DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS
MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI - 12

REGULATION, SCHEME OF EXAMINATION AND SYLLABI FOR MASTER OF PHYSICAL EDUCATION (M.P.Ed)

(2016-17 Onwards)

DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS
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REGULATION, SYLLABI AND SCHEME OF EXAMINATION FOR THE MASTER OF PHYSICAL EDUCATION (M.P.Ed -2yrs) COURSE (Since 2016-17 onwards)

1. Eligibility for Admission to the Course

a) Bachelor of Physical Education (B.P.Ed) or equivalent with at least 50% marks
b) A minimum intercollege level participation in sports and games is compulsory.
c) The candidates should not have completed 35 years of age as on 1st July. However, relaxation of 3 years shall be given for SC/ST candidates.
d) Ex-Servicemen / Experienced Physical Education Teachers shall be given relaxation of 6 years of age.
e) The candidate should be medically fit and free from any deformity.
f) Pregnant women are not permitted either for admission or to undergo the course. If violated, they will not be permitted to continue the course.
g) Admission shall be made on the basis of ranking in the entrance and fitness test.

2. Course of Study

a. Duration of the Course - The duration of the course of study is two (02) academic years, consisting of four semesters. The total working days shall not be less than 200 days in an Academic year. Each semester consists of not less than 100 working days excluding examination.
b. Each working day shall consist of four hours of Practical Work (Morning and Evening – 2 hours for each session) and three hours of theory in between.
c. Undergoing Internship, Intensive Practice Teaching / Coaching in neighbouring schools/colleges and village placement programme shall be compulsory for all the students.
d. The Course of study shall consist of three parts Viz Part I, Part II, and Part III as given below.
   Part I – Theory
   Part II – Practicum
   Part III - Internship/ Teaching/ Coaching Practice

Part I –Theory

The course offers a package of certain core and elective for the effective interaction among the students from different disciplines. **Since this course is a practically oriented programme in nature and conducted as per the NCTE guidelines, hence no supportive courses are offered by this department**. The innovation of the course consist of inter disciplinary curriculum with a pronounced accent on the frontier areas of knowledge. Under this system, the course comprises several papers, which are referred to in terms of the credits which are worthy and grading to the students may be awarded according to their performance.

The theory paper consists of internal and external assessment. The internal assessment marks awarded by the department will be added to the marks obtained at the university examination in each theory paper calculating the percentage of marks. A candidate will be deemed to have passed the written examination and thesis, provided that the candidate shall have obtained a minimum of 50% in the university external examination and the total aggregate marks should be not less than 50% in internal and external.

Semester I

- Physiology of Exercise
- Sports Psychology and Sociology
- Scientific Principles of Sports Training and Coaching
- (A) - Test, Measurement and Evaluation in Physical Education - **Elective**
  (B) - Sports Technology - **Elective**

Semester II

- Sports Medicine, Athletic Care and Rehabilitation
- Sports Biomechanics and Kinesiology
- Applied Statistics in Physical Education and Sports
- (A) - Information and Communication Technology (ICT) in Physical Education - **Elective**
  (B) - Health Education and Sports Nutrition - **Elective**

Semester III

- Research Process in Physical Education and Sports
- Principles of Life Span Motor Development
- Physical Fitness and Wellness
- (A) Sports Journalism and Mass Media - **Elective**
  (B) Sports Engineering - **Elective**

Semester IV

- Sports Management and Curriculum Design in Physical Education
- Yogic Sciences
- Thesis/Project
- (A) Value and Environmental Education - **Elective**
  (B) Education Technology in Physical Education and Sports - **Elective**

Part II – Practicum

Participation and learning the skills and techniques, officiating, teaching and coaching methods of following activities

S. No.	Activities for Semester I
P-A	**Track and Field Events Part I :** Sprint, Middle and Long Distance Running, Relay Races, Race walk, Mountain running, Road race, Marathon, Flag Hoisting, March Past, Ceremonies Like Opening, Closing, Victory, (During Intra Murals Competitions) of Different Sports and Games/ Lead Up Games/ Minor Games, Ground marking.
P-B	**Yoga, Aerobics & Gymnastics, Swimming, Martial Arts, and Rhythmic Activities: (**Boxing, Fencing, Stick Fencing (Silambam), Judo, Karate, Taekwondo and Kung-Fu)
	Activities for Semester II
P-C	**Track and Field Events Part II:** Long Jump, High Jump, Shot Put, Discus Throw, Javelin Throw
P-D	**Game of Specialization – I**
	Activities for Semester III
P-E	**Track and Field Events Part III :** Pole Vault, Triple Jump, Hammer Throw, Hurdles, Combined Events,
P-F	**New Games, Extension activities and Fitness Training:** Netball, Softball, Baseball, Tennicoit, Carom and Chess, Conditioning Exercises: General and Specific. Training Methods: Weight Training (Free Weights and Machine Weights)- Circuit Training – Interval Training- Fartlek Training - Plyometrics, Swiss ball Training – Medicine Ball Training – Core Board Training- Cross Training-Theraband Training.
	Activities for Semester IV
P-G	**Track and Field Specialization** (Any one Track and Field Events)
P-H	**Game of Specialization - II**

Note: The student has to select any two different games as the Specialization – I (Second best) and Specialization - II (First Best) in I and II years respectively from the following games/ sports.

List of Major Games/ Sports for Specialization

1. Badminton
2. Ball Badminton
3. Basketball
4. Cricket
5. Football
6. Handball
7. Hockey
8. Kabaddi
9. Kho- Kho
10. Tennis
11. Volleyball
12. Weight Lifting

Part III - Internship/ Teaching/ Coaching Practice

In internship a student (teacher trainee) is undergoing supervised practical training. Internship/ Teaching/Coaching practice includes Teaching/ Coaching & observation in the Department. Intensive Teaching/ Coaching Practice in the neighbouring Schools/ College/Sports Organizations/Sports Academies/ Sports Clubs, Community engagements (Village Placement Programme). The programme includes teaching indigenous activities, basic skills in sports and games giving exposure to teachers in the teaching-learning process.

Intensive teaching/coaching shall be decided by the Staff-in-charge of Teaching/Coaching Practice and Head of the Department.

Students shall complete minimum of 10 teaching, 10 coaching and 10 officiating lessons in 15 working days under the supervision of the assigned Department of physical education staff in the schools/ College/ Institutions..

For the Community engagements (Village Placement programme) the students shall visit the neighbouring village for a minimum period of five days and organise the programmes such as

1. Physical Education/ Physical Exercise related programmes
2. Cleaning, creation of play fields for physical activities, sports and games.
3. Awareness Programmes and Survey related to health and fitness.

The Community engagements (Village Placement programme) record with details of programmes organised and photo graphs shall be submitted.

Paper	SEMESTER I
I-A	**Sports Science Specialisation I: Class Room Teaching, Field / Laboratory Work:** Exercise Physiology, Sports Psychology, Test, Measurement and Evaluation and Participation in Intramural and Extramural Tournaments.
	SEMESTER II
I-B	**Teaching / Coaching/ Officiating Practice in Games:** Track and Field Part I & II & Game of Specialization –I
I-C	**Sports Science Specialisation II : Class Room Teaching, Field / Laboratory Work:** Biomechanics and Kinesiology, ICT and Participation in Intramural and Extramural Tournaments.
	SEMESTER III
I-D	**Sports Science Specialisation III: Class Room Teaching, Field / Laboratory Work:** Movement assessment, Athletic Care and First Aid and Participation in Intramural and Extramural Tournaments.
	SEMESTER IV
I-E	**Internship/Intensive Teaching Practice I:** Coaching Lesson (Track and Field & Game of Specialization -I)

3. Attendance

1) A student must have 90% attendance in theory, practicum and internship classes.
2) A maximum of 15 % of relaxation shall be permitted for the medical reasons. He / she must produce a reliable Medical Certificate with prior permission by following the due procedures.
3) A candidate not appeared for examination due to lack of attendance shall not be permitted to proceed to the next semester and he/she should **REDO** the semester.

4. Continuous Internal Assessment for Part I – Theory Papers

a. Written Examination - 15 Marks:

I. Continuous internal assessment shall be graded by the concerned subject teachers. Three tests will be conducted for each paper.
II. Each test carries a maximum of 15 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 (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 - 5 Marks:

The teachers shall give assignments to the students and 5 marks are allotted for assignments. This may be of any accepted method such as Seminar, Project, Written materials, Record etc.

c. Attendance - 5 Marks:

Regularity in attending theory, practicum and internship classes shall be graded as per the percentage of attendance.

