company, 2015.
5. K. Birch, D. MacLaren. & K. George. **Sports & Exercise Physiology**. 2005

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)
SEMESTER II-
PAPER CODE -USBK19AEC201
ENVIRONMENTAL STUDIES (FOUNDATION COURSE)

Unit I:
Definition, types and elements of environment - Atmosphere, Troposphere, Hydrosphere, Lithosphere, Biosphere - Scope and importance - Need for public awareness.

Unit II:
Natural Resources - water - forest - minerals - Food Energy - land.

Unit III:
Environmental pollution - Definition- causes - effects and control measure of Air pollution – water - soil - Noise - Nuclear.

Unit IV:
Social issues and the environment - Urban problems related to energy - water conservation - Rainwater harvesting - Water shed management - Environmental ethics - Climate change - global warning - acid rain - ozone layer deletion.

Unit V:
Human Population and the environment - Population growth variation among nation - population explosion - Family welfare programme - Environment and human wealth.

REFERENCE BOOKS:

1. C.P.R Environmental Education centre, (2004), “Environmental studies for under graduate students”, Chennai.

2. K.Kumaraswamy, (2004), Environmental studies A text Book for all under graduate courses, Bharathidasan University, Tiruchirapalli.

Semester III
Content

SEMESTER III
PAPER CODE -USBK19CT301
HINDI III (B)
OLD POETRY, HISTORY OF HINDI LITERATURE
[UPTO REETHI KAAL]

Unit I: Old Poetry: Kabir Das – Saakhi

History of Hindi Literature: AadiKaal – KaalvibhajanvaNamkaran Ki Samsaya, Aadi Kaleen Pravrithiya&Repersentative Poets – AmerKhurso&Chandvardaya.

Unit II: Old Poetry: Sur Das – BharamarGeetha

History of Hindi Literature: BhakthiKaal – NirgunBhakthiSathya- Visheshatayen& Representative Poets- Kabir, Jayasee.

Unit III: Old Poetry: Tulsi das – KevatPrasang
History of Hindi Literature: BhakthiKaal – NirgunBhakthiSathya- Visheshatayen& Representative Poets- Tulsi, Surdas.

Unit IV: Old Poetry: MeeraBai – Padh
History of Hindi Literature: ReethiKaal – ReethikaaleenPavirithiya&Visheshatayen.

Unit V: Old Poetry: Rahim – Padh, Tiruvalluvar
History of Hindi Literature: ReethiKaal- ReethBadh, ReethiSidhKavya&ReethiMukthKavya, Representative Poets- Biharilal&Ghananandh .

Reference Book:

1. Old Poetry: Poetry selection – 2001 University Publication, University of Madras
2. History of Hindi Literature:
[a] Hindi Sathiya Yu gaur Pravrithiya by Siva kumarsharma , Ashok Prakashan , NayiSadak, New Delhi -6
[b] Hindi SahithyaKaVivechanatmakIthihasByRAjNAth Sharma, VinodPustakMandir , Agra

SEMESTER III
PAPER CODE -USBK19CT302
ENGLISH- III PROGRESSIVE LANGUAGE SKILL

OBJECTIVES:

1. To help students improve their thinking in a systematic way by familiarizing them with the major basic mental operations and skills through the names associated with them
2. To impart effective reading skills by giving extensive practice in reading comprehension exercises
3. To prepare students to master the art of condensation, and compose an effective letter and a successful résumé
4. To impart effective training in the logical mechanism of writing an essay
5. To acquaint the learners with the mechanics of Power Point Presentations

LISTENING & SPEAKING

UNIT-I

A) Discussion interests & leisure activities
B) Checking in & out of a hotel
C) Complaint & apology

UNIT – II

A) Comprehension
B) Developing hinds

UNIT – III

A) Descriptive Writing
B) Translation – Sentences – English to Tamil

UNIT- IV

A) Nissim Ezekiel: "Poet, Lover, Birdwatcher"
B) A. K. Ramanujan : "Of Mothers, Among Other Things"

UNIT - V

A) Drama - Arthur Miller: Death of a Salesman
B) Short Story - Edgar Allen Poe: The Fall of the House of Usher

REFERENCES:

1. Narasimhaiah, C. D. "An Anthology of Commonwealth Poetry" India: Macmillan, 1990.
2. Ramanan, Mohan (Ed) Four Centuries of American Poetry: An Anthology.
3. Chennai: Macmillan.An Anthology of Poems in English. Chennai: Longman

SEMESTER III
PAPER CODE -USBK19CT303
Applied Biomechanics

Learning Objectives:

1. To familiarize the students with basic electronic devices.
2. To introduce the students the basic properties of high speed cameras and calibrations.
3. To enhance their ability to asses and analyse human locomotion.
4. To provide students with a strong mechanical foundation to acquire the professional competence, knowledge and skills.
5. To study electromyography and force platform used for kinetic quantity measurement
6. To provide knowledge about advanced equipment and their significant practical applications in biomechanics.

Unit-I

Spots and exercise biomechanist- role and functions- research, scientific support services, education, consultancy- Analysis services; qualitative analysis, quantitative analysis- Procedures; ethics, pre analysis preparation, detailed reporting.

Unit-II

Motion analysis using video- equipment considerations- video cameras, picture quality, frame rate, shutter speed, manual iris and low light sensitivity, gen lock capability, recording medium, recording and storage device, specification of computer, capture software, video playback system, coordinate digitizer- data collection procedures- two dimensional and three dimensional video recording- reporting a video motion analysis study.

Unit-III

Motion analysis using online systems - Equipment considerations- data collection procedures- processing, analysing and presenting motion analysis data- reporting a motion analysis study. **Force and pressure measurement -** Force platform- construction and operation- technical specification- calibration- applications- Pressure distribution measurements- reporting a force or pressure analysis study.

Unit-V

Surface electromyography- equipment considerations- data collection procedures; electrode configuration, location and orientation, skin preparation, cross talk- sampling- processing, analysing and presenting EMG- reporting an EMG study.

Unit-V

Isokinetic dynamometry-Applications of isokinetic dynamometry- mechanical basis of isokinetic dynamometry measurements- isokinetic equipment considerations- isokinetic experimental and data collection procedures- processing, analysing and presenting isokinetic data- reporting an isokinetic study.

Reference:

1. *Paul Grimshaw et al.* ***Sports & Exercise Biomechanics,*** *Taylor & Francis Group, 2007.*
2. *Susan J. Hall.* ***Basic Biomechanics****, McGraw Hill Education, 2004.*
3. *Peter McGinnis.* ***Biomechanics of Sport and Exercise****, Human Kinetics, 2005.*
4. *Kathryn Lutgens et al.* ***Kinesiology (Scientific Basis of Human Motion)****, Brown and Bench mark, 1992.*

5. *Roger Bartlett*. ***Introduction to Sports Biomechanics Analyzing Human Movement Patterns***, *Routledge, 2007.*
6. *Knudson, Duane V.* ***Fundamentals of biomechanics***, *Springer, 2007.*
7. *Vladimir, Medved.* ***Measurement of human locomotion,*** *CRC Press, 2001*
8. *John Mc Lester, & Peter St. Pierre,* ***Applied biomechanics,*** *Thompson, 2008.*
9. *Carl J. Payton & Roger M. Bartlett,* ***Biomechanical evaluation of movement in sports and exercise***, *Routledge, 2008.*
10. *Roger Bartlett.* ***Introduction to Sports Biomechanics,*** *Spon Press, 1997*

SEMESTER III
PAPER CODE -USBK19CT304
MOTOR LEARNING

Learning objectives:

1. To equip the students to understand the basic of skills acquisitions of sports performance.
2. To make them understand the basic of skills and selected sports movement pattern
3. To enable them to understand the link between motor skills, ability, learning and performance
4. To familiarize the students with various theories improving and affecting the sports skills performance.

Unit I

Motor skill development - motor skills- fundamental motor skills- sports specific sills-**Theories related to the learning of motor skills -** Description of the stimulus-response (S/R) bond and application of related theories - Associationist theories: operant conditioning – shaping behaviour, the use of reinforcement, link to trial and error, linking of the S/R bond - Cognitive theory: work of the Gestaltists – wholeness and insight learning - Observational learning: the work of Bandura – the four elements (attention, retention, motor reproduction, motivation).

Unit II

Characteristics of a skillful performance - learned - Efficient - Goal directed - Technical model - Fluent -Aesthetically pleasing- **Motor and perceptual skills- Classification of skills -** Gross and fine- Open and closed - Discrete, serial and continuous- External and internally paced - Simple or complex - High and low organization- **Definition and characteristics of abilities -** characteristics: innate, underlying and enduring traits - gross motor and psychomotor abilities.

Unit III

Reinforcement : Definition and examples of positive reinforcement, negative reinforcement and punishment, as methods of strengthening or weakening the S/R bond - Ways of strengthening the S/R bond through repetition, satisfaction/annoyance, and through physical and mental preparedness- **Theories related to motor and executive programmes -** Definition as a generalised series of movements: creation of programmes in the long term memory; awareness of the major programmes/sub-routines of a range of motor skills - Open loop control: retrieval of programmes by making one decision, used in quick movements where there is no time for feedback, with examples - Closed loop control: detection and correction of movements during the performance through the use of feedback, with examples - Schema theory: a way of modifying the motor programme by the use of schema or rules of information- Schmidt's sources of information as recall and recognition schema - Four rules of schema (knowledge of initial conditions, knowledge of response specifications, sensory consequences, movement outcomes) - Examples of the application of the schema theory in teaching and coaching.

Unit IV

Theory of information processing in the performance of motor skills

Basic models of information processing: display, sensory information, sense organs, perception, decision making, effector mechanism response and feedback- **Memory:** basic model of the memory process: selective attention, short term sensory store, short term memory, long term memory .

Reaction time : definitions of reaction time, movement time and response time - importance of a short reaction time -factors affecting reaction time, including psychological refractory period, in a range of sporting activities **- Feedback -** importance and functions of feedback - types of feedback to include: intrinsic and extrinsic, terminal and concurrent, positive and negative, knowledge of performance,

knowledge of results- use of practical examples to show how feedback can be used effectively to improve performance.

Unit V

Phases of learning movement skills - Cognitive, associative, autonomous phases of learning - characteristics of each phase and their practical implications- **Transfer of learning -** definition of transfer of learning – types – Positive transfer – Negative transfer – Proactive and retroactive – Bilateral transfer- **Motivation -** definition of motivation - extrinsic and intrinsic motivation - -effect of extrinsic rewards on intrinsic motivation- **Theories related to arousal levels -** drive theory - inverted U theory - drive reduction theory

Reference:

1. *Honeybourne J.* ***Acquiring Skill in Sport,*** *Routledge, 2006.*
2. *McMorris T.* ***Acquisition and Performance of Sports Skills,*** *Wiley, 2004.*
3. *Magill R.* ***Motor Learning, Concepts and Application,*** *McGraw Hill, 2004.*
4. *Sharp B.* ***Acquiring Skill in Sport****, Sports Dynamics, 1992.*
5. *Williams H and Hodges N.* ***Skill Acquisition in Sport****, Routledge, 2004.*
6. *Paul E. Robinson.* ***Foundations of Scientific Coaching.*** *Routledge. 2010.*
7. *Don Gordon.* ***Coaching Science****. Learning Matters. 2009.*

SEMESTER III
PAPER CODE -USBK19CT305
KINANTHROPOMETRY

Learning objectives:

Unit-I

Anthropometry – history, need, scope and importance- preliminary considerations- subject- data collection- anthropometry equipment. Anthropometry profile- human body composition- densiometry; under water weighing, dual energy X ray absorptiometry, skin fold method, bioelectrical impedance. Anthropometric model - adipose tissue, muscle, bone.

Unit-II

Anthropometric land marks – definitions, vertex-supra sternale, epigastrale, thelion, acromiale, radiale, stlion, dactylion, iliocristale, iliospinale, trochanterion, tibial mediale and laterale. Heath carter somatotype method - anthropometric and photoscopic somatotype methods- endomorphy-mesomorphy- ectomorphy-Anthropometric landmarks- reference land marks- marked land marks-basic measurements. Skinfold measurement – locations of skinfold sites - cheek-chin-pectoral, axilla, abdomen iliac crest, supraspinale, subscapular, triceps, biceps, patella-mid thigh, proximal calf, medial calf. Waist hip ratio- body mass index- fat free index.

Unit-III

Anthropometric measurement – length and breadth measurement – technique and procedures- **Length** - Acromiale-Radiale length (arm), Radiale-Stylion length (forearm), Mid-stylion-Dactylion length (hand), Iliospinale Height (obtained height plus box height), Trochanterion Height (obtained height plus box height), Trochanterion-Tibiale Laterale length (thigh), Tibiale Laterale Height (leg), Tibiale Mediale-Sphyrion Tibiale (tibia length), Foot length.

Unit - IV

Anthropometric measurement **Breadths -** Biacromial breadth, Biiliocristal breadth, Transverse Chest breadth, Anterior-Posterior Chest Depth, Biepicondylar Humerus breadth, Wrist breadth, Hand breadth, Biepicondylar Femur breadth, Ankle breadth, and Foot breadth.

Unit-V

Anthropometric measurement - **Girth**- Head Girth, Neck Girth, Arm Girth (relaxed), Arm Girth (flexed and tensed), Forearm Girth, Wrist Girth, Chest Girth, Waist Girth, Omphalion Girth (abdominal), Gluteal Girth (hip), Thigh Girth (upper), Mid-Thigh Girth, Calf Girth, and Ankle Girth. Heath carter somato typing, testing and classification procedure - report generation technique.

Reference:

1. *Bernhard Reichert. (2015).* ***Palpation technique*** *(2nd Edition), Thieme Publishers, Delhi.*
2. *Roger Eston,* ***Kinanthropometry and Exercise Physiology Laboratory Manual: Tests, Procedures and Data:*** *Volume One: Anthropometry (Volume 1) 3rd Edition.*
3. *ISAK Kinanthropometry manual*

Web link:
https://www.isak.global/WhatIsIsak/#GoToKina

Semester - IV
Content

SEMESTER IV
PAPER CODE - USBK19CT401 (B)
HINDI IV (b)

PAPER IV: MODERN POETRY, HISTORY OF HINDI LITERATURE (ADHUNIK KAAL ONLY)

UNIT- I

Modern Poetry: ApnaSansar by MithiliSharanGupt, Chinta by Jeya Shankar Prasad. History of Hindi Literature: BharatenduYag-VisheshatayenArunPravithiyan Representation Poet – Bharatendu

UNIT –II

Modern Poetry: MurjhayaHuaPhool by MahadeviVerma. History of Hindi Literature: DwivediYug-VisheshatayenArunPravithiyan, Representation Poet - Dwivedi Yug.

UNIT –III

Modern Poetry: SnehShapath by Bhavani Prasad Mishra. History of Hindi Literature: Chayaavad-VisheshatayenArunPravithiyan, Representation PoetJeya Shankar Prasad, SuryakanthTripathiNirala, SumithraNandhanPanth, MahadeviVarma.

UNIT – IV

Modern Poetry: Nimna Madhya Vargh by PrabhaharMacheve. History of Hindi Literature: NayiKavitha - VisheshatayenArunPravithiyan, Representation Poet – PrabhakarMachve&BharathBhooshanAharwal.

UNIT – V

Modern poetry: Anewaalone se eksavaal by BharathBhooshanAharwal.
History Hindi Literature: Upayans, KahaniArunNayak(UdbhauaurVikkas)

REFERENCE BOOKS:

1. Modern Poetry: Poetry Selection-2001 University Publications University of Madras.
2. History of Literature: Hindi SathyayugaurPravirthiyan by Siva Kumar Sharma Ashok PrakashanNayiSadik, New Dhelhi – 6
3. Hindi SahithyaKaVivechanatmakIthihasBy Raj Nath Sharma VinodPustakMandir, Agra.

SEMESTER IV
PAPER CODE -USBK19CT402
ENGLISH IV - CARREER LISTENING AND SPEAKING

OBJECTIVES

1. To impart advanced training in standard pronunciation, word stress and intonation
2. To train students in the correct use of English in a formal way
3. To improve the learners' vocabulary by familiarizing them with the ways of word formation
4. To develop communication skills by providing theoretical knowledge of the mechanism of effective communication

UNIT-I

A) Group discussion – predicting and describing future possibilities
1. Globalization
2. Feminism
3. Current event

B) Interview- focus in personality development and body language

WRITING

UNIT-II

A) Report writing
B) Note making

UNIT-III

A) How to write an e-mail
B) Descriptive writing – writing with purpose

UNIT-IV

B) Song on May Morning - John Milton
C) Leave this Chanting - Rabindranath Tagore

UNIT-V

A) Tintern Abbey - William Wordsworth
B) She Stoops to Conquer - Oliver Goldsmith

REFERENCE:

1. A.K.RamanBhushanam "Human values through English prose" (Blackie)
2. English Grammar in use by Raymond Murphy, Cambridge publication 3rd edition.
3. Basic English Grammar by Betty.S.Azar and Stacy A.Hagen Pearson Publication 4th edition.

SEMESTER IV
PAPER CODE -USBK19CT403
INTRODUCTION TO HUMAN GAIT & POSTURE

Learning objectives:

1. Know the basic parameters of human gait
2. Characterize normal human gait
3. Know the methods of gait analysis and assessment
4. Sketch the normal ranges of motion of the various joints during a gait cycle.
5. Describe various types of pathological gait.
6. Identify causes and compensation mechanisms for pathological gait.
7. Describe measurements used in analysis of human movement.
8. Review journal papers in this field.

Unit-I

Fundamentals of gait - Meaning of gait, gait cycle divisions, Rancho Los Amigos gait terminology. **Gait parameters -** Temporal variables - stance time, single limb and double support time, swing time, stride and step time, cadence, speed. Spatial variables- stride length, step length and width, degree of toe out. Joint motion – Sagittal, frontal and Transverse plane joint angles. **Functional sub divisions of gait cycle -** Passenger unit, locomotor unit. Locomotor functions – Propulsion, stance stability, shock absorption, energy conservation.

Unit-II

Normal gait – Ankle foot complex – motion, muscle control and functional interpretation. Knee - motion, muscle control and functional interpretation. Hip - motion, muscle control and functional interpretation. Head, trunk, and pelvis - motion, muscle control and functional interpretation. Arm - motion, muscle control and functional interpretation. Total limb function- initial contact, loading response, mid stance, terminal stance, pre-swing, initial swing, mid swing, terminal swing.

Unit-III

Pathological gait - Pathological mechanisms – deformity, muscle weakness, sensory loss, pain, spasticity. Abnormal gait - Structural impairment - leg length discrepancy, increased Q-angle, increased tibial torsion, increased pronation and supination of the foot. Functional impairment - Parkinson's gait, calcaneal gait, gluteus medius gait, gluteus maximus gait, antalgic gait, arthrogenic gait, ataxic gait, hemiplegic gait, scissors gait, foot drop gait, stiff knee gait, psoatic limp gait. Walking aids, types, prescription and indication.

Unit-IV

Posture – definition – static and dynamic posture – importance and benefits of good posture - causes of poor posture poor posture, compensatory posture. Vertebral alignment – development of postural curves - Standing posture – lateral view, anterior view, and posterior view. Sitting posture, good lying/sleeping posture. Postural synergies – fixed support synergies – ankle synergy, hip synergy, stepping synergy – change in support strategies – head stabilizing strategies.

Unit –V

Analysis of Standing Posture – Plumb line - Sagittal plane alignment and analysis - Deviations from Optimal Alignment in the Sagittal plane - Claw toes, Hammer toes, Flexed knee posture, Hyper extended knee posture (Genu Recurvatum), Excessive anterior pelvic tilt, Lordosis and Kyphosis, Forward Head Posture - Frontal plane optimal alignment and analysis - Deviations from optimal alignment in the frontal plane - Pes Planus (Flat Foot), Pes Cavus, Genu valgum (knock knee), Genu varum (bowleg), Squinting or cross-eyed patella, Grasshopper-eyes patella, patella alta, Scoliosis.

