



SMU SIKKIM
MANIPAL
UNIVERSITY

Established under Govt. of Sikkim, Act 9 of 1995, recognised under 2(f) of the UGC Act, 1956

Department of Physical Education and Sports PhD Entrance Syllabus

Module I

- Physical education and adapted physical education, philosophy of education as it applies to physical education.
- Physical education advancement in ancient Greece, Rome, Sweden, and Russia England, Denmark, Germany, the United States, Australia, and China.
- Growth and development of physical education in India:
- Recreation: its principles, characteristics, and significance. current trends in recreation. programs for recreation both inside and outside. programs for recreation for varied categories of individuals.
- The importance, advantages, and obstacles of wellness. Wellness development and maintenance.
- Teaching Aptitude – nature, objectives, characteristics of teaching, learner characteristics and teaching methods.
- Social aspects of sports- sports as a socializing agency, social values, sports leadership, sports as cultural heritage and social aspects of competition.
- Ancient & Modern Olympics games, Asian and Commonwealth games.
- Structure and functions of international and national bodies controlling various games and sports, Prominent honors and awards in games and sports.

Module II

- Scope and importance of Exercise Physiology in the field of physical education and sports.
- Cardiorespiratory adaptations to long- and short-term physical activities.
- Muscle- its types, characteristics, and functions. Microscopic structure of a muscle fibre. Sliding filament theory of muscular contraction. Types of muscle fibres and sports performance. Muscular adaptations to exercise.
- Neuro-muscular junction and transmission of nerve impulse, kinesthetic Sense organs and neural control of motor skills.
- Bio-chemical aspects of exercise - Metabolism of food products. Aerobic and anaerobic systems during rest and exercise. Direct and indirect methods of measuring energy cost of exercise.
- Recovery process - Physiological aspects of fatigue. Restoration of energy stores. Recovery oxygen. Nutritional aspects of performance.

- Environmental influence on human physiology under exercise.
- Women in sports- trainability. Physiological gender differences and special problems of women athletes.
- Aging - Physiological consequences, lifestyle management and healthful aging. Physiological responses of various therapeutic modalities and rehabilitation.
- Physiological aspects of various Ergogenic aids. Massage manipulations and their physiological responses.

Module III

- Kinesiology and biomechanics. Modern trends in biomechanics. Planes and Axes of human body. Joints and their movements.
- Muscle attachments - Origin, insertion, action, and leverage of the principal muscles used in sports.
- Motion: its laws and their application in sports. Projectile and principles of projections
- Linear and angular kinematics and kinetics. Friction, Spin, impact, and elasticity.
- Air and water dynamics.
- Mechanical advantage and applications of Levers in sports. Posture and its deformities with their corrective exercises.
- Kinesiological, Muscular and mechanical analyses of fundamental movements: Mechanical analyses of major sports skills

Module IV

- Sports psychology- its importance in the field of physical education and sports. Motivation in sports- types, theories, and dynamics.
- Psychological factors affecting sports performance- Emotions, Anxiety aggression, stress, self-confidence, concentration, mental practice, and goal setting.
- Personality- Theories of personality, measurement of personality. Group dynamics, Group cohesion and leadership in sports.
- Cognitive process- memory and thinking. Principles of Motor skill learning. Transfer of training and its types with its implication in sports.
- Long- and short-term psychological preparation for performance/ competition. Psychological skill training for activation and relaxation. Spectators and sports performance.

Module V

- Development of teacher education for physical education in India. Comparative study of professional preparation in physical education of India with those of USA, Russia, Germany, Australia, and UK.
- Professional and other courses of physical education in India. Role of Government agencies monitoring professional courses in physical education.
- Qualities, qualifications, and responsibilities of physical education personnel at primary, secondary and higher education levels. Scope of physical education personnel in the promotion of health, fitness and wellness.
- Recent Government policies for promoting physical education and sports in India.