95-100% attendance – 5 Marks
90-94% attendance – 4 Marks
85-89% attendance – 3 Marks
80-84% attendance – 2 Marks
75-79% attendance – 1 Marks

d. Pre-Semester/ Model Examination (75 Marks)

i. Pre-Semester/ Model examination shall be held at the end of each semester before the University semester examination covering all the portions and 75 marks shall be 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.

Internal 25 marks will be calculated as indicated below

1.	Average of the two best written tests ((15+15)/2)	- 15 marks
2.	Assignment	- 05 marks
3.	Attendance	- 05 marks
4.	Pre-semester (75 marks converted to 25)	- 25 marks
		- (50/2) marks
	Total	**- 25 marks**

5. Requirement for Passing

No candidate shall be eligible for the award of the M.P.Ed degree unless he/she has passed the written examinations (Part I), Practicum (Part II) and Internship/ Teaching/Coaching Practice (Part III).

6. Provision of Bonus Credits Maximum 06 Credits in each Semester

Sr. No.	Special Credits forte Extra Co-curricular Activities	Credit
1	Sports Participation International Level Competition	4
2	Sports Achievement National level Competition (Medal Winner)	2
3	Inter Uni. Participation (Any one game)	2
4	Sports Achievement at State level Competition (Medal Winner)	1
5	Inter College Participation (min. two games)	1
6	National Cadet Corps / National Service Scheme	2
7	Blood donation / Cleanliness drive / Community services /	2
8	Mountaineering – Basic Camp, Advance Camp / Adventure Activities	2
9	News Reporting / Article Writing / book writing / progress report writing/Paper Publication	1

Students can earn maximum 06 Bonus credits in each semester by his/her participation in the above mentioned activities duly certified by the Head of the institution / Department. This Bonus credit will be used only to compensate loss of credits in academic activities.

Inter University Sports Participation and Special Permission for University Examination

A student representing the University / State / Nation in a game or sport and unable to write the University Semester Examination will appear for a special supplementary University Examination as stipulated by the University.

7. M.P.ED SCHEME OF EXAMINATION 2016-17 ONWARDS

Course	Sub. Code	Name of the Subject	Credit	Maximum Marks			Passing Minimum	
				Int.	Ext.	Total Marks	Ext.	Total Marks
SEMESTER I								
C	LPEC11	**Physiology of Exercise**	4	25	75	100	38	50
C	LPEC12	**Sports Psychology and Sociology**	4	25	75	100	38	50
C	LPEC13	**Scientific Principles of Sports Training and Coaching**	4	25	75	100	38	50
E	**LPEEA** **LPEEB**	**(A) - Test, Measurement and Evaluation in Physical Education** **(B) - Sports Technology**	3	25	75	100	38	50
L	LPEL11	Track and Field Events Part -I	2	100	--	100	--	50
L	LPEL12	Yoga, Aerobics, Gymnastics, Swimming, Martial Arts and Rhythmic Activities	2	100	--	100	--	50
I	LPEI11	**Sports Science Specialisation -I**	2	100	--	100	--	50
SEMESTER II								
C	LPEC21	**Sports Medicine, Athletic Care and Rehabilitation**	4	25	75	100	38	50
C	LPEC22	**Sports Biomechanics and Kinesiology**	4	25	75	100	38	50
C	LPEC23	**Applied Statistics in Physical Education and Sports**	4	25	75	100	38	50
E	**LPEEC** **LPEED**	**(A) Information and Communication Technology (ICT) in Physical Education** **(B) Health Education and Sports Nutrition**	3	25	75	100	38	50
L	LPEL21	Track and Field Events Part –II	2	100	-	100	--	50
L	LPEL22	Game of Specialization – I	2	100	--	100	--	50
I	LPEI21	Teaching / Coaching/ Officiating Practice in Games and Athletics	3	25	75	100	38	50
I	LPEI22	Sports Science Specialisation -II	2	100	--	100	--	50
SEMESTER III								
C	LPEC31	Research Process in Physical Education and Sports	4	25	75	100	38	50
C	LPEC32	**Principles of Life Span Motor Development**	4	25	75	100	38	50
C	LPEC33	**Physical Fitness and Wellness**	4	25	75	100	38	50
E	**LPEEE** **LPEEF**	**(A) Sports Journalism and Mass Media** **(B) Sports Engineering**	3	25	75	100	38	50
L	LPEL31	Track and Field Events Part -III	2	100	--	100	--	50
L	LPEL32	New Games, Extension Activities and Fitness Training	2	100	--	100	--	50
I	LPEI31	Sports Science Specialisation -III	2	100	--	100	--	50
SEMESTER IV								
C	LPEC41	**Sports Management and Curriculum Design in Physical Education**	4	25	75	100	38	50
C	LPEC42	**Yogic Sciences**	4	25	75	100	38	50
P	LPEP41	**Thesis / Project**	6	25	75	100	38	50
E	**LPEEG** **LPEEH**	**(A) Value and Environmental Education** **(B) Education Technology in Physical Education and Sports**	3	25	75	100	38	50
L	LPEL41	Track and Field Specialization	2	100	--	100	--	50
L	LPEL42	Game of Specialization - II	2	100	--	100	--	50
I	LPEI41	Internship/ Intensive Teaching Practice in Games and Athletics	3	25	75	100	38	50
Total			90	1550	1350	2900	--	---

Note: C-Core, E-Elective, L-Practical, I-Internship, P-Thesis/Project

SEMESTER I
CORE I
PHYSIOLOGY OF EXERCISE – LPEC11

UNIT I – Skeletal Muscles and Exercise
Macro & Micro Structure of the Skeletal Muscle, Chemical Composition. Sliding Filament theory of Muscular Contraction. Types of Muscle fibre. Muscle Tone, Chemistry of Muscular Contraction – Heat Production in the Muscle, 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
Mechanics of Breathing – Respiratory Muscles, 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 Phosphagen 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.

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

REFERENCES:

Christine M. Drews., (1999). *Physiology of Sports and Exercise.* USA: Human Kinetics Publishers.
Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
David, L. Costill. (2004). *Physiology of Sports and Exercise*. Human Kinetics.
Fox, E.L., & Mathews, D.K. (1981). *The Physiological Basis of Physical Education and Athletics*. Philadelphia: Sanders College Publishing.
Jack H. Wilmore, David L. Costill., & W. Larry Kenny. (2008). *Physiology of Sports and Exercise (4th Ed.,).* USA: Human Kinetics Publishers.
Jay Hoftman., (2000). *Physiological Aspects of Sports training and Performance*. USA: Human Kinetics Publishers.
Mathew, D.K. & Fox, E. L. (1971). *Physiological Basis of Physical Education and Athletics*. W. B. Saunders Co: Philadelphia.
Shaver, L. (1981). Essentials of Exercise Physiology. New Delhi: Subject Publications.
Vincent, T. Murche. (2007). *Elementary Physiology*. Hyderabad: Sports Publication.
William, C. Whiting & Stuart Rugg. (2006). *Dyanatomy*. USA: Human Kinetics.
William, D. McAradle. (1996). *Exercise Physiology, Energy, Nutrition and Human Performance*. Philadelphia: Lippincott Williams and Wilkins Company.

CORE II

SPORTS PSYCHOLOGY AND SOCIOLOGY – LPEC12

UNIT I - Introduction

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 - Motivation

Meaning and Definition, Types of Motivation: Intrinsic, Extrinsic. Achievement Motivation: Meaning, 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.

UNIT III – Goal Setting

Meaning and Definition, Process of Goal 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.

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 on Sports Performance. Leadership: Meaning, Definition, types. Leadership and Sports Performance.

UNIT V – Group Cohesion

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.

REFERENCES:

Cratty Bryant, J. (1975). *Movement Behaviour and Motor Learning*. Philadelphia Lea & Febiger.

Daniel Smith, Michael Bar-Eli. (2007). *Essential Readings in Sport and Exercise Psychology.* Human Kinetics.

Diane L. Gill. (1986). *Psychological Dynamics of Sport*. New York: Human Kinetics Publishers Inc.

Janet Buckworth, Rod K. Dishman. (2002). *Exercise Psychology.* Human Kinetics.

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

John D. Lauther., (1998). *Sports Psychology*. Englewood: Prentice Hall Inc.

John, D. Lauther., (2000). *Psychology of Coaching*. NerJersy: Prentice Hall Inc.

Kamlesh, M. L. (1983). *Psychology of Physical Education and Sports*. Metropolitan Book Co. Pvt. Ltd.