Reference:

1. *NihatOzkay&Margareta Nordin.* ***Fundamentals of Biomechanics: Equilibrium, Motion and Deformation,*** *Springer International Publisher, 2017.*
2. *Margareta Nordin& Victor Hirsch Frankel.* ***Basic Biomechanics of the Musculoskeletal System,*** *Lippincott Williams & Wilkins, 2001.*
3. *Arthur E. Chapman.* ***Biomechanical Analysis of Fundamental Human Movement****. Human Kinetics, 2008.*
4. *David A. winter.* ***Biomechanics and Motor Control of Human Movement (4th edition).*** *john Wiley & sons, 2009*
5. *Jacquelin Perry.* ***Gait Analysis; Normal and Pathological functions*** *(2nd edition). SLACK incorporated, 2010.*
6. *Michael Whittle.* ***Gait Analysis; An Introduction,*** *Butterworth-Heinemann, 2007.*
7. *Grisaffi D.* ***Posture and core conditioning*** *Published by David Grisaffi and Personal Fitness Development in the United States of America.*
8. *Kendall, F. P., Mccreary, E. K., & Provance, P. G. (1993).* ***Muscles Testing and Function*** *(4th Ed). Baltimore: Williams &Wilkins.*

SEMESTER IV
PAPER CODE -USBK19CT404
Biomechanics of Track Events

Learning objectives:

1. To equip the students to learn fundamental skills and techniques of track events.
2. To familiarize with mechanical principles involved in skills and technique track events.
3. To understand and conduct the qualitative and quantitative analysis in track events.
4. To acquire the skills of reviewing the current research studies.

Unit-I

Track events (Sprint - 100m)

History, legends, world record, skills, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. Types of Crouch Start – Bunch start-Medium start-Elongated start - Running – Stride length - Take-off distance - Flight distance - Landing Distance - Stride Frequency - Action of leg - Supporting phase-Driving phase - Recovery phase - Action of arms -Action of trunk - Finish - Types of Finish - Start - Running – Finish- Spikes – Types of spikes - Starting block

Unit-II (Sprint 200m & 400m)

History, legends, world record, skills, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. Types of Crouch Start – Bunch start-Medium start-Elongated start - Running – Stride length - Take-off distance - Flight distance - Landing Distance - Stride Frequency - Action of leg - Supporting phase-Driving phase - Recovery phase - Action of arms -Action of trunk - Finish - Types of Finish - Start - Running – Finish- Spikes – Types of spikes - Starting block

Unit-III - Hurdles (100m, 110m and)

History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. Hurdles – High hurdles-Approach-take-off-Flight-Landing- Running between hurdles-Intermediate hurdles-Low hurdles

Unit – IV Hurdles 400m

History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. Hurdles – High hurdles-Approach-take-off-Flight-Landing- Running between hurdles-Intermediate hurdles-Low hurdles

Unit-V

Middle and Long Distance and Relays (800m, 1500m, 5000m, 10000m , and 4x100m and 4x400m)

History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance

Reference:

1. *Hay, J. (1993**). The Biomechanics of Sports Techniques,** Prentice-Hall,Inc., Englewood Cliffs,New Jersey..*
2. *Knudson, Duane V**. Fundamentals of biomechanics**, Springer, 2007*
3. Carr, Gerry (1997).**Mechanics of sport**, Champaign, IL: Human Kinetics.

4. Carl J. Payton and Roger M. Bartlett, **Biomechanical evaluation of Movement in sport and exercise**, The British Association of Sport and Exercise Sciences Guidelines, Routledge, 2008.
5. Carr, Gerry. ***Sports Mechanics for Coaches***, New York: Human Kinetics. 2004.
6. *John W. Bunn,* ***Scientific Principles of Coaching***.
7. *Broer,* ***Efficient Movement***
8. *Roger Bartlett,* ***Introduction to Sports Biomechanics Analyzing Human Movement Patterns****,Routledge, 2007.*

SEMESTER IV
PAPER CODE -USBK19CT405
BIOMECHANICS OF FIELD EVENTS

Learning objectives:

5. To equip the students to learn fundamental skills and techniques of field events.
6. To familiarize with mechanical principles involved in skills and technique field events.
7. To understand and conduct the qualitative and quantitative analysis in field events.
8. To acquire the skills of reviewing the current research studies.

Unit-I

Throws (Shot-put)

History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. **Shot-put -** Shot-put - O'Brien style-Initial stance-Glide-Delivery-Reverse - Rotation style- distance prior to release-Physique-Position-Distance after release-Height of release-Speed of release-Forces exerted - Angle of release –Air resistance - Advantages and Disadvantages of O'Brien and Rotation techniques.

Unit - II

Hammer - History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. Hammer Throw – Preliminary swing-The first turn-The second turn-The third turn-The delivery-Air resistance Speed of release-Angle of release-Height of release. **Discus -** Discus Throw – Initial stance – Preliminary swings-Transition-Turn-Delivery-reverse-Aerodynamic factors.

Unit - III

Javelin- History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. Javelin Throw - Types of Grip –Carry- Run – Transition, Throw, and Recovery-Speed, Angle, Height of release-Aerodynamic factors influencing flight- Advantages and Disadvantages of different Grips-Aerodynamic Javelin.

Unit-IV

Jumps (Long jump &Triple jump)

History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. **Long Jump**-Hang style - Hitch Kick style - Approach run – Take-off -Flight in the Air - Landing – Take-off distance-Flight distance-Speed, angle, height of take off-air resistance-Advantages and Disadvantages of different styles. **Triple Jump -** Hop - Step and Jump- Approach Run – Take-off - Flight in the Air – Landing.

Unit- V

High jump- History, legends, world record, technique, application of biomechanical principles, analysis of related research reviews, and analysis of current world and Olympic record holder's performance. straddle- fosbury flop- run up- take off- bar clearance- landing- height of take –off- physique – body composition at take off- flight height- vertical velocity at take off- clearance height- body position at peak- **pole vault-** carry- take off- clearance- landing- take off- swing height- clearance height- kinetic energy at take off- strain energy at take off- work done during ascent- mechanical energy losses - kinetic energy- usage and advantage of fiberglass- analysis of recent world pole vaulters.

Reference:

1. ***The Sports Book*** *(3rd Edition). D.K publishers.*
2. *Will Freeman.* ***Track & Field Coaching Essentials.*** *Human Kinetics. 2014.*
3. *Joseph. L. Rogers.* ***USA Track & Field Coaching manual.*** *Human Kinetics.2000.*
4. *Ed House Wright.* ***Winning track & field for girls.*** *Mountain Lion. 2010.*
5. *Tom Ecker.* ***Basic Track & Field Biomechanics (4th edition).*** *2015*
6. ***The Olympic and World Records book****, Imagine Publishing, 2016.*

James G. Hay, ***Biomechanics of Sports Technique,*** *Prentice-Hall, 1993.*

Semester - V
Content

SEMESTER V
PAPER CODE -USBK19CT 501
BIOMECHANICS SPORTS AND GAMES - I

Learning Objectives:

1. To enable the students to learn the basic skills and techniques of sports and games.
2. To learn and apply the mechanical principle on the technique of sports skill.
3. To understand the technique of qualitative and quantitative analysis.
4. To equip the students to carryout 3D analysis on sports skills and generate a valid report.

Unit-I

Hockey and football

History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - **Hockey**- Qualitative and Quantitative analysis –Dribbling- Pushing – Scooping-slap shot-Drag push and Drag flick- Hockey Sticks- Types of sticks- Playing surfaces - **Football**- Qualitative and Quantitative analysis - Kicking –instep kick-inside of the foot kick- passing-inside of the foot pass- Receiving -Throw in- Dribbling – Heading-Volley.

Unit-II

Cricket

History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - Cricket- Qualitative and Quantitative analysis - batting: forward defense, backward defense, drives, cut, pull, and sweep - Bowling: Pace bowling, types and technique; medium pace, Spin bowling: types, leg spin, off spin and their improvisation – Fielding: catching, ground fielding, close and deep fielding- Wicket keeping.

Unit-III

Boxing and fencing

History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - **Boxing**-Qualitative and Quantitative analysis- Foot work- a) Stand-up base b) Cross footwork c) Circling; Punches - a) Jab b) Cross c) Hook d) Uppercut; Blocks, parries and evasive techniques - a) Catch b) Side parry c) High front cover d) Low front cover e) Hook / side cover f) Shoulder roll g) Slip h) Duck i) Bob and weave - **Fencing**- Qualitative and Quantitative analysis- Lunge (attacking) - flunge (saber fencing) - Passatta sotto (movement with a twist) - Parry (defensive move) - Counter attack (attack) - Riposte (counter attack) - Remise (series of attack) - Beat (attack) – Feint.

Unit-IV

Gymnastics

History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - **Men -** Qualitative and Quantitative analysis -Floor exercise, parallel bar, horizontal bar, vaulting table. pommel horse and Roman rings – **Women -** Qualitative and Quantitative analysis - Uneven bars, Floor exercise, Balance beam and Vaulting table

Unit-V

Golf and cycling

History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - **Golf** - Qualitative and Quantitative analysis - carry-speed of release-Direction of Release-Height of release-Air resistance- The run-Putting-Techniques-Grip-Stance-The swing-back swing-Down swing-Impact-Follow through - **Cycling**- analysis of velodrome and outdoor cycling events.

Reference:

1. *Hay, J. (1993).* ***The Biomechanics of Sports Techniques,*** *Benjamin Cummings.*
2. Martin Toms. **Routledge International book of gold science**, Taylor & Francis, 2018.
3. *Emeric Arius.* ***Biomechanics of human motion (2nd edition).*** *CRC Press. 2017.*
4. *Elaine Cheris.* ***Fencing steps to success****. Human Kinetics. 2002.*
5. *Gabi Amzaleg.* ***Boxing technique.*** *Create Space Independent Publishers. 2018.*
6. *Gary Blower.* ***Boxing technique tactics skills****. Crowood. 2012.*
7. *Rodrigo R. Bini & Felipe P. Carpes.* ***Biomechanics of cycling.*** *Springer.2014.*
8. *Robertson .E Gordon D et al.* ***Research Methods in Biomechanics.*** *New York: Human Kinetics. 2004.*

SEMESTER V
PAPER CODE -USBK19CT 502
BIOMECHANICS SPORTS AND GAMES – II

Learning objectives:

1. To provide the acquaintance about the history of games, legends, skills and technique.
2. To recognize the mechanical principles involved in various skills of a game.
3. To acquire the skills with conducting research and evaluate the data on particular skill and technique in the relevant game.
4. To enable the students to learn to prepare standard biomechanical analysis report.

Unit-I
Basketball and Handball
History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - **Basketball**- Qualitative and Quantitative analysis- Dribbling, types of passes - Chest pass - Overhead pass - Bounce pass - Baseball pass, Types of shooting-Set shot-Jump Shot-Layup shot. **Handball** - Dribbling-Passing-types of passing- Overhead pass- Types of shot – Jump shot - Playing surfaces-Types

Unit-II
Volleyball and Kabaddi
History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews- **Volleyball**- Qualitative and Quantitative analysis- Serve, Types, Forearm pass Setting, Attack, Block, Floor defense - **Kabaddi**- offensive and defensive skills- match analysis.

Unit-III
Tennis and Table tennis
History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews - **Tennis**- Qualitative and Quantitative analysis- Service, types of service-Rally – fore hand rally-Back hand rally-offensive and defensive techniques – Tennis Rackets –Types-Playing surfaces- **Table tennis**- Qualitative and Quantitative analysis-Grip, Stance, Footwork, Forehand drive, Backhand drive, Backhand push, Forehand push, Serve, Return of serve, Basic strokes-Drive, Push, Block, Smash; Advance stroke – Loop, Chop, Flip and Lob

Unit-IV
Badminton and Squash
History of the game, legends, skills and technique, application of biomechanical principles, analysis of related research reviews – **Badminton** - Qualitative and Quantitative analysis - grip, foot work, service and types; short, flick, high , drive - clears, drop shot, smash, drive, net play - **Squash**- Qualitative and Quantitative analysis, Racket Grip, Squash Swing (Forehand swing and back hand swing)

Unit-V
Swimming
History, legends, skills and technique, application of biomechanical principles, analysis of related research reviews-Swimming - Qualitative and Quantitative analysis – Free style, Front crawl, Butterfly, Breast stroke, and Back crawl.

Reference:

1. Hay, J. (1993). **The Biomechanics of Sports Techniques,** Benjamin Cummings.
2. Barth/Dietz. **Learning swimming,** Meyer & Meyer, 2002.
3. Cathy McGee, **Coaching Basketball-Technical and Tactical skills**, Human Kinetics, 2004.
4. Karen Palacios Jansen. **Golf fitness.** Taylor trade publishers, 2011.
5. Janusz Czerwinski & Frantisek Taborsky. **Basic handball**. European Handball Federation. 1997.
6. Renstrom. **Hand book of Sports Medicine and Science Tennis.** Blackwell science. 2002.
7. Philip Yarrow & Aiden Harrison. **Squash steps to success (2nd edition).** Human Kinetics. 2010.
8. Richard McAfee. **Table tennis-Steps to success.** Human Kinetics. 2009.
9. John Edwards. **Badminton**. Crow wood. 2014.
10. Brahms. **Badminton.** Meyer & Meyer. 2009.
11. Barth/Nadman. **Learning field hockey.** Meyer & Meyer. 2005.
12. Robertson .E Gordon D et al. **Research Methods in Biomechanics.** New York: Human Kinetics 2004

SEMESTER- V
PAPER CODE - USBK19CT503
FUNDAMENTAL OF RESEARCH AND STATISTICS IN BIOMECHANICS AND KINESIOLOGY

Leaning objectives:

1. To equip students with a basic concepts of research.
2. To enable the students to learn the sampling techniques.
3. To enable students to choose the most appropriate research method / design to address a particular research question.
4. To equip the students to prepare a research proposal for grants.
5. To enable the students to prepare a research thesis/report/article for a journal.
6. To enable the students to learn the basic concepts of statistics.
7. To acquire the skills of parametric and non-parametric statistical methods and apply the appropriate technique for a research data analysis.

UNIT-I

Fundamentals of Research- Meaning and Definition of Research, Scope of Research in sports sciences, Qualities and Characteristics of Scientific Research - Criteria for locating and selecting a research problem - Delimitations and Limitations of a problem- Hypothesis and its formulation - Sampling- Sampling and Population, Sampling Techniques - Characteristics of a good sample - Sampling errors- Types of Research based on purpose – Basic research, Applied research, Action research – Types of research based on methods – Descriptive research, Experimental research.

UNIT–II

Variables - Independent, Dependant, Extraneous and Intervening, Experimental, Control variables. Research design – Types of Research design – Single group design, Repeated measures design, Static group comparison, Random groups design, Post-test only random group design, Related groups design, Rotation group design, Quasi experimental design and Factorial design - Methods of Data Gathering and Sampling – Survey, Questionnaire, Interview, Case study, Observation, Opinionnaire.

UNIT-III

Chapterization of Thesis / Dissertation - Front Materials, Body of thesis, Back materials, Method of Writing research proposal, Thesis / Dissertation - Method of writing abstract, full paper for presenting in a conference, publishing in journals, Mechanics of writing Research Report, APA referencing style, Plagiarism.

UNIT- IV

Introduction to statistics types, classification and basic concepts of statistics – Levels of measurement - Measures of central tendency – Mean Median and Mode – Measures of variability - Range, Mean deviation Quartile Deviation and standard deviation. Introduction to Normal distribution – Normal curve – Characteristics of Normal Curve – Properties of Normal curve - Testing of Hypothesis: Hypothesis – Type I & II error- Parametric and Non parametric statistics.

UNIT- V

Test of significance of a single Mean – Difference between two means for small and large sample tests – paired t – test for difference of mean. One way and two way analysis of variance – Post hoc tests - Scheffe's, Newman, Duncan, Tukey – Analysis of covariance. Pearson product moment correlation – Rank order correlation – Bi-serial Correlation-bhi coefficient - Detrahoric correlation-Partial and Multiple correlation – Chi square – contingency coefficient - SPSS Package – Introduction and application – creating, saving and opening a data file – Data entry and analysis of descriptive statistics, dependent and independent t-test, one way and two way ANOVA, ANCOVA, Repeated Measure and correlation – Naming the variables – editing the output file.

Reference:

1. *Clarke, David H. Clarke, Harrison H.* ***Research Process in Physical Education****, New Jersey: Prentice Hall Inc. 1984.*
2. *Jerry R. Thomas, Jack K. Nelson and Stephen J. Silverman.,* ***Research Methods in Physical Activity*** *(5th Ed), New York: Human Kinetics. 2005.*
3. *Chris Gratton and Ian Jones****., Research Methods for Sports Studies,*** *London: Routledge, Taylor & Francis Group, 2004.*
4. *John W. Best and James V. Kahn.,* ***Research in Education*** *(9th Ed.,), New Delhi: Prentice Hall of India Pvt. 2006.*
5. *Robertson .E Gordon D et al.* ***Research Methods in Biomechanics.*** *New York: Human Kinetics. 2004.*
6. *Darren George & Paul Mallery.* ***IBM SPSS Statistics 23 step by step****. Routledge. 2016.*
7. *Kathleen et al.* ***An introduction to statistical analysis in research.*** *Wiley. 2018.*

SEMESTER- V
PAPER CODE - USBK19CT504
SOFTWARE APPLICATIONS IN BIOMECHANICS AND KINESIOLOGY

UNIT – I

Computer – Meaning and definition – Components of computer – input and output devices – Storage Devices – Software and Hardware – Languages – LAN and WAN - Types of Computers – Microcomputer – Mini Computers, Mainframe Computers and Super Computers – Binary number system – Bits and Bytes – Hardware Input – Output – The arithmetic / Logic Unit – Control Unit. Computer Memory – Auxiliary Storage. The Punched Card – Magnetic & Tape – Disk oriented data entry system; Out-put devices, Application software used in Physical Education and Sports Biomechanics and Kinesiology.

UNIT-II

Introduction to MS word – Creating, saving and opening a document - Formatting and Editing features – Drawing table – page setup – paragraph alignment – spelling and grammar check - printing option – inserting page number, graph, footnote and end notes – mail merge - hyperlink.

UNIT-III

Introduction to MS Excel - Creating, saving and opening a spreadsheet - Formatting and Editing features – creating formulas– adjusting column width and row height – understanding charts – **Introduction to MS PowerPoint** - Creating, saving and opening a ppt file - Formatting and Editing features – slide show – design – inserting slide number, picture, graph and table – hyperlink.

Unit-IV

Meaning and Definition of Internet and Multimedia – Application of Internet and multimedia in sports Biomechanics and Kinesiology – Computer application in sports Biomechanics and Kinesiology. Background online designing - Scanning – Animation – slide sounds**,** Impact and non-impact printers-mobile devices to asses physiological parameters, Internet explorer – Different types of connections – Modem types - Network types, types of internet communications - e.mail - Text chatting - video chatting and calling.

Unit-V:

Role of computer in Sports Biomechanics and Kinesiology Research- Assessment of Mechanical parameters – Latest computer technology – Software involving interpreting variables in Sports Biomechanics and Kinesiology software to boost the human Performance. **SPSS Package** Introduction and application – creating, saving and opening a data file – Data entry and analysis of descriptive statistics, dependent and independent t-test, one way and two way **ANOVA, ANCOVA**, Repeated Measure and correlation – Naming the variables – editing the output file.

Reference:

1. Jerry R. Thomas, Jack K. Nelson and Stephen J. Silverman., ***Research Methods in Physical Activity (5th Ed)***, New York: Human Kinetics. 2005.

