

(2024-2025 onwards)

**COURSE STRUCTURE WITH CREDITS DISTRIBUTION
(MA,/M.Sc. - Physical Education)**

UG SEMESTER-VII/PG SEMESTER-I

Course Code		Course Name	Maximum Credits (20)	CIE	ETE
E020701T	Core	Research Process in Physical Education and Sports Sciences	4 Credits	25	75
E020702T	Core	Applied statistics in Physical Education and sports Sciences	4 Credits	25	75
E020703T	Core	Test, Measurement and Evaluation in Physical Education & sports Sciences	4 Credits	25	75
E020704T	Discipline Centric Elective (Select any one)	Sports Management	4 Credits	25	75
E020705T		Sports and Exercise Physiology			
E020706P	Discipline Centric Elective (Select any one)	Track & Field\ Gymnastics\ Yoga\ Combative sports	4 Credits	25	75
E020707P		Team game\Indigenous Sport\Racket Game			

UG SEMESTER-VIII (for Four Year Undergraduate Programme)

PG SEMESTER- II

Course Code		Course Name	Maximum Credits (20)	CIE	ETE
E020801T	Core	Scientific Principles of Sports Training	04 Credits	25	75
E020802T	Core	Yogic Sciences	04 Credits	25	75
E020803R	Research Project	Research Project	12 Credits	-	100

Or

PG SEMESTER-II (for Two Year Post Graduate Programme- lateral entry)

Course Code		Course Name	Maximum Credits (20)	CIE	ETE
E020801T	Core	Scientific Principles of Sports Training	4 Credits	25	75
E020802T	Core	Yogic Sciences	4 Credits	25	75
E020803T	Discipline Centric Elective (select any one)	Sports Technology	4 Credits	25	75
E020804T		Physical Fitness and wellness			
E020805P	Discipline Centric Elective (select any one)	Track & Field\Gymnastics\Yoga\Combative sports	4 Credits	25	75
E020806P		Team game\Indigenous Sport\Racket Game			
E020807T	Ability Enhancement Course (select any one)	Kinesiology and Sports Biomechanics	4 Credits	25	75
E020808T		Gender, Disability & Inclusive Sport Education			

PG SEMESTER-III/PG SEMESTER-I (One Year PG Programme-Lateral Entry)

Course Code		Course Name	Maximum Credits (20)	CIE	ETE
E020901T	Core	Health Education and Sports Nutrition	4 Credits	25	75
E020902T	Core	Sports Psychology	4 Credits	25	75
E020903T	Discipline Centric Elective (select any one)	ICT & Education Technology in Physical	4 Credits	25	75
E020904T		Sports Medicine			
E020905T		Sports Journalism and Mass Communication			
E020906P	Discipline Centric Elective (select any one)	Track & Field\ Gymnastics\ Yoga\ Combative sports	4 Credits	25	75
E020907P		Team game\Indigenous Sport\Racket Game			
E020908T	Ability Enhancement Course (select any one)	Athletic Care & Rehabilitation	4 Credits	25	75
E020909T		Curriculum Designs in Physical Education			

PG SEMESTER-IV/PG SEMESTER-II (One Year PG Programme)

Course Code		Course Name	Maximum Credits (20)	CIE	ETE
E021001R	MRP	MASTER DISSERTATION	20 Credits	-	100

**Detailed Syllabus of M.A., M.Sc. in Physical Education
M.A. / M.Sc. Physical Education
First Semester
Course Code - E020701T**

Course Title: RESEARCH PROCESS IN PHYSICAL EDUCATION AND SPORTS SCIENCES

THE COURSE OBJECTIVES ARE:

1. To develop understanding of the basic framework of research process.
2. To identify appropriate research topics.
3. To identify various sources of information for literature review and data collection.
4. Select and define appropriate research problem, parameters and research questions.
5. To develop an understanding of various research designs and techniques.
6. Write a research proposal and report.
7. Organize and conduct scientific research in a more appropriate manner
8. To develop an understanding of the ethical dimensions of conducting applied research.