Nick Ford & David Brown, (2006). *Surfing and Social Theory.* Routledge Taylor and Francis Group.

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

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

Robert S. Weinberg., Daniel Gould., (2007). *Foundation of Sport and Exercise Psychology (4th Ed.,)*. Human Kinetics.

Thelma Horn. (2002). *Advances in Sports Psychology*. Human Kinetics.

CORE III

SCIENTIFIC PRINCIPLES OF SPORTS TRAINING AND COACHING – LPEC13

UNIT I – Introduction

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

UNIT II – Components of Physical Fitness

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, Cross Country, Fartlek Training

UNIT III – Flexibility

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

Training Plan: Macro Cycle, Meso-Cycle. Short Term Plan and Long Term Plans - Periodisation: Meaning, Single, Double and Multiple Periodisation, Preparatory Period, Competition Period and Transition Period.

UNIT V – Doping

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 regulations : over-the- counter drugs (OTC) – prescription only medicines (POMs) – Controlled drugs (CDs). Reporting test results – Education

REFERENCES:

BeotraAlka, (2000), *Drug Education Handbook on Drug Abuse in Sports*. Delhi: Sports Authority of India.

Bill Foren, (2001). *High Performance Sports Conditioning*. USA: Human Kinetics Publishers.

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. Luis, Mosby Year Book

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

Dick, Frank W., (1980). *Sports Training Principles.* London: Leipus Book.

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. Pfeiffer., (1998). *Concepts of Athletics Training (2nd Ed.*,). London: Jones and Bartlett Publications

Singh. Hardayal., (1991). *Science of Sports Training.* New Delhi: D. A.V. Publications.

Thomas R. Baechle, & Roger W. Earle, (2000). *Essentials of Strength Training and Conditioning (2nd Ed.,).* USA: Human Kinetics Publishers.

Tudor O. Bompa,(1999). *Periodisation.* USA: Human Kinetics Publishers.

ELECTIVE

(A) - TEST, MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION –LPEEA

UNIT I – Introduction

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 – Motor Fitness Tests

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 (Separately for boys and girls) - JCR test. Motor Ability; Barrow Motor Ability Test – Newton Motor Ability Test – Muscular Fitness – Kraus Weber Minimum Muscular Fitness Test.

UNIT III – Physical Fitness Tests

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 – Anthropometric and Aerobic-Anaerobic Tests

Physiological Testing: Aerobic Capacity: The Bruce Treadmill Test Protocol, 1.5 Mile Run test for college age males and females. Anaerobic Capacity: Margaria-Kalamen 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: Triceps, Sub scapular, Suprailiac.

UNIT V – Skill Tests

Specific Spots Skill Test: Badminton: Miller Wall Volley Test. Basketball: Johnson Basketball Test, Harrison Basketball Ability Test. Cricket: Sutcliff Cricket test. Hockey: Friendel 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.

REFERENCES :

ACSM's (1992). *Health/Fitness Facility Standards and Guidelines*, New York: Human Kinetics.

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

Barrow, Harold. M., McGee, & Rosemary. A., (1979). *Practical Approach to Measurement in Physical Education*, Philadelphia: Lea and Febiger.

Clake, H. Harrison. (1976). *Application of Measurement to Health and Physical Education*, New Jersey: Prentice Hall Inc.

Collins, R.D., & Hodges P.B., (2001). A Comprehensive Guide to Sports Skills Tests and Measurement (2nd edition) Lanham: Scarecrow Press

Edmund O. Acevedo & Michael A. Starks., (2003). *Exercise Testing and Prescription lab Manual*. USA: Human Kinetics Publishers.

James R. Morrow., Allen Jackson, James G. Disch & Dale Mood. (2011). *Measurement and Evaluation in Human Performance* (4th Ed.,), USA: Human Kinetics Publishers.

Safrit, Margaret J., (1995). *Introduction to Measurement in Physical Education and Exercise Science*. St. Louis: Mosby.

ELECTIVE
(B) - SPORTS TECHNOLOGY – LPEEB

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 – Surfaces of Playfields
Modern surfaces for playfields, construction and installation of sports surfaces. Types of materials – synthetic, wood, polyurethane. Artificial turf. Modern technology in the construction of indoor and outdoor facilities. Technology in manufacture of modern play equipments. Use of computer and software in Match Analysis and Coaching.

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: Throwing and Jumping Events. Protective equipments: Types, Materials and Advantages. Sports equipment with nano 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.

REFERENCES:

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

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

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

Walia, J.S., (1999). *Principles and Methods of Education*. Jullandhar: Paul Publishers.

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

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

SEMESTER II
CORE IV
SPORTS MEDICINE, ATHLETIC CARE AND REHABILITATION – LPEC21

UNIT I – Introduction
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, chronic. Advantages and Disadvantages of PRICE, PRINCE therapy, Aquatic therapy.

Unit II – Sports Injuries Care, Treatment and Support
Principles pertaining to the prevention of Sports injuries – care and treatment of exposed and unexposed injuries in sports – Principles of apply cold and heat, infrared rays – Therapeutic Modalities - Cold Modalities - Heat Modalities - Electrical Modalities. Principles and techniques of Strapping and Bandages.

Unit III – Corrective Physical Education
Definition and objectives of corrective physical Education. Posture and body mechanics, Standards of Standing Posture. Value of good posture, Drawbacks and causes of bed posture. Posture test – Examination of the spine. Normal curve of the spine and its utility, Deviations in posture: Kyphosis, lordosis, flat back, Scoliosis, round shoulders, Knock Knee, Bow leg, Flat foot. Causes for deviations and treatment including exercises.

UNIT IV – Basic Rehabilitation
Basic Rehabilitation: Strapping/Tapping: Definition, Principles Precautions Contraindications. Proprioceptive neuromuscular facilitation: Definition hold, relax, repeated contractions. Show reversal technique exercises. Isotonic, Isokinetic, isometric stretching. Types of stretching, Advantages, dangers of stretching, Manual muscle grading - Brief history of massage – Physiological, Chemical, Psychological effects of massage – Technique of Massage.

UNIT V – Spine Injuries and Exercise
Head, Neck and Spine injuries-Upper Limb and Thorax Injuries- Lower Limb and Abdomen Injuries - Stretching and strengthening exercise for sports injuries

REFERENCES:

Bengt O. Eriksson et al., (1990). *Sports Medicine.* Guinness Publications.
C.S. Jeyaprakash, (2003). *Sports Medicine.* New Delhi: J.P. Brothers.
Christopher M. Norris. (1993). *Sports Injures Diagnosis and Management for Physiotherapists*. East Kilbride: Thomson Litho Ltd.
Larry J. Durstine & Geoffrey E. Moore, (2003). *Exercise Management for Person with Chronic Diseases and Disabilities (2nd Ed.,),* USA: Human Kinetics.
Melinda J. Flegel, (2003). *Sports First Aid (3rd Ed.,),* USA: Human Kinetics.
Morris B. Million., (1984). Sports Injuries and Athletic Problem. New Delhi: Surjeet Publication.
Naro, C. L. (1967). *Manual of Massage and, Movement*. London: Febra and Febra Ltd.
Pande. (1998). *Sports Medicine*. New delhi: KhelShitya Kendra
Rathbome, J.l. (1965). *Corrective Physical education*. London: W.B. Saunders & Co.
Stafford & Kelly, (1968). *Preventive and Corrective Physical Education.* New York.
The Encyclopedia of Sports Medicine. (1998). *The Olympic Book of Sports Medicine.* Australia: Tittel Blackwell Scientific publications.

CORE V
SPORTS BIOMECHANICS AND KINESIOLOGY –LPEC22

UNIT I – Introduction
Meaning, nature, role and scope of Applied kinesiology and Sports Biomechanics. Meaning of Axis and Planes, Dynamics, Kinematics, Kinetics, Statics Centre of gravity -Line of gravity plane of the body and axis of motion, Vectors and Scalars.

UNIT II – Muscle Action
Origin, Insertion and action of muscles: Pectoralis major and minor, Deltoid, Biceps, Triceps (Anterior and Posterior), Trapezius, serratus, Sartorius, Rectus femoris, Abdominis, Quadriceps, Hamstring, Gastrocnemius.