2. Chris Gratton and Ian Jones., ***Research Methods for Sports Studies***, London: Routledge Taylor & Francis Group, 2004.

3. Mark B. Andersen, James R. Morrow, Allen W. Jackson, James G. Disch, Dale P. Mood,***Measurement and Evaluation in Physical Education***, USA: Human Kinetics. 2005.

4. Kilman Shin, ***SPSS Guide***, McGraw-Hill Higher Education, 1995.

5. Eric L. Einspruch, ***An introductory Guide to SPSS for Windows***, SAGE, 2005.

6. Sunil Chauhan, Akash Saxena, Kratika Gupta, ***Funadamentals of Computer***, Firewall Media,2006.
7. Abraham Silberchatz,Henry F. Korth and S.Sundarshan,(2002), "Data Z Base System concepts", 4th Edition, McGraw Hill.
8. Michael Halvorson, Michael.J Young. Microsoft Office XP Inside Out (paper back), Microsoft press.
9. ITL Education Solutions Limited, (2005)," Introduction to Information Technology", Pearson Education (India).

SEMESTER- V
PAPER CODE - USBK19CT505
SPORTS TECHNOLOGY

Learning Objectives:

1. To enable students to learn the fundamental of sports technology.
2. To equip the students to learn the technology used in sports.
3. To understand the different types of playfield surfaces, sports equipment and its Advantages.
4. To familiarise the students with the latest technology involved in sports and games.

Unit-I

Sports Technology- meaning- definition- scope-need and importance of sports technologies – history of science and technology in sport-timeline of technology in sports-principle and purpose of instrumentation in sports-technological impact on sports- technologies enhancing sports: issues and controversies- equipment extending the body- disability and prosthetics; technology, policy and sport; inclusion/ exclusion.

Unit-II

Science of Sports Materials - adhesives- nano glue, nano modeling technology, nano turf footwear production, factors and application in sports, constraints, foams- polyurethanepolystyrene, Styrofoam, closed cell and open cell foams, Neoprene, foam, Smart materials: Shape Memory Alloy (SMA), thermo chronic film, high density modeling foam.

Unit-III

Surface of Playfields -modern surface for playfields, construction and installation of sports surfaces, types of materials: synthetic, wood, polyurethane. Artificial turf, modern technology in construction of indoor and outdoor facilities – use of computers and software's in match analysis and coaching. **Sports Design:** The body and new structures of sport, cyborg of sport. Enhancing the future of sports performance- sports design and innovation strategies, sports technologies and human factors, sports injuries and preventions strategies.

Unit-IV

Modern Equipment - playing equipments: Balls: types, materials and advantages- Bat/ Stick/ Racquets: types, materials and advantages. Clothing and Shoes: types, materials and advantages. Measuring equipments: Running, throwing and jumping events – protective equipments: types, materials and advantages sports equipment with nano technology, advantages. **Sports and fitness Wearable Equipment -** Goniometer/ Torsiometer- Dynamometer- pinchmeter- Accelerometer- Myometer- Gyroscope- Heart rate monitor- GPS tracker- EMG sensor - Moov Motion Tracker- Magnetometer.

Unit-V

Training Gadgets: Basketball: Ball feeder, Mechanism and advantages- Cricket: bowling machine, mechanism and advantages - Tennis: serving machine, mechanism and advantages- Volleyball: serving machine, mechanism and advantages- Lighting facilities: methods of erecting flood light and measuring luminous- video coverage: types, size, capacity, place and position of camera in live coverage of sporting events- use of computer and software in match analysis and coaching- key performance indicators used to assess tactical and technical performance, collected data related to key performance indicators using notational analysis, create performance profiles and communicate data effectively through verbal and visual means.

Reference:

1. Dr. Hoshiyar Singh, ***Sports Technology,*** *KSK Publishers, 2017.*

2. Franz Konstanstin Fuss, AleksanderSubis, martin Strangewood, Rabindra Mehta, ***Routlede Handbook of Sports Technology and Engineering,*** *Routledge, 2013.*

3. Peter culley, John Pascoe, ***Sports Facilities and Technologies,*** *Routledge, 2009.*

*4. Sharon Dixon,****The Science of Engineering of Sports Surface: Routledge Research in Sports Technology and Engineering,*** *Routledge, 2015.*

5. Hambers R, Gabbett TJ, Cole MH, Beard A. ***The Use of Wearable Microsensors to Quantify Sport-Specific Movements –*** *A Systematic Review. Sports Med, 2015.*

6. Wundersitz DW, Josman C, Gupta R, Netto KJ, Gastin PB, Robertson S. ***Classification of team sport activities using a single wearable tracking device.*** *J Biomech, 2015.*

7. T. Madalinski, ***Sport, Technology and the Body: The Nature of Performance New York:*** *routledge,2009.*

8. Steven George Hayes, PraburajVenkatraman, ***Materailas and Technology for Sportswear and Performance apparel, CRC press:*** *Taylor & Francis,2016.*

9. Roberts P. suhumaker, osma K solieman, hsinchunchen, ***Sports Data Mining,*** *springer,2010.*

Semester – VI
Content

SEMESTER- VI
PAPER CODE - USBK19CT601
INTRODUCTION TO SPORTS PERFORMANCE ANALYSIS

Learning Objectives:

1. To make the students to learn the fundamental and advance strategies of performance analysis.
2. To enable the students to acquire the video capturing technique.
3. To make the students to learn and acquire the skills of using sports performance analysis software.
4. To enable the students to acquire the skills of sports performance analysis.
5. To enable the students to diagnose the strength and weakness of a player / team.
6. To create a platform for the students to choose sports perform analysis as a career.

Unit-I

Sports Performance analysis – meaning, need and importance of sports performance analysis, careers opportunities in sports performance analysis – purpose of sports performance analysis – match analysis, work rate analysis. Sports performance analysis methods and procedures.

Unit-II

Notational Analysis - Sport-specific notational systems; computerised notational analysis; notation in individual sports; notation in team sports; augmented feedback through videobased technologies; modelling of competitive sport; analysis of structures of sports informing performance indicators; flowcharts and presentation models of sports performance; reliability and validity of notational data; data processing; probability analysis; literature searching; critical evaluation of literature.

Unit-III

Analysis of Sports Technique - Observation of movement; systematic models of qualitative technique analysis; deterministic models of technique analysis; principles of movement (position, orientation, velocity, acceleration, force production); quantitative analysis of performance; accepted 2D filming protocols; comparison to model proformas; assessment of reliability; justification of methods.

Unit-IV

Athlete monitoring and analysis - Time-motion analysis in sport; analysis of athlete tracking systems; GPS and accelerometer analysis of training and competition; monitoring and analysis of sport-specific physical and psychological variables; physiological monitoring; external sources of data relating to sports performance; wind gauge, photo finish, hawk eye technology, goal line technology, hot spot, reliability of data and sources.

Unit-V

Softwares in sports performance analysis – Dartfish, Sports code, Quintic, Kinovea, and Longomatch. Technical requirements, installation procedure, tools, features and report generation.

Reference:

1. Hughes M. and Franks, I. **Essentials of performance analysis in sport.** Routledge. 2015..
2. McGarry, T., O'Donoghue, P. and Sampio J. **Handbook of sports performance analysis**. Routledge. 2013.
3. Peter & Lucy. **Data analysis in sports**. Routledge. 2015.

SEMESTER- VI
PAPER CODE - USBK19CT602
FOUNDATIONS TO SPORTS TRAINING, MEASUREMENT & EVALUATION

Learning objectives:

1. To make the students understand the concepts of fitness
2. To equip the students to learn the tests to measure each component of fitness
3. To acquire the skills of pre exercise screening
4. To learn the principles of training
5. To equip the students to prescribe the exercise to the clients
6. To understand the fitness norms and prepare fitness report of the clients

UNIT-I

Fitness – health related fitness, skill related fitness-components of health related fitness - components skill related fitness – Pre activity screening- guidelines, questionnaire, Risk stratification – measurement of resting and exercise blood pressure and heart rate –Body composition – BMI, WHR, Skin fold, Bioelectrical impedance, Hydrostatic weighing.

Unit-II

Muscular fitness- muscular strength– hand grip strength test, 1 RM test, Isokinetic test – Muscular endurance – curl up, push up – Flexibility – sit and reach test. Cardio respiratory fitness Maximal test - Beep test - Maximal Oxygen Consumption Test (VO_{2max}) - Walking / Running Tests - Balke 15 minute test - Cooper 12 minute test - Sub maximal tests-Cycle Test- Astrand Rhyming Bicycle Ergometer Test - Step test - Harvard Step Test - Queens College Step Test - YMCA 3 Minute Step Test - Harvard step test - AAHPERD Health related physical fitness test.

Unit-III

Skill related fitness test – speed – 50m test – Reaction time – Ruler drop test - Tests of Agility- Illinois Agility Run-Shuttle Run test (25 yards) - Zig Zag Test - T Test - Hexagon test-Tests of balance - Stork Stand Test - Balance Beam Test – Modified Bass Test of Dynamic Balance- Power - Margaria Kalamen Anaerobic Power Test. Test, Measurement and Evaluation - Criteria for selection of a standard test – Validity- Reliability - Objectivity – Norms.

UNIT-IV

Warm up – Cool down - Principles of training - FITT principle - Cardio respiratory exercise prescription – Heart Rate Reserve method (HRR), Maximum Heart Rate method, RPE scale – Training methods – Slow continuous method, Fast continuous method, Interval training, High Intensity Interval training, Fartlek training, Functional training.

Unit-V

Resistance training – types of resistance training, Muscular strength, muscular power, muscular endurance, and muscle hyper trophy – Frequency – repetitions- set – recovery – exercise to strengthen major muscles of the body. Flexibility – types of flexibility–active, passive, static, dynamic, ballistic – PNF - Stretching exercise for major muscles of the body.

Reference:

1. ***ACSM's Health/Fitness Facility Standards and Guidelines****, New York: Human, Kinetics, 1992.*
2. ***ACSM's Health related Physical Fitness Assessment manual****, Lippin Cott, 2008.*
3. *Michael Boyle.* ***Functional Training for Sports.*** *Human Kinetics, 2004.*
4. *Clake, H. Harrison.* ***Application of Measurement to Health and Physical Education, New Jersey:*** *Prentice Hall Inc. 1976.*
5. *Jensen, Clayne, R & Cyntha C. Hirst.* ***Measurement in Physical Education and Athletics,*** *MacMillan Publishing co., Inc New York, 1982*
6. *Juan Carlos.* ***Functional Training. Human Kinetics****. 2016*
7. *Arnold G. Nelson & Jouko Kokkonen,* ***Stretching anatomy****. Human Kinetics. 2007.*
8. *Edmund O. Acevedo and Michael A. Starks.* ***Exercise Testing and Prescription lab Manual,*** *USA: Human Kinetics Publishers, 2003.*
9. *Claudio Gil Soares de Araujo.* ***Flexi test,*** *USA: Human Kinetics Publishers, 2004.*
10. *Thomas and Roger.* ***Essentials of strength training and conditioning,*** *3rd edition, Human Kinetics, 2008.*
11. *Vern Gambatta.* ***Athletic Development****. Human Kinetics, 2007.*
12. *Ryan George.* ***Free weight training anatomy.*** *Ulysses Press. 2016.*

SEMESTER- VI
PAPER CODE - USBK19CT603
INTRODUCTION TO MAT LAB

Learning objectives:

1. To enable the students understand the procedures, algorithms, and concepts require in solving specific problems.
2. To enable the students to carry out simple numerical computations and analyses using MATLAB.
3. To familiarize the students on the basic MATLAB software.
4. To prepare the students to use MATLAB in their project works.
5. To equip the students to utilize experimental, statistical and computational methods and tools necessary for 3D motion analysis.

Unit-I

Quick start

- Desktop basics
- Matrices and arrays
- Workspace variables
- Character strings
- Calling function
- Plots and programming scripts

Unit-II

Language fundamentals

- Matrices and magic squares
- Expressions
- Entering commands
- Indexing
- Types of arrays

Unit-III

Mathematics

- Linear algebra
- Operations on nonlinear functions
- Multivariate data
- Data analysis

Unit-IV

Graphics

- Basic plotting function
- Creating mesh and surface plots
- Display images
- Printing graphics
- Working with graphic objects

Unit-V

Programming

- Control flow
- Scripts and functions

Reference:

1. Amos Gilat. MATLAB- An introduction with applications. Wiley. 2013

2. Brian Hahn and Dan Valentine, ***Essential MATLAB for Engineers and Scientists*** *(Fifth Edition)*

3. Stormy Attaway, Matlab: ***A Practical Introduction to Programming and Problem Solving*** *4th Edition. Elsevier. 2017*

4. Jim & John. ***MATLAB for dummies****. Wiley. 2015.*

SEMESTER- VI
PAPER CODE - USBK19CT604
INTRODUCTION TO PYTHON IN BIOMECHANICS & KINESIOLOGY

Learning Objectives

1. Python is a widely used high-level, general-purpose, interpreted, dynamic programming language.
2. Its design philosophy emphasizes code readability, and its syntax allows programmers to express concepts in fewer lines of code than possible in languages such as C++ or Java.
3. The language provides constructs intended to enable writing clear programs on both small and large scale.

UNIT I

Introduction to Python

- Introduction to python
- Writing Simple Programs

UNIT II

Geometry Basics

Discuss How Python Program runs

Types and Operation in python

- Numbers
- String
- List and Tuples
- Dictionaries
- Files
- Statements and Syntax
- Assignments ,Expressions and Print Statements
- Conditional Construct
- Iterative Construct

UNIT III

- Introduction to Functions and Lambda Forms
- Functions and Arguments and Scope
- List Comprehensions
- Generators

UNIT IV

- Understanding Modules in Python
- Module Packages
- Package import
- Mixed usage modes
- Introduction to OO Programming in python
- Class coding basic
- OOP and inheritance
- New styles Classes

.

UNIT V

- Projects
- Query

Reference :

1. Python The Ultimate Beginner's Guide! *Andrew Johansen* Copyright 2016
2. Python Scientific lecture notes Release 2013.2 beta (euroscipy 2013) EuroScipy tutorial team Editors: Valentin Haenel, Emmanuelle Gouillart, Gaël Varoquaux http://scipy-lectures.github.com September 26, 2015 (2013.2-beta-328-g3cd80a5)
3. Python Tutorial CS/CME/BioE/Biophys/BMI 279 Oct. 17, 2017 Rishi Bedi

Web Resources

www.wingfotech.com
www.utkraanti.com

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, CHENNAI

The detailed syllabus for various programme offered by this university are attached. Further this University is practicing Outcome Based Education (OBE), since 2018. In order to achieve the programme of this university have followed Programme Education Objective (PEOs) and Programme Outcomes (POs) and Programme Specific Outcome (PSOs) and Course Outcomes.

The Professional Programmes offered by this university are approved by competent authorities as listed below and the relevant documents are attached.

S.No	Programme Name	Authorised Body For Approval	Current Approval Status
1	BPED	NCTE	ACTIVE
2	MPED	NCTE	ACTIVE
3	MBA	AICTE	ACTIVE
4	M.TECH	AICTE	ACTIVE

Tamil Nadu Physical Education and Sports University
Chennai 600 127.

Registrar

Registrar
Tamilnadu Physical Education
and
Sports University
Chennai

All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)
7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
Phone: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-India.org

F No. Southern/2012/1-756696155

Date 06/08/2012

To,
The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Approval for New Institute / Technical campus / Conversion of Women Institute to Coeducation / Change of Site from academic year 2012-13

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2010 notified by the Council vide notification number F-No.37-3/Legal/2010 dated 10/12/2010 and amendment vide notification number F-No.37-3/Legal/2011 dated 30/09/2011 and other notifications, as applicable and published from time to time, I am directed to convey the approval to

Regional Office	Southern	Application Id	1-756696155
		Permanent Id	1-444215911
Name of the Institute	TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY	Institute Address	DEPARTMENT OF SPORTS TECHNOLOGY, TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, MELAKOTTAIYUR, CHENGALPATTU TALUK, KANCHEEPURAM DISTRICT, CHENNAI- 600048, CHENNAI, CHENNAI, Tamil Nadu, 600048
Name of the Organisation	TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY	Organisation Address	DEPARTMENT OF SPORTS TECHNOLOGY, TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, MELAKOTTAIYUR, CHENGALPATTU TALUK, KANCHEEPURAM DISTRICT, CHENNAI- 600048, MELAKOTTAIYUR, KANCHIPURAM, Tamil Nadu, 600048
Institute Type	Government		

Opted Women to Co-ed	No	Opted Change of Name	No	Opted Change of Site	No
Approved for Women to Co-ed	Not Applicable	Approved Change of Name	Not Applicable	Approved Change of Site	Not Applicable

to conduct following courses with the intake indicated below for the academic year 2012-2013

Letter Printed On:8/16/2012

Application Number: 1-756696155*

Note: This is a Computer generated Letter of Approval.No signature is required.

Printed By : aic002031

App. Id : 1-756696155

Programme	Shift	Level	Course	Full-/Part-Time	Affiliating Body	Intake approved for 12-13	PIO	NRI	Foreign Collaboration
ENGINEERING AND TECHNOLOGY	1st Shift	POST GRADUATE	SPORTS TECHNOLOGY	FULL TIME	Tamil Nadu Physical Education and Sports University, Chennai	18	No	No	No

Note : The approval is valid for two years from the date of issue of this letter for getting affiliation with respective University and fulfilling State Govt. requirements for admission. If institution is unable to start in the academic session 2012-13 due to reason mentioned above, the institution will have to apply On-line on AICTE web portal in the next academic session for continuation of approval.

The Society/Trust/Institution shall obtain necessary affiliation / permission from the concerned affiliating University as per the prescribed schedule of the University/ Admission authority etc. The Applicant Society/Trust/Institution shall send information about commencement of the above courses to AICTE. In case the Institution is not in a position to commence the above mentioned courses for whatever reason during the two years period from the date of issue of this letter, the approval becomes invalid and the applicant Society/Trust/Institution shall make fresh application to AICTE for grant of approval as per the norms prevailing at that time.

All Institutions shall fulfill the following general conditions:

1. The management shall provide adequate funds for development of land and for providing related infrastructural, instructional and other facilities as per norms and standards laid down by the Council from time to time and for meeting recurring expenditure.

2. The admission shall be made only after adequate infrastructure and all other facilities, including the availability / recruitment of the required faculty are provided as per norms and guidelines of the AICTE.

3. The admissions shall be made in accordance with the regulations notified by the Council from time to time.

4. The curriculum of the course, the procedure for evaluation / assessment of students shall be in accordance with the norms prescribed by the AICTE and concerned affiliating university whereever applicable.

5. The management of the Institution shall not close the Institution or the institution shall not discontinue any course(s) or start any new course(s) or alter intake capacity of seats without the prior approval of the Council.

6. No excess admission shall be made by the Institution over and above the approved intake under any circumstances. In case any excess admission is reported to the Council, appropriate action as per the notified regulations shall be initiated against the Institution.

Letter Printed On:8/16/2012

Application Number: 1-756696155*

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7 The institutions shall not have any collaborative arrangements with any Indian and / or Foreign Universities for conduct of technical courses other than those approved by AICTE without obtaining prior approval from AICTE. In case any violation is reported to the Council, appropriate action as per the notified regulations shall be initiated against the Institution.

8 The Institution shall not conduct any course(s) in the field of technical education in the same premises / campus and / or in the name of the Institution without prior permission / approval of AICTE. If found so, appropriate action as per the notified regulations shall be initiated against the Institution.

9. The institution shall not conduct any non-technical course (s) in the same premises / campus under any circumstances. In case any violation is reported to the Council, appropriate action as per the notified regulations shall be initiated against the Institution.