THE STUDENT LEARNING OUTCOMES ARE:

1. To define research and describe the research process and research methods.
2. To understand the research context within the area of physical Education and sports.
3. To understand the processes and requirements for conducting successful research in physical education and sports.
4. Understand and apply basic research methods.
5. Students use print and electronic library resources effectively and appropriately.
6. To understand the process of sampling, the uses of questionnaires as data-gathering instruments, how a survey is carried out in terms of process and method, the uses of surveys and to be able to capture their own data.
7. Understand and apply basic research methods including research design, data analysis, and interpretation.
8. Students develop testable hypotheses, differentiate research design, evaluate aptness of research conclusions, and generalize them appropriately.
9. Students design and conduct quantitative or qualitative research studies in laboratory or field settings.
10. Students use research data to formulate or evaluate new research questions, using reason and persuasion in a logical argument.
11. To know how to apply the basic aspects of the research process in order to plan and execute a research proposal and research report.
12. To be able to present, review and publish scientific articles.

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.
- Identification of research questions.
- Research Objectives.
- Limitation, Delimitation, Hypothesis
- Qualities of a good researcher

UNIT-II: METHODS OF RESEARCH

- Descriptive Methods of Research: Survey Study, Case study.
- Introduction of Historical Research, Steps in Historical Research.
- Sources of Historical Research: Primary Data and Secondary Data.
- Historical Criticism: Internal Criticism and External Criticism.
- 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.
- Tools & Techniques of Data Collecting.

UNIT-III : SAMPLING

- Meaning and Definition of Sample and Population.
- Types of Sampling; Probability Methods; Systematic Sampling, cluster sampling, Stratified Sampling.
- Sampling Techniques.
- Area Sampling
- Multistage Sampling.
- Non- Probability Methods.
- Convenience Sample.
- Judgment Sampling.
- Quota Sampling.

UNIT - IV: RESEARCH PROPOSAL AND RESEARCH REPORT

- Defining Research Project
- Writing a Research Proposal and Research Report.
- Footnotes & Bibliography, E-Referencing
- Ethical Issues in Research: Areas of Scientific Dishonesty, Ethical issues regarding copyright. Responsibilities of Researcher.
- Working Ethics with Faculty, Protecting Human Participants.

- Plagiarism

TEACHING LEARNING STRATEGIES:

The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

ACTIVITIES:

Lecture/Laboratory Work/ Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRIC:

Classroom Test. Project Work. Assignments. Presentations.

TEXT & REFERENCES:

- Best & Kahn (2003) Research in Education, 10 Ed. New Jersey; Prentice Hall, Inc.
- Clarke David. H & Clarke H, Harrison (1984) Research processes in Physical Education, New Jersey: Prentice Hall Inc.
- Craig Williams and Chris Wragg (2006) Data Analysis and Research for Sport and Exercise Science, London! Routledge Press
- Jerry R Thomas & Jack K Nelson (2000) Research Methods in Physical Activities: Illinois: Human Kinetics.
- Kamlesh, M. L. (1999) Research Methodology in Physical Education and Sports, New Delhi.
- Moses, A.K. (1995) Thesis Writing Format, Chennai; poompugar Pathippagam.
- Rothstain, A (1985) Research Design and Statistics for Physical Education, Englewood Cliffs: Prentice Hall, inc.
- Subramanian, R, Thirumalal Kumar S & Arumugam, C. (2010) Research Methods in Health, Physical Education and Sports, New Delhi; Friends Publication.
- Moorthy A.M. Research Processes in Physical Education (2010); Friends Publication, Ne Delhi.
- Research methodology in physical education and sports science, Prof. Pawan Kumar Pachori, Manisha Publications, New Delhi, 2020
- शारीरिक शिक्षा में अनुसंधान प्रविधियाँ, प्रो० पवन कुमार पचौरी, मनीषा पब्लिकेशन, नई दिल्ली, 2021