UNIT III – Motion and Force
Meaning and definition of Motion. Types of Motion: Linear motion, angular motion, circular motion, uniform motion. Principals related to the law of Inertia, Law of acceleration, and 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 – Projectile and Lever
Freely falling bodies - Projectiles -Equation of projectiles stability 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 – Movement Analysis
Analysis of Movement: Types of analysis: Kinesiological, Biomechanical. Cinematographic. Methods of analysis – Qualitative, Quantitative, Predictive

REFERENCES:

Carr, Gerry. (2004). *Sports Mechanics for Coaches.* New York: Human Kinetics.
Gladys, Scott M. (1998). Kinesiology. New Delhi: Sports Publications.
Hoffman S.J. (2005). Introduction to Kinesiology. (Human Kinesiology publication In.
Peter M. McGinnis, (1999). *Biomechanics of Sport and Exercise*. USA: Human Kinetics.
Robertson .E. Gordon D et. al., (2004). *Research Methods in Biomechanics*. New York: Human Kinetics.
Shaw Dhananjoy. (2000). *Mechanical Basis of Biomechanics.* New Delhi: Sports Publications.
Steven Roy, & Richard Irvin. (1983). *Sports Medicine*. New Jersery: Prentice hall.
Thomas. (2001). *Manual of structural Kinesiology.* New York: Me Graw Hill.
Uppal, A (2004), *Kinesiology in Physical Education and Exercise Science.* Delhi: Friends publications.
William C. Whiting & Stuart Rugg, (2006) *Dyanatomy.* USA: Human Kinetics.
Williams M., (1982). *Biomechanics of Human Motion*. Philadelphia: Saunders Co.

CORE VI
APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS –LPEC23

UNIT I – Introduction
Meaning and Definition of Statistics. Function, need and importance of Statistics. Types of Statistics. Meaning of the terms, Population, Sample, Data, types of data. Variables; Discrete, Continuous. Parametric and non-parametric statistics.

UNIT II –Measures of Central Tendency and Dispersion
Meaning, uses and construction of frequency table. Meaning, Purpose, Calculation and advantages of Measures of central tendency – Mean, median and mode. Meaning, Purpose, Calculation and advances of Range, Quartile, Deviation, Mean Deviation, Standard Deviation.

UNIT III – Measures of Dispersions and Scales
Meaning, Purpose, Calculation and advantages of scoring scales; Sigma scale, Z Scale, Hull scale-Normal Curve. Meaning of probability- Principles of normal curve – Properties of normal curve. Divergence form normality – Skewness and Kurtosis.

UNIT IV – Probability Distributions and Graphs
Graphical Representation in Statistics; Line diagram, Bar diagram, Histogram, Frequency Polygon, Ogive Curve- Computation of Independent and Dependent "t" test-chi square test with interpretation of data.

UNIT V – Inferential and Comparative Statistics
Type I & II Error-Level of significance-Degrees of Freedom- Meaning of correlation-calculation of product moment method and rank difference method – Calculation of ANOVA and concept of ANCOVA.

REFERENCES:

Craig Williams & Chris Wragg. (2006). *Data Analysis and Research for Sport and Exercise Science*. Londonl: Routledge Press

Jerry R Thomas & Jack K., Nelson. (2000). *Research Methods in Physical Activities.* Illonosis; Human Kinetics.

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

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

Jerry R., Thomas & Jack K., Nelson. (2000). *Research Methods in Physical Activities*. Illonosis; Human Kinetics;

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

Rothstain. A., (1985). *Research Design and Statistics for Physical Education.* Englewood Cliffs: Prentice Hall, Inc.

Sivaramakrishnan. S., (2006). *Statistics for Physical Education.* Delhi: Friends Publication.

Thirumalaisamy., (1998). *Statistics in Physical Education.* Karaikudi: Senthilkumar Publications.

ELECTIVE
(A) INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN PHYSICAL EDUCATION – LPEEC

Unit I – Communication & Classroom Interaction
Concept, Elements, Process & Types of Communication Communication Barriers & Facilitators of communication - Communicative skills of English - Listening, Speaking, Reading & Writing Concept & Importance of ICT Need of ICT in 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 & Applications of Computers Hardware of Computer: Input, Output & Storage Devices Software of Computer: Concept & Types - Computer Memory: Concept & Types Viruses & its Management - Concept, Types & Functions of Computer Networks Internet and its Applications Web Browsers & Search Engines Legal & Ethical Issues

Unit III – MS Office Applications
MS Word: Main Features &its Uses in Physical Education - MS Excel: Main Features & its Applications in Physical Education MS Access: Creating a Database, Creating a Table, Queries, Forms & Reports on Tables and its Uses in Physical Education - MS Power Point: Preparation of Slides with Multimedia Effects MS Publisher: Newsletter & Brochure

Unit IV – 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

Unit V – E-Learning & Web Based Learning
E-Learning - Web Based Learning - Visual Classroom

REFERENCES:

B. Ram, (2006). *Computer Fundamental* (3rd Ed.,). Brain under IDG Book. India (p) Ltd

Douglas E. Comer, (2001). *Teach Yourself Office 2000* (4th Ed.,). The Internet Book, Purdue University, West Lafayette in 2005

Heidi Steel Low price Edition, Microsoft Office Word 2003- 2004, ITL Education Solution Ltd. Introduction to information Technology, Research and Development Wing-2006

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

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

Sanjay Saxena, (2006). Microsoft Office for ever one (2nd Ed.,). Vikas Publication House, Pvt. Ltd.

ELECTIVE
(B): HEALTH EDUCATION AND SPORTS NURTITION – LPEED

Unit - I Health Education

Concept, Dimensions, Spectrum and Determinants of Health- Definition of Health, Health Education, Health Instruction, Health Supervision Aim, objective and Principles of 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 schools-Health Services - Care of skin, Nails, Eye health service, Nutritional service, Health appraisal, Health record, Healthful school environment, first- aid and emergency care etc.

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

Unit – IV- Introduction to Sports Nutrition

Meaning and Definition of Sports Nutrition, Role of nutrition in sports, Basic Nutrition guidelines, Nutrients: Ingestion to energy metabolism (Carbohydrate, Protein and Fat), Role of carbohydrates, Fat and protein during exercise.

Unit – V Nutrition and Weight Management

Concept of BMI (Body mass index), 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.

REFERENCES:

Boyd-Eaton S. et al., (1989). *The Stone Age Health Programme*: *Diet and Exercise as Nature Intended*. Angus and Robertson.

Chandra, Soti Shivendra, Puri, & Krishan, (2005). *Health Education and Physical Education.* New Delhi: Surjeet Publications.

Chaube S.P & Chaube Akhilesh, (2005). *School Hygiene and Health Education*. Agra: Vinod Pustak Mandir.

Dan Benardot, (2000). *Nutrition for Serious Athletes.* USA: Human Kinetics.

Hanlon, John J. (2003). *Principles of Public Health Administration.*

Hardman, Adrianne, E., Stensel, & David. J., (2004). *Physical Activity and Health*. London: Routledge.

Sharma O.P., (2001). *A-Z Handbook of Health Education and Sports.* Sports Publication: Khel Sahitya Kendra.

Suzanne Girard Eberle, (2000). *Endurance Sports Nutrition.* USA: Human Kinetics.

SEMESTER III

CORE VII
RESEARCH PROCESS IN PHYSICAL EDUCATION AND SPORTS– LPEC31

UNIT I – Introduction
Meaning and Definition of Research – Need, Nature and Scope of research in Physical Education. Classification of Research, Location of Research Problem, Criteria for selection of a problem- Steps in research process - Formulation of hypothesis - Literature - Purpose of the literature – Literature search techniques- Variables-Types of Variables.

UNIT II – Methods of Research
Survey Study: Interview and Questionnaire method - Case study- Historical Research: Steps in Historical Research, Sources of Historical Research: Primary Data and Secondary Data- Historical Criticism: Internal Criticism and External Criticism.

UNIT III – Experimental Research
Experimental Research – Meaning, Nature and Importance, Meaning of Variable, Types of Variables. Experimental Design - Single Group Design, Reverse Group Design, Repeated Measure Design, Static Group Comparison Design, Equated Group Design, Factorial Design.

UNIT IV – Sampling
Meaning and Definition of Sample and Population. 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 – Research Proposal and Report
Chapterization of Thesis / Dissertation, Front Materials, Body of 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, Footnote and Bibliography writing.

REFERENCES :

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

Chris, Gratton., & Ian, Jones. (2004). *Research Methods for Sports Studies*. London: Routledge Taylor & Francis Group.

Clarke, David, H., & Clarke, H, Harrison. (1984). *Research processes in Physical Education*. New Jersey: Prentice Hall Inc.