10. The institution shall operate only from the approved location, and that the institution shall not open any off campus study centers / extension centers directly or in collaboration with any other institution / university / organization for the purpose of imparting technical education without obtaining prior approval from the AICTE. If found so, appropriate action as per the notified regulations shall be initiated against the Institution.

11. The tuition and other fees shall be charged as prescribed by the Competent Authority within the overall criteria prescribed by the Council from time to time. No capitation fee shall be charged from the students / guardians of students in any form. If found so, appropriate action as per the notified regulations shall be initiated against the Institution.

12. The accounts of the Institution shall be audited annually by a certified Chartered Accountant and shall be open for inspection by the Council or any body or persons authorized by it.

13. The Director / Principal and the teaching and other staff shall be appointed in given time frame and selection shall be done according to procedures, qualifications and experience prescribed by the Council from time to time and pay scales are as per the norms prescribed by the Council from time to time.

14. The technical institution shall publish an information booklet before commencement of the academic year giving details regarding the institution and courses / programs being conducted and details of infrastructural facilities including faculty etc. in the form of mandatory disclosure. The information booklet may be made available to the stakeholders of the technical education. The mandatory disclosure information,as per directions in the AICTE website / Approval Process Handbook, shall be put on the Institution Website. The information shall be revised every year with updated information about all aspects of the institution.

15. It shall be mandatory for the technical institution to maintain a Website providing the prescribed information. The Website information must be continuously updated as and when changes take place.

16. If a technical Institution fails to disclose the information or suppress and / or misrepresent the information, appropriate action as per the notified regulations shall be initiated against the Institution.

17. AICTE may carry out random inspections round the year for verifying the status of the Institutions to ensure maintenance of norms and standards.

Letter Printed On:8/16/2012

Application Number: 1-756696155*

Note: This is a Computer generated Letter of Approval.No signature is required.

18. AICTE may also conduct inspections with or without notifying the dates to verify specific complaints, to verify adherence to AICTE norms & standards, and to verify any mis-representation, violation of norms & standards, mal-practices etc

19. The Institution by virtue of the approval given by Council shall not automatically become claimant to any grant-in-aid from the Central or State Government

20. In the event of a student / candidate withdrawing before the starting of the course, the wait listed candidates should be given admission against the vacant seat. The entire fee collected from the student, after a deduction of the processing fee of not more than Rs. 1000/- (Rupees one thousand only) shall be refunded and returned by the Institution / University to the student / candidate withdrawing from the program. It would not be permissible for Institutions and Universities to retain the School / Institution Leaving Certificates in original to force retention of admitted students.

21. The Institute shall take appropriate measures for prevention of ragging in any form, in the light of AICTE regulation "Prevention and Prohibition of Ragging in Technical Institutions, Universities including Deemed to Universities imparting technical education" Regulation 2009 (F.No. 37-3/Legal/AICTE/2009 dated 01/07/2009). Incase of failure to prevent the instances of ragging by the Institutions, the Council shall take appropriate action as per the notified regulations.

The Management of the Institute shall strictly follow further conditions as may be specified by the Council from time to time. The Council may withdraw the approval, in case it observe any violation of the above conditions and / or non adherence to the norms and standards prescribed by the Council, mis-representation of facts and submitting factually in correct information to it.

(Dr. K.P.Isaac)
Member Secretary , AICTE

Copy to

1. **The Regional Officer,**
   All India Council for Technical Education
   Shastri Bhawan 26, Haddows Road
   Chennai - 600 006, Tamil Nadu

2. **The Director Of Technical Education,**
   Tamil Nadu

3. **The Registrar,**
   Tamil Nadu Physical Education and Sports University, Chennai

4. **The Principal / Director,**
   TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

Letter Printed On:8/16/2012

Application Number: 1-756696155*

Note: This is a Computer generated Letter of Approval.No signature is required.

Printed By : aic002031

DEPARTMENT OF SPORTS TECHNOLOGY,
TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY,
MELAKOTTAIYUR, CHENGALPATTU TALUK, KANCHEEPURAM
DISTRICT, CHENNAI- 600048,
CHENNAI,CHENNAI,
Tamil Nadu,600048

5 The Secretary / Chairmen,

TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
DEPARTMENT OF SPORTS TECHNOLOGY,
TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY,
MELAKOTTAIYUR, CHENGALPATTU TALUK, KANCHEEPURAM DISTRICT,
CHENNAI- 600048,
MELAKOTTAIYUR,KANCHIPURAM,
Tamil Nadu,600048

6. **Guard File(AICTE)**

Letter Printed On:8/16/2012

Application Number: 1-756696155*

Note: This is a Computer generated Letter of Approval.No signature is required.

Printed By : aic002031

All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg,Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

APPROVAL PROCESS 2020-21

Extension of Approval (EoA)

F.No. Southern/1-7014204194/2020/EOA Date: 30-Apr-2020

To,

The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Extension of Approval for the Academic Year 2020-21

Ref: Application of the Institution for Extension of Approval for the Academic Year 2020-21

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2020 notified by the Council vide notification number F.No. AB/AICTE/REG/2020 dated 4th February 2020 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Permanent Id	1-444215911	**Application Id**	1-7014204194
Name of the Institution	TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY	**Name of the Society/Trust**	TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
Institution Address	DEPARTMENT OF SPORTS TECHNOLOGY, TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, MELAKOTTAIYUR, CHENGALPATTU TALUK, KANCHEEPURAM DISTRICT, CHENNAI- 600048, CHENNAI, CHENNAI, Tamil Nadu, 600127	**Society/Trust Address**	DEPARTMENT OF SPORTS TECHNOLOGY, TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, MELAKOTTAIYUR, CHENGALPATTU TALUK, KANCHEEPURAM DISTRICT, CHENNAI-600048,MELAKOTTAIYUR,KANCHIPURAM,Tamil Nadu,600127
Institution Type	Government	**Region**	Southern

To conduct following Courses with the Intake indicated below for the Academic Year 2020-21

Program	Level	Course	Affiliating Body (University /Body)	Intake Approved for 2019-20	Intake Approved for 2020-21	NRI Approval Status	PIO / FN / Gulf quota/ OCI/ Approval Status
ENGINEERING AND TECHNOLOGY	POST GRADUATE	SPORTS TECHNOLOGY	Tamil Nadu Physical Education And Sports University, Chennai	18	18	NA	No

It is mandatory to comply with all the essential requirements as given in APH 2020-21 (Appendix 6)

Important Instructions

1. The State Government/ UT/ Directorate of Technical Education/ Directorate of Medical Education shall ensure that 10% of reservation for Economically Weaker Section (EWS) as per the reservation policy for admission, operational from the Academic year 2020-21 is implemented without affecting the reservation percentages of SC/ ST/ OBC/ General. However, this would not be applicable in the case of Minority Institutions referred to the Clause (1) of Article 30 of Constitution of India. Such Institution shall be permitted to increase in annual permitted strength over a maximum period of two years beginning with the Academic Year 2020-21

2. The Institution offering courses earlier in the Regular Shift, First Shift, Second Shift/Part Time now amalgamated as total intake shall have to fulfil all facilities such as Infrastructure, Faculty and other requirements as per the norms specified in the Approval Process Handbook 2020-21 for the Total Approved Intake. Further, the Institutions Deemed to be Universities/ Institutions having Accreditation/ Autonomy status shall have to maintain the Faculty: Student ratio as specified in the Approval Process Handbook. All such Institutions/ Universities shall have to create the necessary Faculty, Infrastructure and other facilities WITHIN 2 YEARS to fulfil the norms based on the Affidavit submitted to AICTE.

3. In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

4. Strict compliance of Anti-Ragging Regulation: - Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 373/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

Prof.Rajive Kumar
Member Secretary, AICTE

Copy to:

1. **The Director Of Technical Education**, Tamil Nadu**

2. **The Registrar**,**
   Tamil Nadu Physical Education And Sports University, Chennai

3. **The Principal / Director,**
   TAMILNADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
   Department Of Sports Technology,
   Tamil Nadu Physical Education And Sports University, Melakottaiyur, Chengalpattu Taluk, Kancheepuram District, Chennai-600048,
   Chennai,Chennai,
   Tamil Nadu,600127

4. **The Secretary / Chairman,**
   DEPARTMENT OF SPORTS TECHNOLOGY,
   TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, MELAKOTTAIYUR, CHENGALPATTU TALUK, KANCHEEPURAM DISTRICT, CHENNAI- 600048
   MELAKOTTAIYUR,KANCHIPURAM
   Tamil Nadu,600127

5. **The Regional Officer,**
   All India Council for Technical Education
   Shastri Bhawan 26, Haddows Road
   Chennai - 600 006, Tamil Nadu

6. **Guard File(AICTE)**

Note: Validity of the Course details may be verified at http://www.aicte-india.org/

****** Individual Approval letter copy will not be communicated through Post/Email. However, consolidated list of Approved Institutions(bulk) will be shared through

official Email Address to the concerned Authorities mentioned above.

All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg,Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

APPROVAL PROCESS 2020-21

Extension of Approval (EoA)

F.No. Southern/1-7013448386/2020/EOA Date: 30-Apr-2020

To,

The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Extension of Approval for the Academic Year 2020-21

Ref: Application of the Institution for Extension of Approval for the Academic Year 2020-21

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2020 notified by the Council vide notification number F.No. AB/AICTE/REG/2020 dated 4th February 2020 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Permanent Id	1-478239231	**Application Id**	1-7013448386
Name of the Institute	DEPARTMENT OF SPORTS MANAGEMENT	**Name of the Society/Trust**	TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
Institute Address	TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY, MELAKOTTAIYUR, VANDALORE - KELAMBAKKAM ROAD,, CHENNAI-600127, KANCHIPURAM, Tamil Nadu, 600127	**Society/Trust Address**	MELAKOTTAIYUR, VANDALORE-KELAMBAKKAM ROAD,,CHENNAI,KANCHIPURAM, Tamil Nadu,600127
Institute Type	Government	**Region**	Southern

To conduct following Courses with the Intake indicated below for the Academic Year 2020-21

Program	Level	Course	Affiliating Body (University /Body)	Intake Approved for 2019-20	Intake Approved for 2020-21	NRI Approval Status	PIO / FN / Gulf quota/ OCI/ Approval Status
MANAGEMENT	POST GRADUATE	MBA	Tamil Nadu Physical Education And Sports University, Chennai	60	60	NA	No

It is mandatory to comply with all the essential requirements as given in APH 2020-21 (Appendix 6)

Important Instructions

1. The State Government/ UT/ Directorate of Technical Education/ Directorate of Medical Education shall ensure that 10% of reservation for Economically Weaker Section (EWS) as per the reservation policy for admission, operational from the Academic year 2020-21 is implemented without affecting the reservation percentages of SC/ ST/ OBC/ General. However, this would not be applicable in the case of Minority Institutions referred to the Clause (1) of Article 30 of Constitution of India. Such Institution shall be permitted to increase in annual permitted strength over a maximum period of two years beginning with the Academic Year 2020-21

2. The Institution offering courses earlier in the Regular Shift, First Shift, Second Shift/Part Time now amalgamated as total intake shall have to fulfil all facilities such as Infrastructure, Faculty and other requirements as per the norms specified in the Approval Process Handbook 2020-21 for the Total Approved Intake. Further, the Institutions Deemed to be Universities/ Institutions having Accreditation/ Autonomy status shall have to maintain the Faculty: Student ratio as specified in the Approval Process Handbook. All such Institutions/ Universities shall have to create the necessary Faculty, Infrastructure and other facilities WITHIN 2 YEARS to fulfil the norms based on the Affidavit submitted to AICTE.

3. In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

4. Strict compliance of Anti-Ragging Regulation: - Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 373/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

Prof.Rajive Kumar
Member Secretary, AICTE

Copy to:

1. **The Director Of Technical Education**, Tamil Nadu**

2. **The Registrar**,**
   Tamil Nadu Physical Education And Sports University, Chennai

3. **The Principal / Director,**
   DEPARTMENT OF SPORTS MANAGEMENT
   Tamil Nadu Physical Education And Sports University, Melakottaiyur, Vandalore - Kelambakkam Road,,
   Chennai-600127,Kanchipuram,
   Tamil Nadu,600127

4. **The Secretary / Chairman,**
   MELAKOTTAIYUR, VANDALORE-KELAMBAKKAM ROAD,
   CHENNAI,KANCHIPURAM
   Tamil Nadu,600127

5. **The Regional Officer,**
   All India Council for Technical Education
   Shastri Bhawan 26, Haddows Road
   Chennai - 600 006, Tamil Nadu

6. **Guard File(AICTE)**

Note: Validity of the Course details may be verified at http://www.aicte-india.org/

****** Individual Approval letter copy will not be communicated through Post/Email. However, consolidated list of Approved Institutions(bulk) will be shared through official Email Address to the concerned Authorities mentioned above.

अखिल भारतीय तकनीकी शिक्षा परिषद्
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

(भारत सरकार का एक सांविधिक निकाए) (A STATUTORY BODY OF THE GOVT. OF INDIA)

File No. TN-005/MBA/2009-10/2008

Date: 05.06.2009

LETTER OF APPROVAL 10 JUN 2009

To

The Secretary
(Higher Education)
Govt. of Tamilnadu, Fort St. George
Chennai-600 009

Sub: AICTE approval to **Tamil Nadu Physical Education and Sports University, 8th Floor, EVK Sampath Maaligai, College Road, Chennai – 600 006** for establishment of **MBA** institution in the name and style of **Department of Sports Management, Tamil Nadu Physical Education and Sports University Melkottaiyur Village, Vandalore-Kelambakkam Road, Kanchipuram Distt..**

Sir / Madam,

As per the Regulations notified by the Council vide F. No. 37-3/Legal/2004 dated 14th September 2006 and norms, standards, procedures and conditions prescribed by the Council from time to time and based on the recommendations of the Expert Committee and EC Sub Committee, I am directed to convey the approval of the Council **Tamil Nadu Physical Education and Sports University, 8th Floor, EVK Sampath Maaligai, College Road, Chennai – 600 006** for establishment of **MCA** institution in the name and style of **Department of Sports Management, Tamil Nadu Physical Education and Sports University Melkottaiyur Village, Vandalore-Kelambakkam Road, Kanchipuram Distt** for conduct of the following course and intake.

S.No.	Name of the Course	Intake	Period of Approval
1.	**MBA**	60	2009-10 *

* **Note:** **The Letter of approval (LOA) is valid for two years from the date of issue of letter of approval for obtaining affiliation with Concerned University and fulfilling State Government requirement for admission.**

The **Tamil Nadu Physical Education and Sports University, 8th Floor, EVK Sampath Maaligai, College Road, Chennai – 600 006** shall obtain necessary affiliation/ permission from the concerned affiliating University as per the prescribed schedule of the University/ Admission Authority etc. The Applicant Society/Trust/Institution shall send information about commencement of the above courses to AICTE. Incase the Institution could not commence the above mentioned courses for whatsoever reasons during the two years period from the date of issue of this letter, the approval becomes invalid and the applicant society/trust shall have to make fresh a application to AICTE for grant of a fresh approval.

The approval is subject to specific conditions as follows:

- The built up area as per AICTE norms must be ready at the permanent site on or before 31.12.2009.
- A Head of the deptt. And other faculties as per AICTE / UGC norms must be appointed immediately.
- Computing facilities as per AICTE norms must be made available.

The approval is further subject to fulfillment of following conditions.

1. That the management shall provide adequate funds for development of land and building and for providing related infrastructural, instructional and other facilities as per Council's norms and standards laid down by the Council from time to time and for meeting recurring expenditure.

2. (a) That the admissions shall be made only after adequate infrastructure and all other facilities are provided as per norms and guidelines of the AICTE.

   (b) That the admissions shall be made in accordance with the regulations notified by the Council from time to time.

   ©That the admissions to the courses shall be made only after the affiliating University has given permission to start the course.

   (d) That the Institution shall not allow closure of the Institution or discontinuation of the course(s) or start any new course (s) or alter intake capacity of seats without the prior approval of the Council.

(e) That no excess admissions shall be made by the Institution over and above the approved intake under any circumstances.

(f) That the institutions shall not have any collaborative arrangements with any Indian and/or Foreign Universities for conduct of technical courses other than those approved by AICTE without obtaining prior approval from AICTE.

(g) That the Institution shall not allow conduct of any unapproved course whether technical or non technical in the premises of AICTE approved institution/campus and /or in the name of the Institution without prior permission from AICTE.

3. That the institution shall operate only from the approved location, and that the institution shall not open any off campus study centers / extension centers directly or in collaboration with any other institution / university / organization for the purpose of imparting technical education without obtaining prior approval from the AICTE.

4. That the tuition and other fees shall be charged as prescribed by the Competent Authority within the overall criteria prescribed by the Council from time to time. No capitation fee shall be charged from the students/guardians of students in any form.

5. That the accounts of the Institution shall be audited annually by a certified Chartered Accountant and shall be open for inspection by the Council or any body or person authorized by it.

6. That the Director/Principal and the teaching and other staff shall be selected according to procedures, qualifications and experience prescribed by the Council from time to time and pay scales are paid as per the norms prescribed by the Council for time to time.

7. (a) That the institution shall furnish requisite returns and reports as desired by AICTE in order to ensure proper maintenance of administrative and academic standards.

(b) That the technical institution shall publish an information booklet before commencement of the academic year giving details regarding the institution and courses/programmes being conducted and details of infrastructural facilities including faculty etc. in the form of mandatory disclosure. The information booklet may be made available to the stakeholders of the technical education on cost basis. The mandatory disclosure information shall be housed in the Institution Web-Site. The information shall be revised every year with updated information about all aspects of the institution.

(c) That it shall be mandatory for the technical institution to maintain a web-site providing the prescribed information. The website information must be continuously updated as and when changes take place.

(d) That a compliance report in the prescribed format along with mandatory disclosure on fulfillment of the above conditions, shall be submitted each year by the Institution within the time limit prescribed by the Council from time to time.

(e) That if Technical Institution fails to disclose the information or suppress and/or misrepresent the information, appropriate action could be initiated including withdrawal of AICTE approval.

8. That all the laboratories, workshops etc. shall be equipped as per the syllabi of the concerned affiliating University and shall be in operational condition before making admissions.

9. That a library shall be established with adequate number of titles, books, journals (both Indian & Foreign) etc as per AICTE norms.

10. That a computer center with adequate number of terminals, Printers, legal software etc. shall be established as per AICTE norms.

11. That a Joint FDR is required to be created for an amount and prescribed by the Council from time to time.

12. That AICTE may carry out random inspections round the year any time for verifying the status of the Institutions to ensure maintenance of norms and standards.

13. That AICTE may also conduct inspections with or without notifying the dates to verify specific complaints of mis-representation, violation of norms and standards, mal-practices etc.

14. That the Institution by virtue of the approval given by Council shall not automatically become claimant to any grant-in-aid from the Central or State Government.

15. That the institution shall take appropriate measures for prevention of ragging in any form, in the light of directions of Supreme Court of India in Writ Petition No. (C) 656/1998. In case of failure to prevent the instances of ragging by the institutions, the Council shall take appropriate action including withdrawal of approval.

16. **That the institution shall provide the following facilities for the physically challenged persons.**

a. Class rooms, toilets and hostels to be made accessible to wheel chair users.
b. Resource room for visually impaired students.
c. Accessible Library
d. Counseling Centre for disabled students
e. Facility of Sign Language Interpreter
f. All students needing assistive devices to be provided such devices

17. That in the event of a student/candidate withdrawing before the starting of the course, the wait listed candidates should be given admission against the vacant seat. The entire fee collected from the student, after a deduction of the processing of not more than Rs. 1000/- (Rupees One thousand only) shall be refunded and returned by the Institution/University to the student/candidate withdrawing from the programme. It would not be permissible for institutions and Universities to retain the School/Institution Leaving Certificate in original to force retention of admitted students (see Public Notice AICTE/DPG/03(01)/2008).