Prof. Rajendra Singh (Rajju Bhaiya) University, Prayagraj

**Detailed Syllabus of M.A., M.Sc. in Physical Education
M.A. / M.Sc. Physical Education
First Semester
Course Code - E020702T**

Course Title: APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS

THE COURSE OBJECTIVES ARE:

1. To completely describe a data set, using appropriate descriptive statistics.
2. To interpret a set of descriptive statistics and understand the limitations of each measure.
3. Students shall be able to use and apply a wide variety of specific statistical methods.
4. Students shall know how to organize, manage, and present data.
5. Show ability to explore and organize data for analysis.
6. Students shall be able to use and apply a wide variety of specific statistical methods.
7. Demonstrate understanding of the properties of probability and probability distributions.
8. Demonstrate understanding of the probabilistic foundations of inference.
9. Apply inferential methods relating to the means of Normal distributions.

STUDENT LEARNING OUTCOMES:

1. Know how to organize, manage, and present data.
2. Explore and organize data for analysis.
3. Use and apply a wide variety of specific statistical methods.
4. Demonstrate understanding of the properties of probability and probability distributions.
5. Demonstrate understanding of the probabilistic foundations of inference.
6. Apply inferential methods relating to the means of Normal distributions.
7. Understand the concept of the sampling distribution of a statistic, and in particular describe the behavior of the sample mean.
8. Effectively communicate results of statistical analysis.
9. Demonstrate understanding of statistical concepts embedded in their courses.
10. Demonstrate proficiency in analyzing data using methods embedded in their courses.
11. Demonstrate ability to select appropriate methodologies for analysis based on properties of particular data sets.

UNIT I

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

UNIT II

- Meaning, uses and construction of frequency table
- Meaning, Purpose, calculation and advantages of:
 - Range, Measures of central tendency -Mean, median and mode.
 - Quartile Deviation, Mean Deviation, Standard Deviation, Probable Error.
 - Normal Curve: Meaning of probability - Principles of normal curve - Properties of normal curve.
 - Divergence form normality - Skewness and Kurtosis.

UNIT-III

- Sample Distribution of Means, Standard Error of Mean.
- Testing of Hypothesis- Region of Acceptance & Region of Rejection of Null and Alternative Hypothesis.
- Level of Significance
- Type I and Type II Errors,
- One Tailed and Two Tailed test
- Degrees of Freedom

UNIT-IV

- 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. Post-hoc tests-LSD and Scheffe

TEACHING LEARNING STRATEGIES: The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

ACTIVITIES: Lecture//Laboratory Work/ Field Work/ Outreaching Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRIC: Classroom Test/ Project Work/ Assignments/ Presentations/ Practical Work /Theory lesson plan.

TEXT & REFERENCES:

- Best J. W (1971) Research in Education, New Jersey; Prentice Hall, Inc.
- 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; 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, Senthil Kumar Publications.

**Detailed Syllabus of M.A., M.Sc. in Physical Education
M.A. / M.Sc. Physical Education
First Semester
Course code-E020703T**

Course Title: TEST, MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION

THE COURSE OBJECTIVES ARE:

1. To develop concepts related to Test, Measurement & Evaluation.
2. To construct a strong basis in the evaluation techniques through the various test and measurements method used in physical education.
3. To analyse the physical ability and performance of an individual in various sports.
4. To provide scientific techniques in selection and talent identification through various evaluation and grading process applicable in physical education and sports.
5. To develop the skills and techniques for construction of new tests for various need related to specific Sports Skills.

STUDENT LEARNING OUTCOMES ARE:

1. Explain the basics of measurement and evaluation of various test and measurement techniques.
2. Develop the concepts of measurement and evaluation in physical education and sports.
3. Develop ability to construct new tests for various need related to Physical Education and Sports with scientific authenticity.
4. To analyse various test and performance related to physical education.