Craig, Williams., & Chris, Wragg. (2006). *Data Analysis and Research for Sport and Exercise Science*. London: Routledge Taylor & Francis Group.

Jerry, R. Thomas., & Jack, K. Nelson. (2005). *Research Methods in Physical Activities (5th Ed)*. Champaign, Illinois; Human Kinetics.

John, W. Best., & James, V. Kahn. (2006). *Research in Education (9th Ed)***.** New Delhi: Prentice Hall of India Pvt.

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

Kothari, C.R. (2004). *Research Methodology (2nd Ed).* New Delhi: New Age International Pvt.

CORE VIII
PRINCIPLES OF LIFE SPAN MOTOR DEVELOPMENT – LPEC32

UNIT –I

Definition-Motor Development, Motor Learning, Moto Control, Physical growth, Maturation and Aging-Newell's Model of Motor Development-Theoretical perspectives in Motor Development: Maturation, information processing and ecological perspectives-Principles of Motion and Stability—Classification of Motor Activities.

UNIT-II

Physical Growth and Aging: Prenatal and Postnatal Development-Development of the cardio respiratory system, Skeletal System, Muscular System, Adipose System, Endocrine System and Nervous System-Growth in Stature and Body Weight- Chronological age and age groups.

UNIT-III

Early Motor Development: Movement of Infant, Motor Milestones-Development of human Locomotion: Creeping, Crawling, Walking and Running-Development of Ballistic Skills: Throwing, Kicking, Punting and Striking-Development of Manipulative Skills: Grasping, Reaching, catching and anticipation.

UNIT-IV

Sensory-Perceptual Development: Visual, Kinesthetic, Auditory and Intermodal perception-Development of Postural control and Balance -Constraints to motor development: Social and cultural, Psychological and Knowledge constraints.

UNIT-V

Genetic Regulation of Growth: The Human Genome and Gene, Genetics of selected performance phenotypes- Hormonal Regulation of Growth: Types of hormone and their actions-Physical Activity as a factor in Growth, maturation and Performance: Physical Activity with Stature, body weight, body composition, physique, specific tissues and biological maturity-concept of trainability.

UNIT ACTIVITIES:

Chart for Growth and Aging, Pre and postnatal Development, Chronological Age Chart for Systems and Organs of the Body, Height and Weight Chart, Motor Development Activities, Functional Development Exercise, Physical Activity for Growth and Development.

REFERENCES

Kathleen M.Haywood., & Nancy Getchell., (2009). *Life Span motor Development* (5th Ed.,), Champaign, IL: Human Kinetics,

Robert M. Malina., Claude Bouchard & oded Bar-Or., (2004). *Growth, Maturity and Physical Activity* (2nd Ed.,), Champaign, IL: Human Kinetics.

NAPSE., (2005). *Physical Education for Lifelong Fitness* (2nd Ed.,), Champaign, IL: Human Kinetics.

Allen W. Jackson., James R. Morrow., Jr.David W. Hill & Rod K. Dishman., (2004). *Physical Activity for Health and Fitness*, Champaign, IL: Human Kinetics.

Cratty Bryant, J. (1975). *Movement Behaviour and Motor Learning*. Philadelphia Lea & Febiger.

CORE IX
PHYSICAL FITNESS AND WELLNESS – LPEC33

Unit I – Introduction
Meaning and Definition" of Physical Fitness, Physical Fitness Concepts and Techniques, Principles of physical fitness, Physiological principles involved in human movement. Components of Physical Fitness-Leisure time physical activity and identify opportunities in the community to participate in this activity. Current trends in fitness and conditioning, components of total health fitness and the relationship between physical activity and lifelong wellness.

Unit II – Nutrition
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, the effects of performance enhancement drugs

Unit III – Aerobic Exercise
Cardio respiratory Endurance Training; proper movement forms, i.e., 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 i.e. 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, exercisebands 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 (i.e. dynamic, static), Develop basic competency in relaxation and breathing techniques. Pilates, Yoga.

REFERENCES:

Allen W. Jackson et al, (1999). *Physical Activity for Health and Fitness.* USA: Human Kinetics.
Bettina M. Jasper, (1999). *Train your Brain.* Meyer and Meyer sports: UK.
David K. Miller & T. Earl Allen, (1989). *Fitness, A life time commitment.* Delhi: Surjeet Publication.
Debi Pillarella & Scott O. Roberts, (1996). *Fitness Stepping.* USA: Human Kinetics.
Dificore Judy, (1998). *The complete guide to the postnatal fitness*. London: A & C Black Publishers Ltd. 35 Bedford row.
Edmund R. Burke, (1996). *Home Fitness: Handbook*. USA: Human Kinetics.
Gudrun Paul, (2000). *Aerobic Training.* Meyer and Meyer sports: Uk.
Jerrold S. Greenberg et al.,(2004). *Physical Fitness and Wellness (3rd Ed.),* USA: Human Kinetics.
Joseph P. Winnick & Francis X. Short, (1999).*Physical Fitness Training Guide.* USA: Human Kinetics.
Robert Malt. (2001). *90 day fitness plan.* New York: D.K. publishing, Inc. 95, Madison Avenue.
Warner W.K. Oeger & Sharon A. Hoeger, (1990). *Fitness and Wellness*, Morton Publishing Company.

ELECTIVE
(A): SPORTS JOURNALISM AND MASS MEDIA – LPEEE

UNIT I Introduction
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
Concept of 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
Mass Media in Journalism: Radio and T.V. Commentary – Running commentary on the radio – Sports expert's comments. Role of Advertisement in Journalism. Sports Photography: Equipment- Editing – Publishing.

UNIT IV Report Writing on Sports
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 Newspaper. Organization of Press Meet.

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

REFERENCE:

Ahiya B.N. (1988). *Theory and Practice of Journalism: Set to Indian context (3rd Ed)*. Delhi: Surjeet Publications.

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

Bhatt S.C. (1993). *Broadcast Journalism Basic Principles*. New Delhi Haranand Publication.

Dhananjay Joshi, (2010). Value Education in Global Perspective. 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.* New Delhi: Macmillan India Limited.

Varma A.K. (1993). *Journalism in India from Earliest Times to the Present Period*. Sterling publication Pvt. Ltd.

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

ELECTIVE
(B): SPORTS ENGINEERING – LPEEF

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, Mechanical principles in movements such as lifting, walking, running, throwing, jumping, pulling, pushing etc.

Unit- III Sports Dynamics
Introduction to Dynamics, Kinematics to particles – rectilinear and plane curvilinear motion coordinate system. Kinetics of particles – Newton's laws of Motion, Work, Energy, Impulse and momentum.

Unit- IV 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, etc. Requirements: Air ventilation, Day light, Lighting arrangement, Galleries, Store rooms, Office, Toilet Blocks (M/F), Drinking Water, Sewage and Waste Water disposal system, Changing Rooms (M/F), 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. Building process:- design phase (including brief documentation), construction phase functional (occupational) life, Re-evaluation, refurnish, demolish. Maintenance policy, preventive maintenance, corrective maintenance, record and register for maintenance.

Unit – V Facility life cycle costing
Basics of theoretical analysis of cost, total life cost concepts, maintenance costs, energy cost, capital cost and taxation

REFERENCES:

Franz K. F. et. al., (2013). *Handbook of Sports Technology and Engineering.* Routledge. Steve Hake, (1996). *The Engineering of Sport* (CRC Press, 1996).

Franz K. F. et. al.,(2007). *Editor The Impact of Technology on Sports II* .CRC Press.

Helge N., (2009).*Sports Aerodynamics.* Springer Science & Business Media.

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

Jenkins M., (2003). *Materials in Sports Equipmen.* Volume I (Elsevier, 2003)

Colin White, Projectile Dynamics in Sport: Principles and Applications

Eric C. et al., (2010). *Editor Sports Facility Operations Management.* Routledge.

SEMESTER IV
CORE X
SPORTS MANAGEMENT AND CURRICULUM DESIGN IN PHYSICAL EDUCATION – LPEC41

UNIT I – Introduction to Sports Management
Definition, Importance. Basic Principles and Procedures of Sports Management. Functions of Sports Management. Personal Management: Objectives of Personal Management, Personal Policies, Role of Personal Manager in an organization, Personnel recruitment and selection.

UNIT II – Program Management
Importance of Programme development and the role of management, Factors influencing programme development. Steps in programme development, Competitive Sports Programs, Benefits, Management Guidelines for School, Colleges Sports Programs, Management Problems in instruction programme, Community Based Physical Education and Sports program.

UNIT III – Equipments and Public Relation
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.