18. That the Management shall strictly follow further conditions as may be specified by the Council from time to time.

19. In the event of non-compliance by the **Department of Sports Management, Tamil Nadu Physical Education and Sports University Melkottaiyur Village, Vandalore-Kelambakkam Road, Kanchipuram Distt** with regard to guidelines, norms and conditions prescribed from time to time the Council shall be free to take measures for withdrawal of its approval or recognition, without consideration of any related issues and that all liabilities arising out of such withdrawal would solely be that of the **Department of Sports Management, Tamil Nadu Physical Education and Sports University Melkottaiyur Village, Vandalore-Kelambakkam Road, Kanchipuram Distt**.

Yours faithfully,

(Dr. K.B. Thakur)
Director (M&T)

Copy to:

1. **The Commissioner of Tech. Education,** Govt. of TamilNadu, Directorate of Tech. Education, Chennai - 600 025 (He is requested to kindly monitor the compliance with the conditions as laid down in this approval letter and keep the AICTE informed of the same.)

2. **The Regional Officer,** AICTE- Southern Regional Office, Shastri Bhawan, 26, Haddows Road, Nungambakkam, Chennai - 600 006

3. **The Principal/Director**
Department of Sports Management, Tamil Nadu Physical Education and Sports University Melkottaiyur Village, Vandalore-Kelambakkam Road,
Kanchipuram Distt

4. **The President/Chairman**
Tamil Nadu Physical Education and Sports University,
8th Floor, EVK Sampath Maaligai, College Road, Chennai - 600 006
(The institute is required to submit Compliance report as per AICTE norms on or before 31st August, 2009)

5. **The Registrar** Tamil Nadu Physical Education and Sports University, Chennai

6. Guard file (AICTE).

राष्ट्रीय अध्यापक शिक्षा परिषद
(भारत सरकार का एक विधिक संस्थान)
दक्षिण क्षेत्रीय समिति

National Council for Teacher Education
(A Statutory Body of the Government of India)
Southern Regional Committee

F.No.SRO/NCTE/SRCAPP803/M.P.Ed/TN/2015/ 61979 Date: 23/07/2015

Speed Post

To
Dr. STK
SPRAE
B
7/8/15

TO BE PUBLISHED IN GAZETTE OF INDIA PART III SECTION 4

ORDER

WHEREAS, in terms of Section 14(1) of the NCTE Act, the Registrar Tamilnadu Physical Education & Sports University, Plot No. 148/31c, Street No. 148/31c, Melakotaiyur Village, Vandalur Post, Chengalpattu Taluk, Chennai City, Kanchipuram District-600048, Tamilnadu has applied for grant of recognition to Tamilnadu Physical Education & Sports University, Plot/Khasara No. 148/31c, Street No. 148/31c, Melakotaiyur Village, Vandalur Post, Chengalpattu Taluk, Chennai City, Kanchipuram District-600048, Tamilnadu for M.P.Ed course online on 27.09.2011 for One year duration under section 14(1) of the NCTE Act, 1993 and hardcopy received by Southern Regional Committee of NCTE on 07.10.2011.

AND WHEREAS, on scrutiny of the application submitted by the institution, the documents attached therewith, the affidavit submitted and the report received from VT and videography, and the certificates received from the university, the Committee is satisfied that the applicant fulfils the requirements under the provisions of NCTE Act, Rules and relevant Regulations including the Norms and Standards for the said teacher education programme such as instructional facilities, infrastructural facilities, financial resources, etc., for running the programme.

NOW THEREFORE, in exercise of the powers vested under Section14(3) (a) of the of the NCTE Act, 1993, the Regional Committee, NCTE hereby grants recognition to **Tamilnadu Physical Education & Sports University, Plot/Khasara No. 148/31c, Street No. 148/31c, Melakotaiyur Village, Vandalur Post, Chengalpattu Taluk, Chennai City, Kanchipuram District-600048, Tamilnadu** for conducting **M.P.Ed** programme of **two years** duration with an annual intake of **40 students** from the academic sessions **2015-2016** under Clause 7(16) of NCTE (Recognition Norms & Procedure) Regulations, 2014 subject to fulfillment of the following conditions:-

I. The Endowment fund of Rs.5 lakhs and Reserve fund of Rs.7 lakhs kept in joint account with Regional Director of NCTE should be maintained perpetually. Loan raising against or mortgaging of FDR's shall not be done.

II. The institution shall comply with the various other norms and standards prescribed in the NCTE regulations, as amended from time to time.

III. The institution shall make admission only after it obtains affiliation from the examining body in terms of clause 8(10) of the NCTE (Recognition Norms & Procedure) Regulations 2014.

IV. The institution shall ensure that the required number of academic staff duly approved by affiliating body for conducting the course should always remain in position.

V. The institution shall comply with the additional facilities required (additional builtup area, additional staff, additional funds etc) for the second unit as prescribed in NCTE (Recognition Norms and Procedure) Regulations 2014 before 31.10.2015.

Contd....2

Phone : 080-23185669, 23185670, 23185672 Fax : 080-23185673
E-mail : scrc@ncte-india.org Website : http://www.srcncte.in
Nagarabhavi, Jnana Bharathi Campus Road,
Opp. National Law School, Bangalore - 560 072.

2. Further the recognition is subject to the condition that the institution shall move gradually to become a composite institution but not later than 2016-17.

3. Further, the recognition is subject to fulfillment of all such other requirements as may be prescribed by other regulatory bodies like UGC, affiliating University / Body. the State Government etc, as applicable

4. The institution shall submit to the Regional Committee a Self- Appraisal Report at the end of each academic year along with the statement of annual accounts duly audited by a Chartered Accountant.

5. The institutions shall maintain its Website with hyperlink to the Council and the Southern Regional Committee, covering, inter –alia , the details of the institution, its location, name of the programme applied for with intake; availability of physical infrastructure, such as land, building, office, classrooms, and other facilities or amenities; instructional facilities, such as laboratory and library and the particulars of their proposed teaching faculty and non-teaching staff with photographs, for information of all concerned. The information with regard to the following shall also be made available on the website namely:-

   a. Sanctioned programmes along with annual intake in the institution:
   b. Name of faculty and staff in full as mentioned in school certificate along with their qualifications, scale of pay and photograph.
   c. Name of faculty members who left or joined during the last, quarter:
   d. Names of Students admitted during the current session along with qualification, Percentage of marks in the qualifying examination and in the entrance test, if any, date of admission, etc.;
   e. Fee charged from students;
   f. Available infrastructural facilities;
   g. Facilities added during the last quarter;
   h. Number of books in the library, journals subscribed to and additions, if any, in the last quarter;
   i. The affidavit with enclosure submitted along with application.
   j. The institution shall be free to post additional relevant information if it so desires.
   k. Any false or incomplete information on website shall render the institution liable for withdrawal of recognition.

6. The institution shall adhere to the mandatory disclosure in the prescribed format and display up-to-date information on its official website.

7. The institution shall make available list of students admitted on its official website.

8. If the institution Contravenes any of the above conditions or the provision of the NCTE Act, Rules, Regulations and orders made of issued there under, the institution will render itself vulnerable to adverse action including withdrawal of recognition by the regional committee under the provisions of Section17(1) of the NCTE Act.

By Order,

P Revathi Reddy

(P.Revathi Reddy)
Regional Director

The Manager
Government of India Press
Department of Publications (Gazette Section)
Civil Lines, New Delhi – 110054.

Contd - 3

To:

The Principal,
Tamilnadu Physical Education & Sports University,
Plot/Khasara No. 148/31c, Street No. 148/31c,
Melakotaiyur Village, Vandalur Post,
Chengalpattu Taluk, Chennai City,
Kanchipuram District-600048,
Tamilnadu

Copy to:

1. The Secretary, Dept. of Elementary Education and Literacy, Ministry of Human Resource Development, Govt. of India, ShastriBhavan, New Delhi – 110 001..
2. The Education Secretary, In-charge of Higher Education, Government of Tamilnadu.
3. The Director (Collegiate Education), Department of Government Exams, DPI Campus, College Road, Chennai, Tamilnadu.
4. The Registrar, Tamilnadu Teacher Education University, Lady Willingdon College Campus, Kamarajar Salai, Chennai – 600005, Tamilnadu.
5. The Correspondent, , **The Registrar Tamilnadu Physical Education & Sports University, Plot No. 148/31c, Street No. 148/31c, Melakotaiyur Village, Vandalur Post, Chengalpattu Taluk, Chennai City, Kanchipuram District-600048, Tamilnadu**
6. The Under Secretary (CS), National Council for Teacher Education, Hans Bhawan Wing-II, Bahadurshah Zafar Marg, New Delhi – 110 002.
7. Office Order file/institution file.

राष्ट्रीय अध्यापक शिक्षा परिषद
(भारत सरकार का एक विधिक संस्थान)
दक्षिण क्षेत्रीय समिति

National Council for Teacher Education
(A Statutory Body of the Government of India)
Southern Regional Committee

SRO/NCTE/SRCAPP2246/B.P.Ed/TN/2016-2017/ 85043 Date: 03/05/2016

TO BE PUBLISHED IN GAZETTE OF INDIA PART III SECTION 4
ORDER

WHEREAS, in terms of Section 14(1) of the NCTE Act, **Tamilnadu Physical Education and Sports University, Plot No. 148/31C, Melakottaiyur Village and Post, Thiruporur Taluk, Chennai City, Kanchipuram District-600127, Tamilnadu** has applied for grant of recognition to **Tamilnadu Physical Education and Sports University, Plot No. 148/31C, Melakottaiyur Village and Post, Thiruporur Taluk, Chennai City, Kanchipuram District, Tamilnadu** for **B.P.Ed** course online on **30.04.2015** for two years duration under section 14(1) of the NCTE Act, 1993 and hardcopy received by Southern Regional Committee of NCTE on **18.05.2015.**

AND WHEREAS, on scrutiny of the application submitted by the institution, the documents attached therewith, the affidavit submitted and the report received from VT and videography, and the certificates received from the university, the Committee is satisfied that the applicant fulfils the requirements under the provisions of NCTE Act, Rules and relevant Regulations including the Norms and Standards for the said teacher education programme such as instructional facilities, infrastructural facilities, financial resources, etc., for running the programme.

NOW THEREFORE, in exercise of the powers vested under Section14(3) (a) of the NCTE Act, 1993, the Regional Committee, NCTE hereby grants recognition to **Tamilnadu Physical Education and Sports University, Plot No. 148/31C, Melakottaiyur Village and Post, Thiruporur Taluk, Chennai City, Kanchipuram District, Tamilnadu** for conducting **B.P.Ed** programme of **two years** duration with an annual intake of one basic unit of **100** (two sections of 50 students each) from the academic sessions **2016-2017** under Clause 7(16) of NCTE (Recognition Norms & Procedure) Regulations, 2014 subject to fulfillment of the following conditions:-

I. The Endowment fund of Rs.5 lakhs and Reserve fund of Rs.7 lakhs kept in joint account with Regional Director of NCTE should be maintained perpetually. Loan raising against or mortgaging of FDR's shall not be done.

II. The institution shall comply with the various other norms and standards prescribed in the NCTE regulations, as amended from time to time.

III. The institution shall make admission only after it obtains affiliation from the examining body in terms of clause 8(10) of the NCTE (Recognition Norms & Procedure) Regulations 2014.

IV. The institution shall ensure that the required number of academic staff duly approved by affiliating body for conducting the course should always remain in position.

2. Further, the recognition is subject to fulfillment of all such other requirements as may be prescribed by other regulatory bodies like UGC, affiliating University / Body. the State Government etc, as applicable

3. The institution shall submit to the Regional Committee a Self- Appraisal Report at the end of each academic year along with the statement of annual accounts duly audited by a Chartered Accountant.

4. The institutions shall maintain its Website with hyperlink to the Council and the Southern Regional Committee, covering, inter –alia , the details of the institution, its location, name of the programme applied for with intake; availability of physical infrastructure, such as land, building, office, classrooms, and other facilities or amenities; instructional facilities, such as laboratory and library and the particulars of their proposed teaching faculty and non-teaching staff with photographs, for information of all concerned. The information with regard to the following shall also be made available on the website namely:-

a. Sanctioned programmes along with annual intake in the institution;

Cont..2

ne : 080-23185669, 23185670, 23185672 Fax : 080-23185673
il : scrc@ncte-india.org Website : http://www.srcncte.in
Nagarabhavi, Jnana Bharathi Campus Road,
Opp. National Law School, Bangalore - 560 072.

b. Name of faculty and staff in full as mentioned in school certificate along with their qualifications, scale of pay and photograph.
c. Name of faculty members who left or joined during the last, quarter:
d. Names of Students admitted during the current session along with qualification, Percentage of marks in the qualifying examination and in the entrance test, if any, date of admission, etc.;
e. Fee charged from students;
f. Available infrastructural facilities;
g. Facilities added during the last quarter;
h. Number of books in the library, journals subscribed to and additions, if any, in the last quarter;
i. The affidavit with enclosure submitted along with application.
j. The institution shall be free to post additional relevant information. if it so desires.
k. Any false or incomplete information on website shall render the institution liable for withdrawal of recognition.

5. The institution shall adhere to the mandatory disclosure in the prescribed format and display up-to-date information on its official website.

6. The institution shall make available list of students admitted on its official website.

If the institution Contravenes any of the above conditions or the provision of the NCTE Act, Rules, Regulations and orders made of issued there under, the institution will render itself vulnerable to adverse action including withdrawal of recognition by the regional committee under the provisions of Section17(1) of the NCTE Act.

Also order that a copy of this order be published in the official Gazette.

By Order,

P Revathi Reddy

(P.Revathi Reddy)
Regional Director

The Manager
Government of India Press
Department of Publications (Gazette Section)
Civil Lines, New Delhi – 110054.

To:

The Registrar,
Tamilnadu Physical Education and Sports University,
Plot No. 148/31C, Melakottaiyur Village and Post,
Thiruporur Taluk, Chennai City,
Kanchipuram District,
Tamilnadu.

Copy To:

1. The Secretary, Dept. of Elementary Education and Literacy, Ministry of Human Resource Development, Govt. of India, ShastriBhavan, New Delhi – 110 001.
2. The Education Secretary, Incharge of Higher Education, Government of Tamilnadu, Chennai, TN.
3. The Director, (Collegiate Education) Department of Government Exams, DPI Campus, College Road, Chennai, Tamilnadu.
4. The Registrar, **Tamilnadu Physical Education and Sports University, Plot No. 148/31C, Melakottaiyur Village and Post, Thiruporur Taluk, Chennai City, Kanchipuram District-600127, Tamilnadu.**
5. The Under Secretary (CS), National Council for Teacher Education, Hans Bhawan Wing-II, Bahadurshah Zafar Marg, New Delhi – 110 002.
6. Office Order file.

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

Chennai – 600127

The NCTE is not issuing approval letter every year, at the time of starting the programme only it issues the approval letter.

The approval letter for MPEd and BPEd programme are given above.

ALL PROGRAMMES OFFERED BY THE UNIVERSITY (REGULAR COURSES)

DEPARTMENT OF PHYSICAL EDUCATION

S.NO.	COURSES	DURATION	ELIGIBILITY
1	Ph.D., in Physical Education	With M.Phil (Regular 2-years / Part time 3-years) Without M.Phil (Regular 3-years / Part time 4-years)	MPEd / MPES / MPE
2	M.Phil in Physical Education	1 Year	MPEd or its Equivalent Degree Approved by the Syndicate of TNPESU
3	Master of Physical Education (M.P.Ed.,)	2 Years	10+2+3 system of Education and BPEd., Approved by the Syndicate of TNPESU and minimum of Inter College level sports participation
4	Bachelor of Physical Education (B.P.Ed.,)	2 Years	Any degree approved by the syndicate of TNPESU with 10+2+3 system of education and minimum Inter School level sports participation

DEPARTMENT OF YOGA

S.NO.	COURSES	DURATION	ELIGIBILITY
1	Ph.D., in Yoga	With M.Phil (Regular 2-yrs / Part time – 3yrs) Without M.Phil (Regular -3 yrs / Part time -4yrs)	M.Sc (Yoga) / MA (Yoga)
2	M.Phil., in Yoga	1 Year	M.Sc (Yoga) & Related courses
3	M.Sc., Yoga	2 Years	Any Degree Recognized by the Syndicate of TNPESU
4	M.Sc., Yoga Therapy	2 Years	Any UG Degree in Yoga related courses/ Any UG degree with Diploma or PG Diploma in Yoga or MBBS or BDS or Degree in Nursing or BPT or MPT or BYNS or BHMS or BAMS or BUMS or related courses

DEPARTMENT OF EXERCISE PHYSIOLOGY & BIOMECHANICS			
S.NO.	**COURSES**	**DURATION**	**ELIGIBILITY**
1	**Ph.D., Exercise Physiology and Nutrition**	**With M.Phil (Regular 2-yrs / Part time – 3yrs)** **Without M.Phil (Regular -3 yrs / Part time -4yrs)**	**MSc (Exercise Physiology and Nutrition)**
2	**M.Phil., Exercise Physiology and Nutrition**	**1 Year**	**M.Sc. Exercise Physiology and Nutrition**
3	**M.Sc., Exercise Physiology and Nutrition**	**2 Years**	**Any Degree***
4	**B.Sc. Exercise Physiology and Nutrition**	**3 Years**	**A Pass in H.Sc., or its Equivalent Examinations (Group I or Group II) Recognized by the Syndicate of TNPESU**
5	**PhD in Sports Biomechanics and Kinesiology**	**With M.Phil (Regular 2-yrs / Part time – 3yrs)** **Without M.Phil (Regular -3 yrs / Part time -4yrs)**	**M.Sc (Sports Biomechanics and Kinesiology)**
6	**M.Phil in Sports Biomechanics and Kinesiology**	**1 Year**	**M.Sc. Sports Biomechanics and Kinesiology**
7	**M.Sc. Sports Biomechanics and Kinesiology**	**2 Years**	**Any Degree* Recognized by the Syndicate of TNPESU**
8	**B.Sc. Sports Biomechanics and Kinesiology**	**3 Years**	**A Pass in H.Sc., with Maths/ Physics / Biology / Computer Science / Chemistry / Statistics or its Equivalent Examinations Recognized by the Syndicate of TNPESU**

DEPARTMENT OF SPORTS MANAGEMENT & SPORTS PSYCHOLOGY & SOCIOLOGY			
S.NO.	**COURSES**	**DURATION**	**ELIGIBILITY**
1	Ph.D in Sports Management	With M.Phil(Regular 2-yrs / Part time – 3yrs) Without M.Phil (Regular -3 yrs / Part time -4yrs)	M.B.A. Sports Management
2	M.Phil in Sports Management	1 Year	M.B.A. Sports Management or M.B.A. General
3	M.B.A. Sports Management	2 Years	Any Degree Recognized by the Syndicate of TNPESU
4	Ph.D in Sports Psychology/ Sociology	With M.Phil (Regular 2-yrs / Part time – 3yrs) Without M.Phil (Regular -3 yrs / Part time -4yrs)	M.Sc. Sports Psychology / Sociology*
5	M.Phil in Sports Psychology and Sociology	1 Year	M.Sc. Sports Psychology and Sociology
6	M.Sc. Sports Psychology and Sociology	2 Years	Any Degree Recognized by the Syndicate of TNPESU
7	M.Sc. Psychology	2 Years	Any Degree Recognized by the Syndicate of TNPESU
8	M.A. Sociology	2 Years	Any Degree Recognized by the Syndicate of TNPESU
9	M.Sc., Sports Psychology	2 Years	Any Degree
10	M.Phil., Sports Psychology	1 Year	Master's Degree in Sports Psychology
11	M.Phil., Sociology	1 Year	Master's Degree in Sociology
12	M.Phil., Psychology	1 Year	Master's Degree in Psychology

DEPARTMENT OF ADVANCED SPORTS TRAINING & TECHNOLOGY			
S.NO.	**COURSES**	**DURATION**	**ELIGIBILITY**
1	Ph.D in Sports Coaching	With M.Phil (Regular 2-yrs / Part time – 3yrs) Without M.Phil (Regular -3 yrs / Part time -4yrs)	M.Sc. (Sports Coaching) / M.S. (Sports Coaching)
2	M.Phil., in Sports Coaching	1 Year	M.Sc. Sports Coaching
3	MSc., in Sports Coaching	2 Years	Any Degree Recognized by the Syndicate of TNPESU with Diploma / P.G. Diploma in Sports Coaching
4	B.Sc. Sports Coaching	3 Years	+2 pass or its equivalent recognized by the syndicate of TNPESU with sports proficiency of minimum participation at school district competitions
5	P.G. Diploma in Sports Coaching (Athletics, Basketball, Football, Hockey and Volleyball)	1 Year	Any Degree with three times Representation in Senior or Junior nationals / Inter University/Inter Services / Inter Department Tournaments (or) Any Degree and B.P.Ed / M.P.Ed., with two Times Representation in Senior or Junior Nationals / Inter University / Inter Services / Inter Department Tournaments.
6	Ph.D in Sports Technology	Regular 2-yrs / Part time –3yrs	M.Tech (Sports Technology)
7	M.Tech in Sports Technology	2 Years	B.E., / B.Tech., Equivalent Degree (Any Discipline)

DEPARTMENT OF ADVANCED SPORTS TRAINING & TECHNOLOGY			
S.NO.	**COURSES**	**DURATION**	**ELIGIBILITY**
1	Ph.D in Sports Coaching	With M.Phil (Regular 2-yrs / Part time – 3yrs) Without M.Phil (Regular -3 yrs / Part time -4yrs)	M.Sc. (Sports Coaching) / M.S. (Sports Coaching)
2	M.Phil., in Sports Coaching	1 Year	M.Sc. Sports Coaching
3	MSc., in Sports Coaching	2 Years	Any Degree Recognized by the Syndicate of TNPESU with Diploma / P.G. Diploma in Sports Coaching
4	B.Sc. Sports Coaching	3 Years	+2 pass or its equivalent recognized by the syndicate of TNPESU with sports proficiency of minimum participation at school district competitions
5	P.G. Diploma in Sports Coaching (Athletics, Basketball, Football, Hockey and Volleyball)	1 Year	Any Degree with three times Representation in Senior or Junior nationals / Inter University/Inter Services / Inter Department Tournaments (or) Any Degree and B.P.Ed / M.P.Ed., with two Times Representation in Senior or Junior Nationals / Inter University / Inter Services / Inter Department Tournaments.
6	Ph.D in Sports Technology	Regular 2-yrs / Part time –3yrs	M.Tech (Sports Technology)
7	M.Tech in Sports Technology	2 Years	B.E., / B.Tech., Equivalent Degree (Any Discipline)

Tamil Nadu Physical Education and Sports University Chennai 600 127.