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: Selection of Construction of Tests

- Criteria of Test Selection.
 - Factors Affecting Scientific Authenticity.
 - Procedure to establish Scientific Authenticity.
 - Administration of Testing programme, its procedure and follow up.
 - Construction of Test - Knowledge Test & Skill Tests.
- Guidelines for constructing objectives and subjective test (Alternate Choice (True/False). Multiple Choice, Short Answer & Matching Items)

UNIT III: Motor & Physical Fitness Tests

- Meaning and Definition of Motor Fitness and Physical Fitness.

- Tests for Motor Fitness.
- Barrow Motor Ability Test-D
- Muscular Fitness - Kraus Weber Minimum Muscular Fitness Test.
- AAHPERD Health Related Fitness Battery (revised in 1984),
- ACSM Health Related Physical Fitness Test.
- Roger's Physical Fitness Index.
- Harvard step test. 12 minutes Run/Walk Test,
- Multi-stage Fitness Test (Beep test)
- Test of Coordinative Ability: Speed; Power

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.
- Method of Measuring Height: Standing Height, Sitting Height.
- Anaerobic Capacity: Margaria-Kalamen test. Wingate Anaerobic Test
- Anthropometric Measurements:
 - Method of measuring Height: Standing Height, Sitting Height.
 - Method of measuring Circumstance: Arm, Waist, Hip, Thigh.
 - Method of Measuring Skin folds: Triceps, Sub scapular, Suprailia.

TEACHING LEARNING STRATEGIES:

The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

ACTIVITIES:

Lecture/Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

PRACTICUM:

Tests of Unit III & IV should be conducted practically also.

ASSESSMENT RUBRIC:

Classroom Test Project Work/ Assignments/ Presentations/ Practical Work / Theory lesson plan

TEXT & REFERENCES:

- Bangsbo, J. (1994). Fitness training in football: A scientific approach. Bagsvaerd. Denmark:
- Ho+Storm.
- Barron, H. M., & Mchee, R. (1997). A practical approach to measurement in physical education. Philadelphia: Lea and Febiger.

- Barron, H.M. & Mchee, R. (1997). A Practical approach to measurement in physical education. Philadelphia: Lea and Febiger.
- Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi: D.V.S. Publications.
- 2 years B.P.Ed Curriculum 140
- Mathews, D.K., (1973). Measurement in physical education, Philadelphia: W.B. Saunders Company.
- Pheasant, S. (1996). Body space: anthropometry, ergonomics and design of work. Taylor & Francis, New York.
- Phillips, D. A., & Hornak, J. E. (1979). Measurement and evaluation in physical education. New York: John Willey and Sons.
- Sodhi, H.S., & Sidhu, L.S. (1984). Physique and selection of sports-a kin anthropometric study. Patiala: Punjab Publishing House.

**Detailed Syllabus of M.A., M.Sc. in Physical Education
M.A. / M.Sc. Physical Education
First Semester
Course Code : E020704T**

Course Title: SPORTS MANAGEMENT

COURSE OBJECTIVES:

- To describe organization and administration of sports programmes.
- To analyse and interpret sports philosophy, sports sociology, business systems, sports management, public administration and marketing techniques.
- To develop opportunities to construct & design the curriculum of PE in broader aspects realizing the age group, gender consideration and physiological basis.

STUDENT LEARNING OUTCOMES:

Identify issues relevant to modern physical education and sport management. Explore the area as a career perspective.

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 Spots bodies.
- Competitive Sports Programmes, Benefits.
- Management Guidelines for School, College Sports Programmes.
- Management Problems in instruction programme.
- Community Based Physical Education and Sports programme.

Unit III:

- Purchase and Care of Supplies of Equipment.
- Guidelines for selection of equipment and Supplies.
- Purchase of equipment and supplies.
- Equipment Room. Equipment and supply Manager.
- Guidelines for checking, storing, issuing, care and maintenance of supplies and equipment.

- Public Relations in Sports:
- Planning the Public Relation Programme-Principles of Public Relation - Public Relations in School and Communities.
- Public Relation and the Media. Professional Ethics.