UNIT IV – Curriculum
Meaning and Definition of Curriculum. Principles of Curriculum Construction: Students centred, Activity centred, Community centred, Forward looking principle, Principles of integration, Theories of curriculum development, Conservative (Preservation of Culture), Relevance, flexibility, quality, contextually and plurality. Approaches to Curriculum; Subject centred, Learner centred and Community centred, Curriculum Framework**.**

UNIT V – Curriculum Sources
Factors that affecting curriculum: Sources of Curriculum materials – text books – Journals – Dictionaries, Encyclopaedias, Magazines, Internet. Integration of Physical Education with other Sports Sciences – Curriculum research, Objectives of Curriculum research – Importance of Curriculum research. Evaluation of Curriculum, Methods of evaluation.

REFERENCES:

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.
Bucher A. Charles, (1993). *Management of Physical Education and Sports (10th ed.,)* St. Louis: Mobsy Publishing Company.
Carl, E, Willgoose. (1982). *Curriculum in Physical Education, London*. Prentice Hall.
Chakraborthy & Samiran. (1998). *Sports Management*. New Delhi: Sports Publication.
Charles, A, Bucher & March, L, Krotee. (1993). Management *of Physical Education and*
Chelladurai, P. (1999). *Human Resources Management in Sports and Recreation.* Human Kinetics.

CORE XI
YOGIC SCIENCES – LPEC42

Unit I – Introduction

Meaning and Definition of Yoga. Astanga Yoga: Yama, Niyama, Aasna, Pranayama, Prathyahara, Dharana, Dhyana, Samadhi, Concept of Yogic Practices; Principles of Breathing – Awareness – Relaxation, Sequence – Counter pose – Time – Place – Clothes – Bathing – Emptying the bowels – Stomach – Diet – No Straining – Age – Contra- Indication – Inverted asana – Sunbathing.

Unit II – Aasanas and Pranayam

Loosening exercise: Techniques and benefits. Asanas: Types- Techniques and Benefits, Surya Namaskar: Methods and benefits. Pranayama: Types- Methods and benefits. Nadis: Meaning, methods and benefits, Chakras: Major Chakaras- Benefits of clearing and balancing Chakras.

Unit III – Kriyas

Shat Kriyas- Meaning, Techniques and Benefits of Neti – Dhati – Kapalapathi- Trataka – Nauli – Basti, Bandhas: Meaning, Techniques and Benefits of JalendraBandha, JihvaBandha, UddiyanaBandha, MulaBandha.

Unit IV – Mudras

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

Unit V – Yoga and Sports

Yoga Supplemental Exercise – Yoga Compensation Exercise – Yoga Regeneration Exercise-Power Yoga. Role of Yoga in Psychological Preparation of athlete: Mental Wellbeing, Anxiety, Depression Concentration, Self Actualization. Effect of Yoga on Physiological System: Circulatory, Skeletal, Digestive, Nervous, Respiratory, Excretory System.

REFERENCES:

George Feuerstein. (1975). *Text Book of Yoga*. London: Motilal Bansaridass Publishers (P) Ltd.

Gore. (1990). *Anatomy and Physiology of Yogac 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.

Karbelkar. N.V.,(1993). *Patanjal Yogasutra Bhashya* (Marathi Edition) Amravati: Hanuman Vyayam Prasarak Mandal.

Kenghe. C.T., (1976). *Yoga as Depth-Psychology and para-Psychology* (Vol-I): Historical Background, Varanasi: Bharata Manishai.

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

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

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

Thirumalai Kumar. S., & Indira. S., (2011). *Yoga in Your Life*, Chennai: The Parkar Publication.

Tiwari. O.P., (1998). *Asanas -Why and How*. Lonavala: Kaivalyadham.

DISSERTATION – LPEP41

1. A candidate shall have dissertation for M.P.Ed. – IV Semester and must submit his/her Synopsis and get it approved by the Head of Department on the recommendation of D.R.C. (Departmental Research Committee).
2. A candidate selecting dissertation must submit his/her dissertation not less than one week before the beginning of the IVth Semester Examination.
3. The candidate has to face the Viva-Voce conducted by DRC.

ELECTIVE
(A): VALUE AND ENVIRONMENTAL EDUCATION – LPEEG

UNIT I – Introduction to Value Education.
Values: Meaning, Definition, Concepts of Values. Value Education: Need, Importance and Objectives. Moral Values: Need and Theories of Values. Classification of Values: Basic Values of Religion, Classification of Values.

UNIT II – Value Systems
Meaning and Definition, Personal and Communal Values, Consistency, Internally consistent, internally inconsistent, Judging Value System, Commitment, Commitment to values.

Unit- III – Environmental Education
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 & prohibition of plastic bag / cover, Role of school in environmental conservation and sustainable development, Pollution free eco-system.

Unit - IV Rural Sanitation and Urban Health
Rural Health Problems, Causes of Rural Health Problems, Points to be kept in Mind for improvement of Rural Sanitation, Urban Health Problems, Process of Urban Health, Services of Urban Area, Suggested Education Activity, Services on Urban Slum Area, Sanitation at Fairs & Festivals, Mass Education.

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

REFERENCES:

Miller T.G. Jr., (1971). *Environmental Science* (Wadsworth Publishing Co.
Odum, E.P. (1971). *Fundamentals of Ecology.* U.S.A.: W.B. Saunders Co.
Rao, M.N. & Dutta, A.K. (1987). *Waste Water Treatment.* Oxford & IBH Publication Co. Pvt. Ltd.
Townsend C. et al., *Essentials of Ecology*. Black well Science
Heywood, V.H. & Watson V.M., (1995). *Global biodiversity Assessment*. U.K.: Cambridge University Press.
Jadhav, H. & Bhosale, V.M. (1995).*Environmental Protection and Laws*. Delhi: Himalaya Pub. House.
Mc Kinney, M.L. & Schoel, R.M. (1996). *)Environmental Science System and Solution*. Web enhanced Ed.
Miller T.G. Jr., Environmental Science. Wadsworth Publishing Co.

ELECTIVE
(B): EDUCATION TECHNOLOGY IN PHYSICAL EDUCATION AND SPORTS – LPEEH

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: Telecast and Video recordings Strengths and limitations, Use of Television and CCTV in instruction and Training, Video Conferencing, SITE experiment, countrywide classroom project and Satellite based instructions. Use of animation films for the development of children's imagination.

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. etc. Procedure and organization of Teleconferencing/Interactive video-experiences of institutions, schools and universities. Recent experiments in the third world countries and pointers for, India with reference to Physical education. Recent trends of Research in Educational Technology and its future with reference to education**.**

REFERENCES:

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

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

Education and Communication for development, O. P. Dahama, O. P. Bhatnagar, Oxford Page 68 of 71 IBH Publishing company, New Delhi

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

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

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

MODEL QUESTION PAPER
M.P.Ed. DEGREE EXAMINATION

Time: Three hours **Maximum: 75 Marks**

PART - A
Answer ALL the Questions (Objective type questions)

(10x1=10)

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

PART - B
Answer ALL the Questions

(5x5=25)

11. a)
    (OR)
    b).
12. a)
    (OR)
    b).
13. a).
    (OR)
    b)
14. a)
    (OR)
    b)
15. a)
    (OR)
    b).

PART - C
Answer all the Questions

(5x8=40)

16. a)
    (OR)
    b).
17. a)
    (OR)
    b).
18. a).
    (OR)
    b)
19. a)
    (OR)
    b)
20. a)
    (OR)
    b).

REGULATION, SCHEME OF EXAMINATION AND SYLLABUS FOR THE MASTER OF PHILOSOPHY IN PHYSICAL EDUCATION (M.Phil) COURSE (2016-17 Onwards)

1. ELIGIBILITY FOR ADMISSION

The following conditions should be fulfilled for admission to the Master of Philosophy in Physical Education (M.Phil) degree course (one year):

a) Candidates who have passed post graduate degree in Physical Education (M.P.Ed., M.P.E., and M.P.E.S.) of any University recognized by the Syndicate of this University with not less than 50% marks.
b) Admission shall be made either on the basis of marks obtained in the qualifying examination and also in the selection test conducted by the University.
c) There shall be reservation of seats for SC/ST/OBC as per the rules of the State/ Central Government.

2. DURATION OF THE COURSE

Duration of the course is one academic year with two semesters. The University Examination will be held in December/January under the odd semester and in May/June under the even semester of every academic year.

3. COURSE OF THE STUDY

The course structure shall consist of two papers in the first semester and one paper and dissertation which includes Viva-voce examination will be conducted in the second semester by the Internal and External examiners.