Registrar
Tamilnadu Physical Education
and
Sports University
Chennai

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY

CHENNAI – 600 127

BACHELOR OF PHYSICAL EDUCATION AND SPORTS (B.P.E.S)

(THREE YEARS)

REGULATIONS AND SYLLABUS

WITH EFFECT FROM THE ACADEMIC YEAR 2016-2017

TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY
Chennai- 600 127

BACHELOR OF PHYSICAL EDUCATION AND SPORTS (B.P.E.S)

(THREE YEARS)

REGULATIONS

1. Eligibility for Admission to the Course

a. Applicants should have passed the +2 examination in 10 + 2 pattern of the Government of Tamil Nadu or any other equivalent examination recognized by the Government of Tamil Nadu or approved by the Tamil Nadu Physical Education and Sports University.

b. School representation in any game or sport is mandatory for the applicants.

c. The candidates should not have completed 21 years of age as on 1st July. However, relaxation of 3 years shall be given for SC/ST candidates.

d. He/ she must be medically fit and free from any deformities students will undergo medical examination at the time of admission.

e. The married women should not be in family way during the course of study. If it is violated, they will not be permitted to continue the course.

f. Admission shall be made on the basis of ranking for a total of 150 marks as detailed below.

1.	Qualifying Examination	25 marks
2.	Participation in Games & Sports	25 marks
3.	Games Skill test	50 marks
4.	Track and Field Skill test	50 marks
	a) 100 m – 20 Marks	
	b) Shot-put – 15 Marks	
	c) Long Jump – 15 Marks	
	Total	150 Marks

Note: Marks obtained in Qualifying Examination shall be converted to a maximum of 25 marks. For example if a candidate secured 800 marks out of 1200. His / Her marks for qualifying examinations is [800 / 1200] x 25 = **16.67marks.**

2. Duration of the Course

The course for the degree of Bachelor of Physical Education shall extend over a period of three academic years for six semesters: The total working days for a semester shall not be less than 100 working days excluding examination days. The curriculum and syllabi for the course shall be as prescribed from time to time.

3. Attendance

1) A Student must have 80% attendance in theory and practical classes to appear for university examination.
2) A maximum of 10 % of relaxation shall be permitted for the medical reasons . He / she must produce a reliable Medical Certificate with prior permission and following the due procedures.
3) In other cases, if a student attained less than 80% of attendance he/she should **REDO** the semester.

4.. Continuous Assessment for Part I , II & III – Theory Papers.

a. Written Examination - 20 Marks :

I. Continuous assessment shall be graded by the concerned subject teachers. Three tests will be conducted for each paper.
II. Each test carries a maximum of 20 marks and the average of best two tests shall be considered.
III. However, in the case of students who miss the tests for any valid reasons with prior permission from the Head of the Department /Principal of the College (Viz. Participating in Sports and Games competitions), he/she may be granted special permission to write the tests before the commencement of semester examination.

b. Assignment / Seminar - 3 Marks:

The teachers shall give assignments to the students and 3 marks are allotted for assignments. This may be of any accepted method such as Seminar, Project, Written materials, Record etc.

c. Attendance - 2 Marks:

Regularity in attending theory and Practical classes shall be graded as per the percentage of attendance.

Percentage of Attendance	Marks
96- 100	2
91-95	1.5
86-90	1
81- 85	0.5

Method of Calculation :

First Test - 20 Marks.

Second Test - 20 Marks.

Third Test - 20 Marks.

Average of the best two tests = 20 Marks

Assignment = 03 Marks

Attendance = 02 Marks.

Total = 25 Marks .

d. Pre-Semester/ Model Examination (75 Marks)

i. Pre-Semester/ Model examination shall be held at the end of each semester before the final semester examination covering all the portions and 75 marks are awarded for this examination.

ii. Each paper carries 75 marks and this will be converted into 25 marks.

iii. The Continuous assessment marks plus Pre semester/Model Examination divided by two shall be the final internal mark for 25.

5. Requirement for Passing

No candidate shall be eligible for the award of the B.P.E.S degree unless he / she has passed the examinations in Part I, II, III, IV and V .

VII. Grading System

To pass in an examination a student has to score a minimum of 50% marks in each paper – Theory, Practical.and Village Placement Progamme.

Minimum Passing - 50% Marks.

50 to 59% - Second Class.

60% and above - First Class.

A Candidate shall be declared to have passed with distinction if he/she obtains 75% or more of the aggregate marks at his/her first appearance.

Inter University Sports Participation and Special Permission for University Examination

a) University Examination – Special Permission

A student representing the University / State / Nation in a game or sport and misses the University Semester Examination will appear for a special supplementary University Examination as stipulated by the University.

b) Internal Test – Special Permission

In case, a student misses to appear for an internal test due to participation in inter collegiate/ university sports competition / any such programme of the University with prior permission from the concerned head of the faculty / department, he / she may be permitted to appear for a special test / tests before the pre-semester examination.

Such a student appearing for a special supplementary University Examination shall not be considered as an arrear / arrears in a paper / papers and shall not be deprived of ***RANK in the University***.

A student who fails in any one or more papers in the semester examination will be permitted to rewrite the paper or papers in the subsequent semester examination.

To quality for the degree, supplementary candidates are required to pass all the papers prescribed for the course within a period of three years after he/she complete the course. Beyond this period, the candidate shall follow the current syllabi for the examination if applicable. Examination fee will be collected normally according to the rules and regulations of the university. A Separate examination fee will be collected in this case.

Students who fail in a paper/papers are permitted to apply for recounting or re valuation in examination section of the University within the prescribed period with specified fee.

Appeal against the results of the semester examination shall be made to the controller of examinations by the student concerned through the Head of the Department/ Principal of the affiliated college within 15 days of the publication of results by paying retotalling /revaluation fee.

SYLLABUS

PART I – Language: Tamil

Part II - English

Part III – Major and Allied

Part IV – Practical

Part V - Extension Activities: Village Placement Programme

FIRST YEAR		
I SEMESTER		
		SUBJECT
PART	**PAPER**	
I	**I**	Tamil – I
II	**II**	English –I
III	**III**	General Knowledge and History of Physical Education
	IV	Rules of Games and Sports-Part I (Basketball, Badminton, Kabaddi, Softball)
	II SEMESTER	
I	**V**	Tamil – II
II	**VI**	English –II
III	**VII**	Anatomy and Physiology
	VIII	Rules of Games and Sports-Part II (Volleyball, Table Tennis, Swimming, Throwball, Kho-Kho)
	SECOND YEAR	
	III SEMESTER	
I	**IX**	Tamil – III
II	**X**	English –III
III	**XI**	Health and Safety Education
	XII	Rules of Games and Sports-Part III (Track and Field and Cross Country)

	IV SEMESTER	
I	**XIII**	Tamil – IV
II	**XIV**	English –IV
III	**XV**	Methods in Physical Education
	XVI	Rules of Games and Sports-Part IV (Tennis, Tennikoit, Ball Badminton, Football, Gymnastics)
	THIRD YEAR	
	V SEMESTER	
III	**XVII**	Science of Yoga
	XVIII	Care and Prevention of Sports Trauma
	XIX	Kinesiology and Biomechanics
	XX	Educational Psychology and Sports Journalism
	VI SEMESTER	
III	**XXI**	Exercise Physiology and Nutrition
	XXII	Test, Measurement and Evaluation
	XXIII	Scientific Principles of Sports Training
	XXIV	Rules of Games and Sports-Part V (Hockey, Handball, Cricket, Netball)

SCHEME OF EXAMINATION

B.P.E.S I YEAR

I SEMESTER

PART	Paper	Subject	Internal	External	Total
I	I	Tamil – I	**25**	**75**	**100**
II	II	English –I	**25**	**75**	**100**
III	III	General Knowledge and History of Physical Education	**25**	**75**	**100**
	IV	Rules of Games and Sports-Part I (Basketball, Badminton, Kabaddi, Softball)	**25**	**75**	**100**
	Total Marks				**400**

II SEMESTER

PART	Paper	Subject	Internal	External	Total
I	V	Tamil – II	**25**	**75**	**100**
II	VI	English –II	**25**	**75**	**100**
III	VII	Anatomy and Physiology	**25**	**75**	**100**
	VIII	Rules of Games and Sports-Part II (Volleyball, Table Tennis, Swimming, Throwball, Kho-Kho)	**25**	**75**	**100**
	Total Marks				**400**

I Semester + II Semester = Total 400 + 400 = 800 Marks

B.P.E. S. PRACTICALS

PART - IV : PRACTICAL (Internal)

I SEMESTER

Game / Activity: Internal Marks	Internal Max. Marks
1. Calisthenics & Minor Games	50
2. Drill & Marching	50
3. Basketball & Softball	50
4. Badminton & Kabaddi	50
Total	**200**

PART IV PRACTICALS

II SEMESTER

Game / Activity: Internal Assessment	nternal Marks
1. Dands & Baiteks	50
2. Light Apparatusc & Lezium	50
3. Kho-Kho & Swimming	50
4. Volleyball & Throwball	50
Total	**200**

B.P.E.S II YEAR

III SEMESTER

PART	Paper	Subject	Internal	External	Total
I	IX	Tamil – III	**25**	**75**	**100**
II	X	English –III	**25**	**75**	**100**
III	XI	Health and Safety Education	**25**	**75**	**100**
	XII	Rules of Games and Sports-Part III (Track and Field and Cross Country)	**25**	**75**	**100**
	Total Marks				**400**

IV SEMESTER

PART	Paper	Subject	Internal	External	Total
I	XIII	Tamil – IV	**25**	**75**	**100**
II	XIV	English –IV	**25**	**75**	**100**
III	XV	Methods in Physical Education	**25**	**75**	**100**
	XVI	Rules of Games and Sports-Part IV (Tennis, Ball Badminton, Football, Gymnastics)	**25**	**75**	**100**
	Total Marks				**400**

III Semester + IV Semester = Total 400 + 400 = 800 Marks

PART IV PRACTICALS

III SEMESTER

Game / Activity: Internal Assessment	Internal Marks
Track and Field Activity	
1. Short, Middle, Long Distance Running & Relay Races	25
2. Long Jump	25
3. Triple Jump	25
4. Shot put & Hammer	25
5. Discus	25
6. Javelin	25
7. High Jump & Pole Vault	25
8. Hurdles	25
Total	**200**

PART IV PRACTICALS

IV SEMESTER

Game / Activity: Internal Assessment	
1. Marking (Track & Field) [Marking manual for Track & Field events must be submitted to the concerned staff]	50
2. Yoga, Gymnastics, Pyramid Malkhamb, Martial Arts	50
3. Ball Badminton Tennis, Tennikoit	50
4. Football	50
Total	**200**
University External Practical Examination	
Track and Field	
Internal	**100**
External	**100**
Total	**200**

B.P.E.S. III YEAR

V SEMESTER

Part	Paper	Subject	Internal	External	Total
III	XVII	Science of Yoga	**25**	**75**	**100**
	XVIII	Care and Prevention of Sports Trauma	**25**	**75**	**100**
	XIX	Kinesiology and Biomechanics	**25**	**75**	**100**
	XX	Educational Psychology and Sports Journalism	**25**	**75**	**100**
	Total Marks				**400**

VI SEMESTER

Part	Paper	Subject	Internal	External	Total
III	XXI	Exercise Physiology and Nutrition	**25**	**75**	**100**
	XXII	Test, Measurement and Evaluation	**25**	**75**	**100**
	XXIII	Scientific Principles of Sports Training	**25**	**75**	**100**
	XXIV	Rules of Games and Sports-Part V (Hockey, Handball, Cricket, Netball)	**25**	**75**	**100**
	Total Marks				**400**

V Semester + VI Semester = Total 400 + 400 = 800 Marks

PART IV - PRACTICALS

V Semester : Internal Assessment	Marks
1. Marking (Ground) [Marking manual for Sports & Games must be submitted to the concern staff]	50
2. Training Methods I: Conditioning Exercises: General and Specific. Training Methods: Weight Training (Free Weights and Machine Weights), Circuit Training, Plyometrics.	50
3. Hockey	50
4. Handball, Netball & Table Tennis	50
Total	**200**

VI Semester: Internal Assessment	Marks
1. Bharathiam & Aerobics	50
2. Test and Measurement	50
3. Training Methods II: Interval Training- Fartlek Training - Swiss ball Training – Medicine Ball Training – Core Board Training, Cross Training.	50
4. Cricket	50
Total	**200**
University External Practical Examination	
Game of Specialization	
Internal	**100**
External	**100**
Total	**200**

PART-V

Extension Activities

Village Placement Programme

In the Second year of the B.P.E.S course for the Village Placement programme the students required to visit of neighbouring village at least for a minimum period of five days and to organise the programmes such as

1. Physical Education/ Physical Exercise related programmes
2. Awareness Programmes related to health and fitness
3. Cleaning, creation of place for physical activities, sports and games.
4. Survey of related health and fitness

The Village Placement programme record with details of programmes organised and photo graphs should be submitted at the time of the Vi Semester B.P.E .S University practical examinations for evaluation.

Village Placement Programme

Internal 100 Marks

External 100 Marks

Total 200 Marks

The Village Placement programme record with details of programmes organised and photo graphs should be submitted for evaluation.

SUMMARY OF MARKS

Part	Category		Marks	Marks
I	Tamil	Internal (4 Papers * 25)	100	400
		University External Theory Examination (4 Paper *75)	300	
II	English	Internal (4 Papers * 25)	100	400
		University External Theory Examination (4 Paper *75)	300	
IIII	Major and Allied	Internal (16 Papers * 25)	400	`1600
		University External Theory Examination (16 Papers * 75)	1200	
IV	Practical	Internal (Only) (6 Semester * 200)	1200	1200
		University External Examination (Internal) (2 Practical * 100)	200	400
		External (2 Practical * 100)	200	
IV	Extension Activities: Village Placement Programme	University External Practical Examination Internal	100	200
		External	100	
			Total	4200

Semester - I

PAPER I

TAMIL – I

PART – I TAMIL

முதலாண்டு முதல் பருவம்:

அலகு – 1

(அ) பாரதியார்:

காணி நிலம் வேண்டும்

நல்லதோர் வீணை

(ஆ) சுரதா:

சிக்கனம்

அலகு – 2

புதுமைப்பித்தன் சிறுகதைகள்

1. கடவுளும் கந்தசாமிப் பிள்ளையும்
2. சாப விமோசனம்
3. பொன்னகரம்

அலகு – 3 (உரைநடை)

விளையாட்டுக்களின் தோற்றமும் வளர்ச்சியும்

விளையாட்டு வரையறை - விளையாட்டின் தோற்றம் - தமிழர் வாழ்வில் விளையாட்டு - விளையாட்டு வகை தொகை - விளையாட்டுக் கொள்கைகள்.

அலகு - 4 மொழிப் பயிற்சி

1. பொருந்திய சொல் தருதல்
2. மரபுத் தொடர்கள்
3. கலைச் சொற்கள

அலகு - 5 தமிழ் இலக்கிய வரலாறு

1. நாட்டுப்புற இலக்கிய வரலாறுஇ நாட்டுப்புறப் பாடல்கள், நாட்டுப்புறக் கதைகள்,
நாட்டுப்புறக் கதைப் பாடல்கள், பழமொழிகள், விடுகதைகள்

2. உரைநடை இலக்கிய வரலாறுஇ சிறுகதைகள், புதினங்கள் தோற்றமும் வளர்ச்சியும்

3. கவிதை இலக்கிய வரலாறு
மரபுக் கவிதைகள், புதுக் கவிதைகள் தோற்றமும் வளர்ச்சியும்.

4. நாடக இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்

துணை நூற்பட்டியல்

1. பேரா.எம்மார் அடைக்கலசாமி,(2000) தமிழ் இலக்கிய வரலாறு ,ராசி பதிப்பகம்,சென்னை-73.
2. இமலையரசி, (2013), தமிழ் இலக்கியங்களில் விளையாட்டுக் கூறுகள் - பாவை பதிப்பகம்,மதுரை-1.
3. செ. பரமசிவம்,(2000),நற்றமிழ் இலக்கணம் ,பட்டுப் பதிப்பகம்,சென்னை.40.
4. சங்க இலக்கிய நூல்கள் - கழக வெளியீடு.

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PAPER II

ENGLISH - I

SEMESTER- I-

ENGLISH-I BASIC LANGUAGE SKILLS

LISTENING & SPEAKING:

UNIT-I

a) Greeting people & responding to greetings.
b) Introducing oneself & other people.
c) Asking for & giving personal details (name, occupation... etc)

UNIT-II

a) Using the telephone - exchanging information & taking messages
b) Describing a visual clipping

WRITING:

UNIT-III

a) Completing forms with personal details - bio-data & curriculum vitae.
b) Paragraph writing - converting note making to paragraph
c) Interpreting advertisements

UNIT-IV

a) Grammar in usage
b) Descriptive writing - describing a scene/ a person/ a situation
c) Translation - 50 words.