Unit - IV: (Practical)

- SWOT Analysis
- Organising sports meet:
 - Institutional sport event
 - Community sport event
 - Fitness Events for children
- Officiating in the institutional tournaments
- Planning & Organising sport event
- Report preparation of sport event
- Audit Management of sport event

TEACHING LEARNING STRATEGIES:

The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

ACTIVITIES:

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRIC:

Classroom Test, Project Work, Assignments, Presentations, Practical Work

TEXT & REFERENCES:

- Chakraborty & Samiran. (1998). Sports Management. New Delhi: Sports Publication.
- 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.
- John, E, Nixon & Ann, E. Jewett. (1964). Physical Education Curriculum, New York: The Ronald Press Company.
- Williams, J.F. (2003). Principles of Physical Education. Meerut: College Book House.
- Yadvnider Singh. Sports Management, New Delhi: Lakshay Publication
- Bill, K. (2009). Sport management. Exeter [England]: Learning Matters. ISBN-13-978- 1844452637. ISBN-10: 1844452638
- Smith, A., & Stewart, B. (1999). Sports management. St Leonards, N.S.W.: Allen & Unwin. ISBN-13: 978-1864487510. ISBN-10: 1864487518
- Hoye, R. (2012). Sport management. Milton Park, Abingdon, Oxon: Routledge. ISBN-13: 978-1856178198, ISBN-10: 1856178196
- Bowers, M. (2015). Sport management. Champaign: Sagamore Publishing. ISBN-10: 1571677267. ISBN-13: 978-1571677266
- Krotee, M., & Bucher, C. (2007). Management of physical education and sport. Boston: McGraw-Hill. ISBN-10. 0072972920. ISBN-13: 978-0072972924
- शारीरिक शिक्षा में प्रबंधन, प्रो० दीप्ति शुक्ला, प्रो० पवन कुमार पचौरी, शिखा पब्लिशर्स, इलाहाबाद, 2018

Course Title: SPORTS AND EXERCISE PHYSIOLOGY

THE COURSE OBJECTIVES ARE:

- To assess basic concepts of exercise physiology
- To employ students to apply the knowledge of energy systems during exercise.
- To explain the effect of environment and ergogenic aids on exercise and training.
- Develop a thorough understanding of the relationship between physical activity and health.
- To develop the understanding of the physiological processes.

STUDENT LEARNING OUTCOMES:

- Describe and apply the fundamental and advanced concepts of exercise physiology.
- Define and describe the term exercise physiology
- Recognize the energy system for aerobic and anaerobic components of exercise.
- Summarize the physiological basis of physical fitness, physical training, health and wellness.
- Discover the nutritional aspect of fitness and performance.
- Comprehend the physiological changes & adaptations during exercise in different environmental conditions

UNIT I: Introduction to Sports & Exercise Physiology and Muscular system

Meaning, Definition & Historical Development of Sports & Exercise Physiology

- Macro & Micro Structure of the Skeletal Muscles, Chemical Composition, Sliding Filament theory of Muscular Contraction. Types of Muscle fiber, Muscle Tone, Chemistry of Muscular Contraction –
- Heat Production in the Muscle, Effect of exercises and training on the muscular system

UNIT II: Cardio Respiratory System and Exercise

- 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.
- Mechanics of Breathing. Minute Ventilation – Ventilation at Rest and During Exercise
- Diffusion of Gases, Exchange of Gases in the Lungs (external respiration)
- Exchange of Gases in the Tissues (internal respiration). Control of Ventilation
- Ventilation and the Anaerobic Threshold. Second Wind, Oxygen Debt
- Lung Volumes and Capacities
- Effect of exercises and training on the respiratory system

UNIT III: 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 IV: Environment, Sports & Exercise

- Sports/Exercise in Hot and Cold Conditions
- Thermoregulatory Mechanism
- Physiological response, Health Risk, Associated with Exposure to heat and cold.
- Acclimatization: Sports & Exercise - Training in High Altitude
- Physiological response and associated health risk.