The theory paper consists of internal and external assessment. The internal assessment marks awarded by the department shall be added to the marks obtained at the university examination in each theory paper calculating the percentage of marks. A candidate shall be deemed to have passed the written examination and thesis with 50% as minimum in the university external examination and if he/she obtains not less than 50% marks of the total aggregate marks.

4. ATTENDANCE

A student shall have to get 75% percentage of attendance in theory classes to appear for the university examination.

M.PHIL PHYSICAL EDUCATION SCHEME OF EXAMINATION 2016-17 ONWARDS

FIRST SEMESTER					
Subject Code	**Subject Name**	**Credits**	**Marks**		
			Int.	**Ext.**	**Total**
DTPEC1	Research Methods and Advanced Statistics	8	25	75	100
DTPEC2	Measurement and evaluation in Human Performance	8	25	75	100
DTPEE1 DTPEE2 DTPEE3 DTPEE4 DTPEE5	Elective (any one) a) Exercise Management b) Sports Training c) Exercise Physiology d) Sports Psychology e) Sport Management	8	25	75	100
SECOND SEMESTER					
DTPEDV	Dissertation and Viva voce	16	25	75	100
	Total	**40**	**400 marks**		

PAPER - I
RESEARCH METHODS AND ADVANCED STATISTICS

UNIT - I

1.1 Meaning, Nature, Need and Scope of Research in Physical Education
1.2 Types of Research
1.3 Location and Criteria for Selection of Problem
1.4 Steps in the Research Process
1.5 Literature – Purpose, Sources and Search techniques.

UNIT - II

2.1 Organisation of the Research report
2.2 Meaning and Types of Variables in Research
2.3 Sources of Invalidity – Threats to Internal and External Validity
2.4 Research Design and Types of Designs
2.5 Writing the Research Proposal, synopsis and abstract

UNIT - III

3.1 Basic concepts of Descriptive and Inferential Statistics, Parametric Statistics
3.2 T-test & ANOVA for Simple and Repeated groups with follow-up test
3.3 Analysis of Covariance (ANCOVA) & Follow-up test
3.4 Pearson correlation, Partial and Multiple Correlation
3.5 Using correlation for prediction (Regression equation)

UNIT – IV

4.1 Sampling Techniques
4.2 Non-Parametric tests; Man Whitny U test, Sign Test
4.3 Kruskal-Wallis analysis of ranks,
4.4 Spearman Rank order correlation and chi square.
4.5 Types of Error in Research

UNIT - V

5.1 SPSS Package – Introduction and application
5.2 Creating, saving and opening a data file, Naming the Variables
5.3 Data entry and analysis of descriptive statistics
5.4 T-test, ANOVA, ANCOVA and Correlation – Data Entry and analysis with SPSS
5.5 Application of computer in research and statistics

REFERENCES

Clarke, David H. Clarke, Harrison H. ***Research Process in Physical Education***, New Jersey: Prentice Hall Inc. 1984.

Jerry R. Thomas, Jack K. Nelson and Stephen J. Silverman., ***Research Methods in Physical Activity (5th Ed)***, New York: Human Kinetics. 2005.

Chris Gratton and Ian Jones., ***Research Methods for Sports Studies***, London: Routledge Taylor & Francis Group, 2004.

Kothari C.R., **Research Methodology** (2nd Ed), New Delhi: New Age International Pvt., 2004.

K.D. Broota., ***Experimental Design in Behavioural Research,*** New Delhi: New Age International Publishers, 2006.

PAPER - II
MEASUREMENT AND EVALUATION IN HUMAN PERFORMANCE

UNIT-I

1.1 Nature of Measurement and Evaluation-Domains of Human Performance.
1.2 Purpose of Measurement, Testing and Evaluation.
1.3 Classification of Tests
1.4 Criteria for selection and construction of tests-Reliability, Validity and Objectivity.
1.5 Qualitative versus Quantitative Measurement.

UNIT-II

2.1 Grading– Norm-referenced and Criterion-referenced grading systems.
2.2 Process of Grading, Consistence in Grading, Grading Mechanics
2.3 Fitness test for Senior Citizen.
2.4 Fitness test for Adapted Children.
2.5 Fitness test for Children

UNIT-III

3.1 Body Composition Assessment
3.2 Health Related Physical fitness Assessment
3.3 Performance Related Physical fitness Assessment
3.3 Postural and Body Alignment Tests
3.4 Anthropometrical Measures

UNIT-IV

4.1 Sports skill test – Basketball, Badminton and Volleyball
4.2 Sports skill test – Tennis, Hockey and Football
4.3 Psychological Measures with equipments, Techniques and Questionnaire
4.4 Physiological Assessment
4.5 Overview of other measures like Hematological, Bio-chemical, Psychosomatic, Socio-economic, Psychomotor etc.,

UNIT-V

5.1 Introduction to Computers-Components of Computer-Input and Output Devices
5.2 MS Word –Creating, Editing, Formatting, Page-setup, Printing Options, mail merge
5.3 MS Excel- Creating, Editing, Formatting, Formula, Database
5.4 MS PowerPoint- Creating, Editing, Formatting, Slide-Design and Setup
5.5 Internet and Multimedia, Application of computer, internet and multimedia in Physical Education and Sports.

REFERENCES

Barrow, Harold M & McGee, Rosemary.A ***Practical Approach to Measurement in Physical Education***, Philadelphia: Lea and Febiger. 1979.

Clake, H. Harrison. ***Application of Measurement to Health and Physical Education***, New Jersey: Prentice Hall Inc. 1976.

Safrit, Margaret J. ***Introduction to Measurement in Physical Education and Exercise Science***, St. Louis: Mosby. 1995.

Edmund O. Acevedo and Michael A. Starks., ***Exercise Testing and Prescription lab Manual***, USA: Human Kinetics Publishers, 2003.

Sunil Chauhan, Akash Saxena, Kratika Gupta, ***Funadamentals of Computer***, Firewall Media, 2006.

Roberta E.Rikli & C.Jessie Jones. (2001). ***Senior Fitness Test Manual***, USA: Human Kinetics Publishers, 2001.

Michael Horvat, Martin E.Block & Luke E.Kelly. (2007). ***Development and Adapted Physical Activity Assessment***, USA: Human Kinetics Publishers, 2007.

Gregory J.Welk. ***Physical Activity Assessments for Health Related Research***, USA: Human Kinetics Publishers, 2002.

Vivian H.Heyward & Dale R.Wagner. ***Applied Body Composition Assessment***, USA: Human Kinetics Publishers, 2004.

PAPER– III (a) - Elective
EXERCISE MANAGEMENT

UNIT – I Introduction
1.1 Introduction to Exercise Management
1.2 Families of Exercise Tests Measures
1.3 Exercise and Medicines
1.4 Risk, Cost and Benefits of exercise
1.5 Considerations regarding Physical Activity for Children and Youth

UNIT –II Cardio Pulmonary Diseases
2.1 Myocardial Infraction
2.2 Angina and Silent Ischemia
2.3 Hypertension and Chronic Heart Failure
2.4 Chronic Obstructive and Restrictive Pulmonary Disease
2.5 Asthma

UNIT–III–Metabolic Disease/Immunological/Hematological Disorders
3.1 End stage Metabolic Disease: Renal and Liver Failure
3.2 Diabetes
3.3 Hyperlipedemia and Obesity
3.4 Chronic Fatigue Syndrome and Anemia
3.5 Bleeding and Clotting Disorders

UNIT – IV - Orthopedic Disease/Neuromuscular disorders
4.1 Arthritis
4.2 Low back syndrome
4.3 Osteoporosis
4.4 Stroke and Brain Injury
4.5 Spinal cord disabilities: Paraplegia and Tetraplegia

UNIT – V – Cognitive, Psychological and Sensory Disorders
5.1 Mental retardation
5.2 Alzheimer's Disease
5.3 Mental Illness
5.4 Deaf and Hard-of-Hearing
5.5 Visual Impairment

REFERENCES

J. Larry Durstine and Geoffrey E. Moore., ***Exercise Management for Persons with Chronic Diseases and Disabilities***, USA: Human Kinetics, 2003.

Allen W. Jackson et al, ***Physical Activity for Health and Fitness,*** USA: Human Kinetics, 1999.

Jerrold S. Greenberg et al., ***Physical Fitness and Wellness (3rd Ed,),*** USA: Human Kinetics, 2004.