UNIT-V

a) Cabuliwallah - Rabindranath Tagore
b) The Last Leaf - O.Henry
c) Upper Division Love- Manohar Malgonkar.

Reference:

1. The last leaf & other stories by Anand Kumar Raju (Blackie books).

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Paper III

GENERAL KNOWLEDGE AND HISTORY OF PHYSICAL EDUCATION

GENERAL KNOWLEDGE

UNIT I ABBREVIATIONS &TERMINOLOGIES

I. Abbreviations (in sports) : AIU, AAFI, IAAF, IAF, AFC, AICS, AILTA, AIWHA, BAI, BCCI, FISU, IHF, IOA, IOC, ICC, FIBA, FIFA, FIVB, NCC, NSO, NSC
II. Sports Terminology : Archery, Billiards, Bowling, Equestrian, Fencing, Golf, Polo, Rugby, Skiing, Snooker, Yachting.

UNIT II AWARDS, TROPHIES AND SCHEMES

Honours and Awards. Outstanding National & International Personalities in various Sports & Games. Cups and Trophies - India and International . Functions and Schemes of Sports Authority of India , Sports Development Authority of Tamilnadu, Tamil Nadu Physical Education and Sports University.

HISTORY OF PHYSICAL EDUCATION

UNIT III PHYSICAL EDUCATION IN ANCIENT INDIA

History of Physical Education in Vedic period, Epic period, Buddhist period. Development of Indigenous activities - Yogic system of physical exercise.

UNIT IV PHYSICAL EDUCATION IN OTHER COUNTRIES and DEVELOPMENT OF PHYSICAL EDUCATION

Physical Education in Ancient Greece, Rome and European countries. Contributions to the growth of Physical Education by leaders and movements: Germany: Johann Bernhard Basedow, Johann Christoph Friedrich GutsMuths, Adolph Spiess, Role of Philanthropinum and Turnverein Movement. Sweden: Per Henrik Ling and Swedish medical gymnastics. Denmark: Franz Nachtegall , Niels Bukh.

UNIT V - PHYSICAL EDUCATION TEACHER TRAINING AND SPORTS PROMOTION

YMCA and its contribution: Contribution of H.C.Buck and Contribution of Mary Crowe Buck. Teacher Training Institutions in Physical Education. Indian Olympic Association, National Sports Federations and Associations. Youth Welfare Programmes: N.C.C., N.F.C., N.D.S., N.S.O., Scouting and Guiding, Youth hostels, Youth festivals, Camping Mountaineering. National Physical Fitness Programme

REFERENCES :

Competitions Success Review Year Book. (2014) New Delhi : Competition Review Pvt. Ltd.

General Knowledge Digest (2014), New Delhi: Wheelers Publishing.

Bucher, A.C(1984). Foundations of physical Education, St.Louis. The L.V.Mosby Co.,

Chelliah, S.N.(1989) Udarkalvi Enral Enna? Chennai: RajmohanPathippagam,.

Khan, E.A. (2000) History of Physical Education, Patma, Scientific Books Co., .

Knapp, C. & Hagman E.P. (1949)Teaching Methods-for Physical Education, New York: McGraw Hill Book Co. Inc.

Rajagopalan, K.A.(1969) Brief History of Physical Education in India. Delhi: Army Publishers

Thirunarayanan, C. & Hariharan S. (1969) Methods in Physical Education, Karaikudi.

Thomas, J.P. (1980) Physical Education Lesson: Chennai: Gnanodaya Press.

Thirunarayana. C (1967). Analytical History of Physical Education. Karaikudi.

PAPER IV

RULES OF GAMES AND SPORTS -PART I

(BASKETBALL, BADMINTON, KABADDI, SOFTBALL)

UNIT I - PREREQUISITES OF AN OFFICIAL

Qualification and Qualities of officials, Philosophy of Officiating in the above listed four games.

UNIT II – HISTORY AND ORGANIZATIONAL SETUP

History and Development, International, national level organisational setup, Major Tournaments and Trophies in the above listed four games.

UNIT III - PRINCIPLES AND MECHANISM OF OFFICIATING

General principles of officiating - Duties and powers of officials - Mechanism of officiating in the above listed four games.

UNIT IV - DIMENSIONS OF PLAY FIELD

Measurements of play fields of the above listed four games.

UNIT V - RULES AND THEIR INTERPRETATIONS

Rules of the following games and their in the above listed four games.

REFERENCES :

Anand, R.L. (1987) Play Field Manual Patiala : NISPublication.

Authors Guide (2014) FIBA Official Basket Rules, Munich, Germany.

Bonder, J.B. (1984) How to be a Successful Coach. New York, Prentice Hall Inc.

Buck .H.C (2000)Rules of Games and sports, New Delhi: YMCA Publishing House, Masse Hall,

Bunn, J.W. (1951)The Basketball Coaches' Guide to Success, Prentice Hall,

Bunn, J. W. (1951) The Art of officiating Sports, Prentice Hall, Englewood Cliff.

Chelliah, S.N. (1984), Vilayattu Vithi Muraihal, Chennai : Raj Mohan Pathipagam.

Semester - II

PAPER V - TAMIL – II

அலகு : 1
1. நந்திக் கலம்பகம்
2. தமிழ் விடு தூது

அலகு : 2
1. திருக்குற்றாலக் குறவஞ்சி (குறத்தி மலைவளம் கூறுதல்)
2. முக்கூடல் பள்ளு (நாட்டு வளம்)

அலகு : 3. தமிழரின் வீர விளையாட்டுக்கள்

ஏறு தழுவல், மற்போர், விற்போர், வேட்டை, சிலம்பம், களரி.

அலகு : 4 மொழிப் பயிற்சி
1.பிழை நீக்கம்
2.விளம்பர வாசகங்களை உருவாக்குதல்
3.நேர்காணல்.

அலகு : 5 தமிழ் இலக்கிய வரலாறு
அ. சிற்றிலக்கிய வரலாறு
ஆ. கிருத்துவ இலக்கிய வரலாறு
இ. இசுலாமிய இலக்கிய வரலாறு
ஈ. காப்பிய இலக்கிய வரலாறு

துணை நூற்பட்டியல்

1. பேரா.எம்மார் அடைக்கலசாமி,(2000) தமிழ் இலக்கிய வரலாறு ,ராசி பதிப்பகம்,சென்னை-73.
2. த.மலையரசி, (2013), தமிழ் இலக்கியங்களில் விளையாட்டுக் கூறுகள் - பாவை பதிப்பகம்,மதுரை-1.
3. சொ. பரமசிவம்,(2000),நற்றமிழ் இலக்கணம் ,பட்டுப் பதிப்பகம்,சென்னை.40.
4. சங்க இலக்கிய நூல்கள் - கழக வெளியீடு.

PAPER VI - ENGLISH- II

SEMESTER - II

ENGLISH - II DEVELOPING THE LANGUAGE SKILLS

LISTENING & SPEAKING

UNIT-I

a) Asking for & giving permission

b) Inviting a person - accepting / declining.

WRITING

UNIT-II

a) Grammar in usage

b) Translation - idioms & phrases

c) Filling up forms - Bank Chalans/ Pay in Slips / Demands Draft, Railway Reservation / Cancellation.

UNIT-III

a) Welcoming a foreign visitor & describing region & country

b) Letter writing

c) Descriptive writing - describing on event.

UNIT-IV

a) Ode to the best wind - P. B, Shelley

b) The Gift of India - Sarojini Naidu.

UNIT-V

a) The Man Who Could Work Miracles - H. G. Wells

b) The Verger - Somer Set Maugham.

Reference:

1) The Last Leaf & Other Stories by Anand Kumar Raju (Blackie Books)

2) The Silent Song - K.M.Tharakan (Macmillan)

PAPER VI

ANATOMY AND PHYSIOLOGY

UNIT I INTRODUCTION

Need and importance of anatomy and physiology for the students of physical education. Define Cell Tissue. Microscopic structure of the cell. Classification, Structure and functions of various types of tissues.

UNIT II MUSCULO SKELETAL SYSTEM

Skeletal systems: Names of the bones of upper and lower extremities - Classification of joints. Names of the major muscles and their actions.

UNIT III CARDIO RESPIRATORY SYSTEM

Blood: Functions of blood, Composition of blood, lymph and its functions. Cardiovascular system: Structure of the heart, Systematic, pulmonary, Coronary circulation. Definition of respiration,Structure and functions of the respiratory system, Mechanism for respiration, Lung volumes.

UNIT IV - NERVOUS SYSTEM

Structure and functions of Brain, Spinal cord reflex arc. Hormones and their roles.

UNIT V - DIGESTIVE SYSTEM

Structure and functions of alimentary canal - Accessory organs - liver, Pancreas, Gall bladder.

REFERENCES:

Chelliah, N. (1989)Dhekathai Therindu Kolvom, Chennai: Rajmohan Pathippagam.

Murugesh, N.(1990) Anatomy physiology and Health Education, Madurai: Sathiya Publishers,

Pearce, E.B. (1962) Anotomy and Physiology for Nurses, London: Faber and Faber Ltd.

Pearce, J. W. (1959) Anatomy for students and Teacher of Physical Education, ., London: Edward Arnold and Co.

Paper VIII

RULES OF GAMES AND SPORTS - PART II

(VOLLEYBALL, TABLE TENNIS, SWIMMING, THROWBALL AND KHO-KHO)

UNIT I - PREREQUISITES OF AN OFFICIAL

Qualification and Qualities of officials, Philosophy of Officiating in the above listed five games.

UNIT II – HISTORY AND ORGANIZATIONAL SETUP

History and Development, International, national level organisational setup, Major Tournaments and Trophies in the above listed five games.

UNIT III - PRINCIPLES AND MECHANISM OF OFFICIATING

General principles of officiating - Duties and powers of officials - Mechanism of officiating in the above listed f five games.

UNIT IV - DIMENSIONS OF PLAY FIELD

Measurements of play fields of the above listed five games.

UNIT V - RULES AND THEIR INTERPRETATIONS

Rules of the following games and their in the above listed five games.

REFERENCES:

Buck H.C. (2001)Rules of Games and sports, New Delhi: Y.M.C.A Publishing House

Then Lokesh(1995), Skills & Tactics-swimming, New Delhi: Sports Publication,.

Saggar S.K.(1994) Play better Volleyball, New Delhi: Kay Kay Printers.

Jain Deepak (2001) Teaching and Coaching Table Tennis, New Delhi: Khel Sathiya Kendra.

Semester - III

PAPER IX - TAMIL –III

இரண்டாம் ஆண்டு

மூன்றாம் பருவம்

அலகு : 1.

1.திருவாசகம் - மாணிக்க வாசகர்
(திருப்பாவை முதல் 5 செய்யுள்கள்)
2. நாலாயிரத் திவ்ய பிரபந்தம் - ஆண்டாள்
வாரணம் ஆயிரம் தொடங்கி 5 செய்யுள்கள்

அலகு : 2

கம்பராமாயணம்
(சுந்தர காண்டம் - ஊர் தேடு படலம் முதல் 74 செய்யுள்கள்)

அலகு : 3 சமுதாய நோக்கில் தமிழர் விளையாட்டுக்கள்-1
வாழ்க்கைக்கு பயன்படும் விளையாட்டு- விளையாட்டு நெறிமுறைகள்- விளையாடுவதற்கு ஏற்ற வசதிகள்- விளையாட்டு பொது- விளையாட்டில் ஆண்பெண் பாகுபாடு- விளையாட்டும் பெண்களும்.

அலகு : 4 மொழிப் பயிற்சி
1. வேலை வாய்ப்பு வேண்டி விண்ணப்பம் எழுதுதல்
2. கடிதம் எழுதுதல்
3. நேர்க்காணல்

அலகு : 5. தமிழ் இலக்கிய வரலாறு
அ. பல்லவர் கால பக்தி இலக்கிய வரலாறு
ஆ. பிற்காலச் சோழர் காலஇலக்கிய வரலாறு

துணை நூற்பட்டியல்

1. பேரா.எம்மார் அடைக்கலசாமி,(2000) தமிழ் இலக்கிய வரலாறு ,ராசி பதிப்பகம்,சென்னை-73.
2. த.மலையரசி, (2013), தமிழ் இலக்கியங்களில் விளையாட்டுக் கூறுகள் - பாவை பதிப்பகம்,மதுரை-1.
3. சொ. பரமசிவம்,(2000),நற்றமிழ் இலக்கணம் ,பட்டுப் பதிப்பகம்,சென்னை.40.
4. சங்க இலக்கிய நூல்கள் - கழக வெளியீடு

SEMESTER -III-

ENGLISH - III PROGRESSIVE LANGUAGE SKILLS

LISTENING & SPEAKING

UNIT -I

a) Discussing interests & leisure activities.
b) Checking in & out of a hotel.
c) Complaint & apology

WRITING:

UNIT-II

a) Comprehension.
b) Developing hints.

UNIT-III

a) Descriptive Writing - Comparing & Contrasting.
b) Translation - Sentences - English to Tamil

UNIT-IV

a) Where The Cross Is Made - O Eugene O'Neil
b) Pip & The Convict - Guy R. Williams

UNIT-V

a) The Dream Of The Message - A.P.J.Abdul kalam
b) Women of the Public Sphere - Dona.S.Sanzone.

REFERENCE:

1. A.K.Rama Bushanam "Human values through English Prose" - (Blackie)
2. Short Plays of Yesterday & Today - V.Sachidanandam.

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PAPER XI

HEALTH AND SAFETY EDUCATION

UNIT I INTRODUCTION

Health - Meaning, Definition and concepts - Factors influencing health - Health determinants, Heredity and environment. Health problems of India - Population and health - Environment pollution. Personal hygiene.

UNIT II SCHOOL HEALTH

Problems - Growth Stress of school planning Health instruction, Health appraisal follow up, Health service and supervision. Role of Physical Education Teacher in School Health Programmes.

UNIT III INFECTIONS

Causes of diseases - Mode of infection, Spread of infection - Public health measure to combat infection - Public health administration - Sanitation - Water supply. Immunity - Prophylactic immunisation - Programmes – AIDS Communicable diseases, Malaria, Typhoid, Cholera, Dysentry, Leprosy, Tuberculosis, STD, Polio, Tetanus Drug abuse - Alcohol, Smoking Family welfare - Sex education

UNIT IV SAFETY AT HOME

Environment and structure, Electrical connections, Bathrooms and Lavatory, Storing articles,. Kitchen and Fire place, Storing medicines, Principles of movements in daily living.

UNIT V SAFETY AT SCHOOL AND PHYSICAL EDUCATION

Safety at school structure and environment: Area, Surface, Building, Furniture and fixtures. School procedures and policies precautionary and emergency equipment. Collection of information: address of parents, hospitals and doctors, police, fire station, ambulance service. Safety in physical education and Sports : During Training and Competition, Dress and Safety equipments. Principles of safety: in organising Physical Education Classes, Demonstration and Competitions.

REFERENCES :

Mangal, S.K. & Chandra, P.C. (1979) Health and Physical Education Ludhiana. R.D. Tandon Broth,.

Neiniah, (1997) School Health Education, New Delhi: Harper & Bros.:

Park, J.E. (2001)Text Book of Preventive and Social Medicine.: Chennai

PAPER XII

RULES OF GAMES AND SPORTS - PART III

(TRACK AND FIELD AND CROSS COUNTRY)

UNIT I METHODS OF MARKING NON STANDARD TRACK

Method of marking Non Standard Track: 200m, 400m track, Calculation of Stagger, Diagonal Excess, Compensated Arc Start, Relay Exchange Zones.

UNIT II METHODS OF MARKING STANDARD TRACK

Method of marking Standard Track: 400m track, Calculation of Stagger, Diagonal Excess, Compensated Arc Start, Relay Exchange Zones, Marking for Hurdles event.

UNIT III METHODS OF MARKING FIELD EVENTS

Method of marking Shot-put Circle and Sector, Hammer Throw Circle and Sector, Discus Throw Circle and Sector, Long Jump, Triple Jump, High Jump and Pole Vault.

UNIT IV GENERAL COMPETITION RULES AND THEIR INTERPRETATIONS,

Track event: Start, Race, Finish, Timing, Seeding and Draws, Tie Breaking, Hurdle Races, Relay races. Field Events: Vertical Jumps Horizontal Jumps Throwing Events General Competition Rules of Cross country races: Course, Distances, Start, drinking / sponging and refreshment stations, race.

UNIT V OFFICIALS IN TRACK AND FIELD & CROSS COUNTRY

Authorities and Duties of Officials in Track and Field Meet and Cross country races: International Officials, Competition Officials Additional Officials.

REFERENCES:

Authors Guide (2014) IAAF Competition Rules 2014-2015, Monaco Cedex: IAAF Publishing .

Viswanath, M.J.(2002) Track and Field Marking & Athletics Officiating Manual, Chennai: Silver Star Publication.

Wright Gary, A (1990) Step by Step guide-Track & Field, New Jeysey: Associates Mahan.

Semester - IV

PAPER XIII - TAMIL - IV

இரண்டாம் ஆண்டு

நான்காம் பருவம்

அலகு : 1

திருக்குறள் அறத்துப்பால் : வாழ்க்கைத் துணைநலம், மக்கள் பேறு
பொருட்பால் : கல்வி, கேள்வி
காமத்துப்பால் : குறிப்பு அறிதல், புணர்ச்சி மகிழ்தல்

அலகு : 2

பத்துப்பாட்டு
நெடுநல்வாடை

அலகு : 3

சமுதாய நோக்கில் தமிழர் விளையாட்டுக்கள்-2
கூட்டுணர்வுவிளையாட்டுகள்- -சார்பு விளையாட்டுகள் - சமயம் சார்ந்த விளையாட்டுகள்.விளையாட்டில் நம்பிக்கையும் பழக்கவழக்கங்களும் - இயற்கையோடு இயைதல்- விளையாடில் அற உணர்வு- அறிவியலும் விளையாட்டும்- விளையாட்டும் வரலாற்று நிகழ்வும் -விளையாடில் குற்றமும் தண்டனையும்.

அலகு : 4

மொழிப் பயிற்சி

1. ஆங்கிலத்தில் இருந்து தமிழுக்கு மொழி பெயர்த்தல்
2. தமிழில் இருந்து ஆங்கிலத்துக்கு மொழி பெயர்த்தல்

அலகு : 5

தமிழ் இலக்கிய வரலாறு

1. சங்க இலக்கிய வரலாறு
2. அற இலக்கிய வரலாறு

துணை நூற்பட்டியல்

1. பேரா.எம்மார் அடைக்கலசாமி, தமிழ் இலக்கிய வரலாறு ,ராசி பதிப்பகம்,சென்னை-73.
2. முனைவர்.த.மலையரசி, (2013), தமிழ் இலக்கியங்களில் விளையாட்டுக் கூறுகள் - பாவை பதிப்பகம்,மதுரை-1.
3. முனைவர். சொ. பரமசிவம்,(2000),நற்றமிழ் இலக்கணம் ,பட்டுப் பதிப்பகம்,சென்னை.40.
4. சங்க இலக்கிய நூல்கள் - கழக வெளியீடு.

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SEMESTER -IV-

ENGLISH -IV-CAREER LISTENING AND SPEAKING

Unit - I

a) Group discussion - predicting and describing future possibilities.

1. Globalization
2. Consumerism
3. Current event.

b) Interview - focus on personality development and body language.

Writing

Unit - II

a) Report Writing
b) Note Making

Unit-III -a) How to write an e-mail
b) Descriptive writing - writing with a purpose

Unit - IV

a) How soon hath time - John Milton
b) Leave this chanting - Robindranath Tagore

Unit - V

a) Dharma in Tirukural - C.Subramanian.
b) Love all serve all - Derek Williams.