PRACTICUM: (PHYSIOLOGICAL ASSESSMENT)

- Measurement of resting heart rate, immediately before and after activity and during activity.
- Measurement of Blood Pressure by Sphygmomanometer
- Measurement of Vital Capacity, and Peak Flow Rate.
- Assessment of Respiratory Rate.
- Measurement of Body Fat
- BMI method
- Assessment of Body Composition by Skinfold caliper method
- Assessment of Cardio Respiratory Fitness. through various field methods

TEACHING LEARNING STRATEGIES: The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

ACTIVITIES: Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRIC: Classroom Test, Project Work, Assignments, Presentations

TEXT & REFERENCES:

- Amrit Kumar, R, Moses. (1995). Introduction to Exercise Physiology. Madras: PoompugarPathipagam.
- Beotra Alka, (2000) Drug Education Handbook on Drug Abuse in Sports: Sports Authority of India Delhi.
- 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., 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.
- Sandhya Tiwari. (1999). Exercise Physiology. Sports Publishers.
- Shaver, L. (1981). Essentials of Exercise Physiology. New Delhi: Subject Publications.
- Vincent, T. Murche. (2007). Elementary Physiology. Hyderabad: Sports Publication.
- William, D. Mc Aradle. (1996). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams and Wilkins Company.
- Kenney, W., Wilmore, J., & Costill, D.(2015) Physiology of sport and exercise. 9781450477673
- McArdle, W., Katch, F., & Katch, V. (2010). Exercise physiology. Baltimore, MD: Lippincott Williams & Wilkins. ISBN 978-1451191554
- Raven, P. (2013). Exercise physiology. Australia: Wadsworth Cengage Learning.

**Detailed Syllabus of M.A., M.Sc. in Physical Education
M.A. / M.Sc. Physical Education
First Semester**

COURSE CODE - E020705P & E020706P

PAPER TITLE - PRACTICALS

Sports Practical with Specialization in Anyone: Track & Field /Gymnastics/Yoga/Combative Sport/Indigenous Sport/Team Game/ Racket Game (Select Any One From The Followings On The Basis Of Feasibility)

(A) Track and Field (B) Gymnastics (c) Yoga (d) Combative Sport :

Boxing/Judo/Teakwondo/Wrestling (E) Indigenous Sport : Kabaddi/Kho-Kho (F) Team Game : Basketball/Cricket/Football/ Handball/Hockey/Volleyball (G) : Racket Game: Badminton/Table Tennis/Tennis.

ESSENCE OF THE COURSE

It is designed to provide an opportunity to students to learn the basic techniques of the game/ sport and are not only able to display them but also systematically teach them.

COURSE CONTENTS :

General guidelines for development of required course contents in particular game / sport given below.

UNIT - I : Introduction

- Historical development to the game/sport at national and international levels.
- National Bodies controlling game/sport and their affiliated units.
- International Bodies controlling game/sport and their affiliate units.
- Major National and international competitions in game/sport.
- Layout and marking of play field/ground/courts and measurement of equipment's used in game/sport.

UNIT-II : Techniques / Skills Development :

- Classification of techniques/skills.
- Technique/skill training: Preparatory, Basic. Supplementary exercises.
- Identification & Correction of faults.
- Training for mastery in technique/skill.
- Recreational and lead-up activities.
- Warm - up and cold own for game/sports.

UNIT-III : Officiating :

- Mechanism of officiating.
- Qualities of good official.

- Duties of official (pre, during and postgame)
- Rules & their interpretations.

UNIT- IV : Training (Means & Method)

- Training methods and means for the development of motor abilities (Strength, Speed, Endurance and Flexibility)
- Basic Concept or preparation of training schedules.
- Tactical training in game/sport.
- Psychological preparation required during competition in game/sport.
- Preparation of short term and long term training plans in game/sport.

SUGGESTED READING

- Latest Official Rule Books of International Federations of Particular game/sport and coaching manuals will be utilized.