Joseph P. Winnick and Francis X. Short, ***Physical Fitness Training Guide,*** USA: Human Kinetics, 1999.

Frederick C. Hatfield, ***Fitness: The Complete Guide,*** Official Book of ISSA, 2004.

Darryl E. Barnes, ***Action Plan for Diabetes***, USA:Human Kinetics Publishers, 2004.

PAPER– III (b) – Elective
SPORTS TRAINING

UNIT-I (Introduction)
1.1 Principles of training and conditioning
1.2 Structure of training
1.3 Components of load
1.4 Load and Adaptation
1.5 Circuit, Interval, Weight, Fartlek and Plyometric trainings

UNIT-II (Strength and Speed development)
2.1 Forms of strength and Characters of strength
2.2 Means and methods to develop strength
2.3 Forms of speed and Characters of speed
2.4 Means and methods to developing speed
2.5 Strength and speed training for women and children.

UNIT-III (Endurance, Flexibility and Coordination development)
3.1 Types of endurance and Means and methods to improve Endurance
3.2 Types of Flexibility and Means and methods to improve Flexibility
3.3 Types of Coordination and Means and methods to improve Coordination
3.4 Physiological adaptations to training
3.5 Characteristics of Endurance, Flexibility and Coordination

UNIT-IV (Periodisation)
4.1 Physical preparation
4.2 Technical preparation
4.3 Tactical preparation
4.4 Psychological Preparation
4.5 Overtraining, Detraining and Retraining

UNIT -V
5.1 Effect of drugs, alcohol and smoking on performance
5.2 Effect of climate changes and high altitude on performance
5.3 Effect of diet on performance
5.4 Effect of travel on Performance
5.5 Effect of sleep and rest on performance

REFERENCES

Bill Foren, ***High Performance Sports Conditioning***, USA: Human Kinetics Publishers, 2001.
Tudor O. Bompa, ***Periodisation Training Sports,*** USA: Human Kinetics Publishers, 1999.
Dick, Frank W., ***Sports Training Principles***, London: Leipus Book. 1980
Singh, Hardayal, ***Science of Sports Training***, New Delhi: D. A.V. Publications. 1991.
Thomas R. Baechle and Roger W. Earle, ***Essentials of Strength Training and Conditioning (2nd Ed,),*** USA: Human Kinetics Publishers, 2000.
Tudor O. Bompa, ***Periodisation,*** USA: Human Kinetics Publishers, 1999.

PAPER– III (c) – Elective
EXERCISE PHYSIOLOGY

UNIT- I

1.1 Structure of muscles, function of muscles and fiber characteristics
1.2 Muscular theories of contraction- sliding filament models of contraction
1.3 Mechanical and dynamic properties of muscles contraction
1.4 Types of muscles
1.5 Effect of exercise on muscular system

UNIT- II

2.1 Nervous system and propriocetors
2.2 The motor neuron and synapses
2.3 The action potential and transmission of the impulse
2.4 Muscles spindle and Golgi tendon organ, Joint receptors
2.5 Effect of exercise on nervous system

UNIT- III

3.1 Mechanism of breathing
3.2 Lung volume and pulmonary pressures
3.3 Regulation of respiration
3.4 Oxygen and carbon-di-oxide transport system.
3.5 Effect of exercise on respiratory system

UNIT- IV

4.1 Cardiac cycle- cardiac output- cardiac index- stroke volume
4.2 Sterling's law of heart
4.3 Nervous and chemical control of the heart
4.4 Effect of exercise on cardiac output
4.5 Effect of exercise on muscles blood flow

UNIT- III

5.1 Metabolism and energy transfer
5.2 Anaerobic metabolism
5.3 Aerobic metabolism
5.4 Energy release
5.5 Energy cost for various sports activities

REFERENCES

Mathew D.K. and Fox E. L, ***Physiological Basis of Physical Education and Athletics***, W. B. Saunders Co: Philadelphia, 1971.

Jay Hoftman, ***Physiological Aspects of Sports training and Performance*****,** USA: Human Kinetics Publishers, 2000.

Jack H. Wilmore, David L. Costill and W. Larry Kenny, ***Physiology of Sports and Exercise (4th Ed.),*** USA: Human Kinetics Publishers, 2008.

Herbert A. Devries and Terry J. Housh, ***Physiology of Exercise (5th Ed,),*** Brwon and Benchmark Publishers, 1994.

Christine M. Drews, ***Physiology of Sports and Exercise***, USA: Human Kinetics Publishers, 1999.

PAPER– III (d) – Elective
SPORTS PSYCHOLOGY

UNIT- I

1.1 Meaning and Nature of Sports Psychology
1.2 The history and development of sports psychology
1.3 Development of Sports Psychology
1.4 General Factors affecting learning and performance
1.5 Motivation of children and youth in sports

UNIT- II

2.1 Meaning of the term perceptual motor learning
2.2 The retention of motor skills
2.3 Transfer of skill
2.4 Learning Curve and its role in learning motor skills
2.5 Theories of Learning

UNIT- III

3.1 Motivation in sports
3.2 Theories of motivation
3.3 Achievement motivation and level of aspiration
3.4 Methods of assessing aspiration level motivation and motivation
3.5 Psychological Skill training

UNIT- IV

4.1 Emotions in Sports performance
4.2 Aggression and theories of aggression
4.3 Issue and controversies in physical activity and the psychology development
4.4 Mental plan
4.5 Psychological preparation for competition

UNIT- V

5.1 Physical activity and the psychology development of the handicapped
5.2 Personality of sportsmen and coach
5.3 Nature of personality heredity and personality traits of sports men
5.4 Assessment of personality traits
5.5 Implication for the coach

REFERENCES

Cratty Bryant, J. ***Movement Behaviour and Motor Learning***. Philadelphia Lea & Febiger, 1975.

Kamlesh, M. L. ***Psychology of Physical Education and Sports***. Metropolitan Book Co. Pvt. Ltd. 1983.

Singer Robert N. ***Motor Learning and Human Performance***, New York: Macmillan Publishing Co. 1975.

Diane L. Gill. ***Psychological Dynamics of Sport***. New York: Human Kinetics Publishers Inc. 1986.

Anthony Laker, ***The Sociology of Sport and Physical Education***, Routledge Taylor and Francis Group, 2002.

PAPER– III (e) – Elective
SPORTS MANAGEMENT

UNIT - I

1.1 History and Evaluation of Management
1.2 Principles of Sports Management
1.3 Polices of Sports Management
1.4 Standard Practices of Sports Management
1.5 Functions of Sports Management

UNIT - II

2.1 Legal aspects of Physical Education
2.2 Administration in Sports
2.3 Community involvement and Public relations
2.4 Stress, burnout and conflicts in Management
2.5 Management of Recreation and Leisure activities

UNIT - III

3.1 Functions in the Process of Management and Effective communication
3.2 Planning and organizing activity based programmes
3.3 Controlling the Activity Based Programmes
3.4 Delegation of duty in the activity based programmes
3.5 Staffing and Leading personal in activity based programme

UNIT – IV

4.1 Office, Class and Staff Management
4.2 Managing sports facilities – Designing and Planning sports facilities, sports facility specifications, standards and structures.
4.3 Managing of Sports equipments–Selection, purchase and maintenance security.
4.4 Finance Management
4.5 Risk Management

UNIT - V

5.1 Training for Administrators/Manager for better performance
5.2 Behaviour Management
5.3 Crisis Management
5.4 Event management
5.5 Career opportunities in Sports Management

REFERENCES

Chelladurai .P. ***Managing organizations for Sports and Physical Activity***, Holcomb Hathaway Publishers: Arizona, 2001.

Davis Kathleen A., ***Sports Management***, WCB Brown & Benchmark, Iowa, 1994.

Lisa Pike Masteralexis, Carol A. Barr and Mary A. Hums, **Principles and Practice of Sports Management**, Jone and Bartlett Publishers, 2005.

David C. Watt, ***Sports Management and Administration,*** Routledge Taylor & Francis Group, 2003.

ASEP, ***Event Management for Sport Directors***, USA: Human Kinetics, 1996.

ASEP, ***Personal Management for Sport Directors***, USA: Human Kinetics, 1999.

MODEL QUESTION PAPER
M.Phil, DEGREE EXAMINATION

Time: Three hours **Maximum: 75 Marks**

Answer ALL the questions
Each question carries 15 marks

(5 x 15 = 75)

1. a)
   (OR)
   b)
2. a)
   (OR)
   b)
3. a)
   (OR)
   b)
4. a)
   (OR)
   b)
5. a)
   (OR)
   b)