Reference:

1. A.K.Rama Bhushanam "Human values through English prose" - (Blackie)

2. Shankuntala Bharvani "The best words" Nissin Ezekial

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PAPER XV

METHODS IN PHYSICAL EDUCATION

UNIT I METHOD:

Meaning – Factors influencing method, Presentation techniques: Planning - Presentation – Steps in the way of presentation. Teaching aids – Class management – General – Specific – Principles to be adopted for good class management.

UNIT II LESSON PLAN:

Values – Types: General and Particular lesson plan. Command : Response Command – Rhythmic Command. Methods of Teaching Physical Activities: Command, Oral, Demonstration, Imitation, Dramatization, At-will, Set-drill, Part, Whole, Whole-Part-Whole methods.

UNIT III TOURNAMENTS:

– Meaning-Types. Method of drawing fixtures for knock out/elimination - league/Round Robin. Combination Tournament : Knock out – cum – knock out, knock out – cum – league, league – cum – league, league – cum – knock out . Challenge Tournament. Intramural – Extramural.

Unit IV METHODS OF TEACHING:

Methods of teaching with special reference to different kinds of physical activities: Calisthenics - Gymnastics- Minor games- Major games- Rhythmic activities. Organisation and conduct of competition in sports and games : Individual sports- Group competition.

Unit-V SUPERVISION:

Supervision – Meaning and Need for supervision – Guiding principles of supervision: Qualities and qualification of a supervisor – supervisors relationship with the administrator and the physical education teacher. Techniques of Supervision: Visitation – Periodical – Surprise – Request- Social, Visitation.

REFERENCES:

Cosmin. H.Rosalind, C .& Jackson, C. (1960) Methods in Physical Education, London: W.B. Saunders Co.

Dheer, S., & Radhika Kamal (1991) Organization and Administration of Physical Education, New Delhi :Friends Publication.

Greyson Daughtrey. (1969). Methods in Physical Education and Health for Secondary Schools. London: W. B. Saunders Company.

Michael W. Metzler. (2000). Instructional Models for Physical Education. London: Allyn and Bacon.

Sachdeva, M.S (1983) Modern Approach to School Organization and Administration, Ludhina : Parkash Brothers Educational Publisher.

Sharad Chandra Mishra. (2009). Methods of Physical Education. New Delhi: Sports Publication.

Thirunarayanan, C. & Hariharan, S (1969) Methods in Physical Education Karaikudi: South India press,

Voltmer, Edward (1979) The Organization and Administration of Physical Education, New Jersey.: Prentice Hall, Inc.

PAPER XVI

RULES OF GAMES SPORTS - PART - IV

(Tennis, Tennikoit, Ball Badminton, Football and Gymnastics)

UNIT I - PREREQUISITES OF AN OFFICIAL

Qualification and Qualities of officials, Philosophy of Officiating in the above listed five games.

UNIT II – HISTORY AND ORGANIZATIONAL SETUP

History and Development, International, national level organisational setup, Major Tournaments and Trophies in the above listed five games.

UNIT III - PRINCIPLES AND MECHANISM OF OFFICIATING

General principles of officiating - Duties and powers of officials - Mechanism of officiating in the above listed five games.

UNIT IV - DIMENSIONS OF PLAY FIELD

Measurements of play fields of the above listed five games.

UNIT V - RULES AND THEIR INTERPRETATIONS

Rules of the following games and their in the above listed five games.

REFERENCES :

Anand, R.L. (1987)Play Field Manual Patiala: NIS Publication.

Bonder, J.B. (1984)How to be a Successful Coach. New York: Prentice Hall .

Bunn, J. W. (1951) The Art of Officiating Sports, Prentice Hall: Englewood Cliff.

Chelliah, S.N. (1984), Vilayattu Vithi Muraihal, Chennai: Raj Mohan Pathipagam.

Buck .H.C (2000)Rules of Games and sports, New Delhi: YMCA Publishing House, Masse Hall.

Semester - V

PAPER XVII

SCIENCE OF YOGA

UNIT I INTRODUCTION TO YOGA

Meaning, Definition, Aim, Concept, Scope of Yoga. Schools of Yoga

Hastangayoga: Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana and Samadhi.

UNIT II YOGA AND PHYSICAL EDUCATION

Meaning and Definition of Physical Education – Relationship between Yoga and Physical Education. Comparison of Yoga Practices and Physical Exercises.

UNIT III ASANA

Asana: Meaning, Definition, Types of asanas. Benefits of Asana: Physiological, Psychological and Therapeutical values.

UNIT IV PRANAYAMA AND MEDITATION

Pranayama meaning., Definition, Aim, Concept of Pranayama - Types of pranayama - Physiological, psychological and Therapeutical values. Meaning, Definition, Aim, Concept of Meditation

UNIT V BANDHAS, SHATKRIYAS AND MUDRAS

Bandhas and Mudras - Meaning. Definition, values. Shat kriyas Neti (Jala, Sutra) Dhauti (Varmana, Vastra) Bhasti, Nauli, Trataka, Kapalabhati. Surya Namaskar.

REFERENCES :

Gharote M.L. (1982) Guidelines forYogic Practice; Lonawala: Medha Publications.

Iyengar B.K.S(1985) The Art of Yoga; Indus: Harpic Collins P.Ltd.

Thirumalai Kumar. S and Indira S, (2011) Yoga in Your Life: Chennai: The Parkar Publication.

PAPER XVIII

CARE AND PREVENTION OF SPORTS TRAUMA

UNIT I CORRECTIVE PHYSICAL EDUCATION

Definition and objectives of Corrective Physical Education . Posture and body mechanics . Standards of standing posture . Values of good posture. Drawbacks and causes of bad posture . Postural tests-Examination of the spine.

UNIT II POSTURE

Normal curve of the spine and its utility. Kyphosis, Lordosis, Deviations in posture: Kypholordosis, Flat back, Scoliosis, Round shoulders, Knock knee, Bow leg, Flat foot. Causes for these deviations and treatment including exercises.

UNIT III MOVEMENTS

Passive, Active, Assisted, Resisted exercise for Rehabilitation.

UNIT IV MASSAGE

Brief history of massage - Massage as an aid for relaxation - Points to be considered in giving massage - Physiological, Chemical, Psychological effects of massage - Indication/contra indication of massage - Classification of the manipulations used in massage and their specific uses on the human body - Stroking manipulation: Effleurage - Pressure manipulation : Petrissage Kneading (finger Kneading, circular) Ironing Skin Rolling - Percussion manipulation : Tapotement, Hacking, Clapping, Beating, Pounding, Slapping, Cupping, Poking, Shaking Manipulation, Deep massage.

UNIT V SPORTS INJURIES CARE AND TREATMENT AND SUPPORTs

Principles pertaining to the prevention of Sports injuries - Care and treatment of Exposed and unexposed injuries in sports - Principles of apply cold and heat, Infra red rays-Ultrasonic. Therapy-Short wave diotherapy. Principles and techniques of Strapping and Bandages.

Note : Each student shall submit Physiotherapy record.

REFERENCE:

Dohenty .J. Meno.wetb, Moder D (2000)Track & Field, EngleWood Cliffs,Prentice Hal Inc.

Lace, M.V.(1951) Massage and Medical Gymnastics, London: J & A Churchill Ltd. .

Mc Ooyand Young(1954) Test and Measurement, New York: Appleton century.

Naro, C.L.(1967) Manual of Massage and, Movement, London: Febra and Febra Ltd.

Rathbome, J.I. (1965)Corrective Physical Education, London: W.B. Saunders &Co.

Staffordand Kelly,(1968) Preventive and Corrective Physica1 Education, New York. The Ronald Press Co.

PAPER XIX

KINESIOLOGY AND BIOMECHANICS

UNIT I INTRODUCTION OF KINESIOLOGY

Introduction: History and Development. Role of Kinesiology in physical education.

UNIT II MUSCLES AND JOINTS

Joints, Classification of Joints, Construction of synovial joints of the body movement. Origin, Insertion and action of muscles: Pectoralis major, Biceps, Triceps (Anterior and Posterior), Trapezius, Sartorius Rectus Femoris, Quadriceps, Hamstring. Types of muscles contraction: isotonic, isometric, Isokinetic.

UNIT III BASICS OF BIOMECHANICS

Biomechanics in Sports - Mechanical principles, laws of motion, types of Motion, Factors influencing motion, air, gravity and water friction, simple machines - Levers - Types of levers and examples in from the human body . Equilibrium: Meaning, Definition and types.

UNIT IV MOTION

Mechanics of movements: force production - application - follow pre-requisite of efficient motion, psychomotor - Mental and emotional. Preliminary motion considerations - Whole motion - Body segment motion.

UNIT V - BIOMECHANICAL ANALYSIS IN SPORTS

Application of Biomechanics to skill learning

1. Track and Field : Sprint, Shot-put and High Jump.
2. Games:
    a. Basketball
    b. Cricket
    c. Badminton
    d. Kabaddi
    e. Hockey

REFERENCES:

Broor, (2000)Efficiency of Human Movements, London: Saunders & Co.,

Kelly, D. L. (1999)Kinesiology and Fundamentals of Motion Description, Prentice Hall.

McClusg, A. (1989) Human Kinetics and Analysis of Body Movements, London:William Heinmann,

Sunderarajan, G. S. (1979)Bio-mechanics of Sports and Games, Chennai: Roshan Publication.

Neil D.E. (1992)Kinesiology and Anatomy and Motion, London: Mosby and Co.

PAPER XX

EDUCATIONAL PSYCHOLOGY AND SPORTS JOURNALISM

UNIT I INTRODUCTION OF PSYCHOLOGY AND CONCEPT OF MIND

Meaning and Definition of Psychology Importance of psychology to physical education. The concept of mind - Cognition. Affection and conation, conscious and unconscious aspects of mind.

UNIT II DEVELOPMENT OF SELF AND MOTIVATION

Brief account of the development of self; Influence of heredity and environment, Individual differences. Motivation - Unlearned (Innate) and learned (acquired) motives, Incentive, Stimuli; Motivation for learning and Performance.

UNIT III LEARNING

Learning- Meaning-Types of learning- Theories of learning (trial and error, conditioned response, learning by insight, learning by imitation), Learning curve Transfer of training - Conditions of transfer.

UNIT IV ETHICS OF JOURNALISM AND SPORTS BULLETINS

Ethics of journalism, Sports ethics and sportsmanship, Canons of journalism, News, Information and ideas, Journalism and sports education, Structure of Sports bulletin, Compiling a bulletin, Types of bulletin, Hourly bulletins and special bulletin and External bulletins.

UNIT V REPORTING AND MASS MEDIAS IN JOURNALISM

Brief review of Olympic Games, Asian Games, Common Wealth Games and Indian traditional games, Sports as an integral part of physical education, Sports organization and sports journalism, General news reporting and sports reporting. Sports reviews, Commentary and Running commentary in Radio and T.V.

EDUCATIONAL PSYCHOLOGY (References):

Boaz, G.D.(1957) General Psychology, Chennai: Boaz institute of psychology Services,

Gates. A. (1957)Educational Psychology, New York: Macmillan Company.

Skinner, C.E (1964) Educational Psychology, New Delhi: Prentice Hall of India PLtd.,

Williams J.F(1964) .The Principles of Physical Education, Philadelphia: W.B. Saunder Co.

SPORTS JOURNALISM (References):

Ahiya, B.N. (1988) Theory and Practice of Journalism: Set to Indian Context Ed.3., New Delhi: Surjeet Publications.

Ahiya, B.N. and Choabra. S.S.A (1990). Concise course in Reporting Etc. New Delhi: Surjeet Publications.

Bbaft, S.C. (1993)broadcast Journalism Basic Principles, New Delhi, Har Anand Publications.

Kamali, M.V.(1983) The Journalist handbook, New Delhi: Vikas Publishing House Pvt. Ltd..

Parathasarathy, R.(1991) Journalism in India From the Earliest Times to the Chennai: Sterling Publication Pvt. Ltd

Varma A.K. (1993)Advanced Journalism, New Delhi: Har Anand Publications,

Semester - VI

PAPER XXI

EXERCISE PHYSIOLOGY AND NUTRITION

UNIT I MUSCULAR CONTRACTION AND EXERCISE:

Properties and composition of voluntary muscles. Minute structure of voluntary muscle. Sliding Filament Theory of Muscular Contraction- Conditions affecting muscular contraction.

UNIT II EFFECT OF EXERCISE ON HUMAN BODY SYSTEM:

Effect of exercise on: Muscular system, Circulatory system – Respiratory system.

UNIT III EFFECT OF EXERCISE ON HUMAN BODY SYSTEM:

Effect of exercise on: Nervous system- Digestive system - Endocrine system.

UNIT IV BASIC FOOD GROUP:

Carbohydrates, Fats and Protein as a source of fuels. vitamins - Fat soluble and Water soluble- Minerals. Balanced diet. Importance of water in an athletic diet.

UNIT V SPORTS NUTRITION:

Diet for sports competition- supplement to the daily diet. Vitamins, Minerals, Fluids. Electrolyte replacement, Carbohydrate loading, Protein loading, Calcium and iron supplement. Pre-event meal. Time for pre-event meal, Alternate eating pattern, Foods to avoid. Exercise and weight control, Crash dieting, Weight Control.

REFERENCE:

Amrit Kumar (1995) Introduction to Exercise Physiology, Chennai: Poompugar Pathipagam.

Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc.,

David, L Costill. (2004). Physiology of Sports and Exercise. New Jersey: Human Kinetics.

Fox, E.L.,& Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.

Gayton A.C (1984). Functions of the Human Body. London :W.B. Saunders & Co.

Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co.

Karpovich & Sinnings(1955) Physiology of Muscular activity. London: W.B. Saunders Cp.,

Morehouse and Miller (1974) Physiology of Exercise. St.Louis : C.V. Mosby Co.

Reily T (1981) Sports Fitness and Sports Injuries , London :Faber and Faber.

Sandhya Tiwaji. (1999). Exercise Physiology. New Delhi :Sports Publishers.

Scott, N. Nisonson B. & Nicholos, J (1985) Principles of sports Medicine, London: William & Walkin,.

Vincent, T. Murche. (2007). Elementary Physiology. New Delhi ;Sports Publication.

William, D. Mc Aradle. (1996). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams Company.

Williams, S. & Rod, W. (2001) Nutrition and Diet, Therapy 2nd Edition, London :W.B. Saunder College Publishing.

PAPER XXII

TEST, MEASUREMENT AND EVALUATION

UNIT I INTRODUCTION TO TEST, MEASUREMENT AND EVALUATION

Meaning and Definition of test, measurement and Evaluation. Need and importance of test and measurement in physical education.

UNIT II CRITERIA AND ADMINISTRATION OF TEST :

Criteria of test, Scientific authenticity (reliability, objectivity - validity - availability of norms). Administrative feasibility and educational application. Administration of test: advance preparation - Duties during testing - Duties after testing.

UNIT III FITNESS TEST

Physical fitness test: AAHPERD Health-Related Fitness Battery (revised in 1984) - Roger's physical fitness Index. Cardio vascular test : Harvard step test, 12 minutes run test, Multi-stage fitness test (Beep test). Motor Fitness: Indiana. Motor Fitness Test (For elementary and high school boys, girls, and College Men), JCR test. SDAT World Beaters Battery Test (For VI, VII & VIII Standard School Boys and Girls)

UNIT IV SPORTS SKILL TEST:

Badminton - Miller wall volley test – French short service test. Basketball - Johnson Basket ball test – Leilich Basketball test. Cricket : Sutcliff Cricket test. Hockey - Friedal field Hockey test.

UNIT V Sports Skill Test:

Sports Skill Test: Football - Johnson soccer test – McDonald soccer test. Tennis - Dyer Tennis test. Volleyball - Brady volley ball test – Russell Lange Volleyball test.

REFERENCES:

Barrow, H.M.. and McGee, R.,A (1964.)Practical Approach to Measurement in Physical Education, Philadelphia : Lea and Febiger.

Bovard, J.F., Cozens, F., W. & Hagman, P.E.(1949)Test and Measurements in Physical Education, Philadelphia: W.B. Sunders Company.

Campbell, W.R. & Tucker, N.M. (1967)An Introduction in Physical Education, London : G.Bell and Sons Ltd.

Getchell B. Physical Fitness (1979): A Way of Life, 2nd ed. New York: John Wiley and Sons, Inc.

Cureton, T.K. (1947)Physical Fitness Appraisal and Guidance, St.Louis : The Mosby Company.

Hunsicker, P.A. & Montoye, H.J. (1953) Applied Test and Measurements in Physical Education, New York: Prentice Hall Inc

Luc Leger (1983), Testing Physical Fitness, Eurofit Experimental Battery Provisional Handbook, : UK : Strasbourg

Meyers, C.R. & Belsh, E.T. (1962) Measurement in physical Education, New York: The Ronald press Company.

Wilgoose, C.E (1967) Evaluation in Health Education and physical Education, New York :McGraw Hill Book Company, Inc.

PAPER XXIII

SCIENTIFIC PRINCIPLES OF SPORTS TRAINING

UNIT I SPORTS TRAINING

Sports Training: Definition, Aims, Characteristics, Principles of sports training.

Physical Fitness: components of physical fitness - importance of physical fitness – Training Load.

UNIT II STRENGTH AND SPEED AND ENDURANCE

Definition of strength -types of strength-importance of strength - factors determining strength – training method for strength improvement - loading procedure for strength training. Definition of speed - forms of speed - factors determining various speed performance - training - methods of increasing speed.

UNIT III ENDURANCE

Definition of endurance - types of endurance - importance of endurance- factors determining endurance training methods for improving endurance.

UNIT IV FLEXIBILITY AND COORDINATIVE ABILITIES

Definition of flexibility - types of flexibility - factors determining flexibility - methods improving flexibility. Coordinative abilities – types – Characteristics - training methods for improving coordinative abilities.

UNIT V VARIOUS METHOD OF TRAINING

Circuit Training Fartlek Training - Internal method - Weight training – Resistance training, Plyometric ,Core training - Functional training, Swiss ball training, Medicine Ball Training.

REFERENCES:

Jenson, G. and Fisher, A.G(1972) Scientific Basis of Athletic Conditioning, 2nd ed., Philadelphia: Lea and Fibiger.

Jones, B.J.(1982) Guide to Effective Coaching Principles and Practices. Allyn and Bacon, Inc.

Singh, H. (1984) Sports Training, General Theory and Physical Fitness NIS, Patiala.

Thomas, J.P (1964) Let us Coach Soccer, New Delhi:YMCA Publishing House.

Thomas, J.P (1971) Scientific Weight Training for Games and Sports, Chennai: Gnanodaya Press.

PAPER XXIV

RULES OF GAMES AND SPORTS - PART V

(HOCKEY, HANDBALL, CRICKET, NETBALL)

UNIT I - PREREQUISITES OF AN OFFICIAL

Qualification and Qualities of officials, Philosophy of Officiating in the above listed four games.

UNIT II – HISTORY AND ORGANIZATIONAL SETUP

History and Development, International, national level organisational setup, Major Tournaments and Trophies in the above listed four games.

UNIT III - PRINCIPLES AND MECHANISM OF OFFICIATING

General principles of officiating - Duties and powers of officials - Mechanism of officiating in the above listed four games.

UNIT IV - DIMENSIONS OF PLAY FIELD

Measurements of play fields of the above listed four games.

UNIT V - RULES AND THEIR INTERPRETATIONS

Rules of the following games and their in the above listed four games.

REFERENCES :

Ashok Kumar, (2004)Hand Ball, New Delhi: DPH Publishers.

Ashwin Shaw(2001) Cricket manual, New Delhi: Luther worth Publishers.

Claime Michal, Taverna (2009) Field Hockey – Techniques, Tactics, London:

Elizabet Ander (2009) Field Hockey – Steps to Success, London: Human Kinetics.

Human Kinetics.

Jain (2005) Play and learn Hand ball, Bangalore :KSK Publishers.

Tan Poin (2009) coaching youth cricket, London: Human Kinetics.

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