- Hierarchy of organizational set-up in physical education at schools, colleges and university level.
- Role of public & private sectors in the promotion of physical education and sports in the country.
- Curriculum development- Concepts and principles of curriculum planning. Subject matter for different levels of education - primary, secondary, and higher education.
- Curriculum design and content- importance, selection, and classification of subject matter with reference to age, sex and differently abled pupils. Integrated programmed for boys and girls.
- Teaching aids - Timetable, Concepts, credit system for various subject courses- theory and practical, Impact of technology in physical education and sports,
- Curriculum evaluation: Concepts and purpose; procedure and appraisal.

Module VI

- Health- its objectives and spectrum. Health education, its importance and principles. Role of genetics and environment in achieving health. Health-related physical fitness.
- Community health program- Health appraisal & health instructions. International and national health promoting government & private agencies.
- School Health program and personal hygiene.
- Communicable diseases: causes, symptoms, prevention through other means and Immunization.
- Psychosomatic disorders/ sedentary life style diseases: causes, symptoms and prevention.
- Obesity related health problems. Body weight control and its significance on health. Role of exercise, dieting and combination of exercise & dieting on weight control.
- First-aid- objectives and principles. First-aid for Shock, poisoning, burns, drowning, bleeding, electric shock, and common sports injuries.
- Pollution- Air, water, sound, and radiation. Effects of pollution on health, Preventive, and safety measures from pollution.
- Nutrition- Balanced diet and its components. Nutritional Deficiencies. Understanding of malnutrition and nutritional supplements.
- Effects of smoking, alcohol, & drugs on health; prevention and rehabilitation.

Module VII

- Sports training- its characteristics and principles. Training load, its features, principles, and adaptation process. Means and methods of executing training load. Overload, its Causes, symptoms, and remedial measures.
- Strength- its characteristics, types of strength, factors determining strength and strength development.
- Endurance- its characteristics, types of endurance, factors determining endurance and endurance development.
- Speed- its characteristics, types of Speed, factors determining Speed and speed development.
- Flexibility-its characteristics, types of flexibility, factors determining flexibility and flexibility development.
- Coordinative abilities- its characteristics, types of coordinative abilities, factors determining coordinative abilities and development of coordinative abilities.

- Technique and skill- its characteristics and importance. Different stages of technique development and technique training. Tactics and strategy.
- Planning- its importance and principles. Types of planning.
- Periodization- its importance, objectives, and types of periodization. Concept of different periods - Preparatory, competition and transitional. Types of Competition
- Talent identification- process and procedure.

Module VIII

- Research in physical education- its importance and classification. Ethical issues in research.
- Methods of research- Descriptive, historical, and experimental. Experimental research designs.
- Identification and formulation of research problem. Types of research hypotheses and their formulation. Hypotheses testing.
- Tools of research- Questionnaires, opinionnaires, interviews and observation.
- Sources and steps of literature search- library, research data bases, internet- search engines, online journals. Note taking and critical reading.
- Sampling Techniques- Probability and non-probability. Data, its types and collecting measures.
- Normal probability curve and grading scales.
- Statistical processes, their importance and uses in research.
- Application of parametric and non-parametric statistical techniques in research.
- Computer applications- statistical packages for data analyses- SPSS, e-mail, search engines and Microsoft office.
- Preparation of research proposal, report, abstract, paper for publication and paper for presentation.

Module IX

- Test, measurement, and evaluation -their types and importance in physical education and sports. Principles and processes of evaluation in physical education.
- Criteria of selecting an appropriate test and administration of testing program.
- Types of tests and construction of standard knowledge and skill tests.
- Tests for fitness- Physical fitness, motor fitness, motor ability and motor educability. Health related fitness tests.
- Test for fitness components- strength, endurance, speed, flexibility and coordinative abilities.
- Sports skill tests- Badminton, Basketball, Football, Hockey, Tennis, and Volleyball.
- Anthropometric Measurements- land marks and measurement of various body segments, height, sitting-height, weight, diameters, circumferences, skinfolds, body mass index, ponderal index.
- Somatotype and Posture evaluating techniques.
- Testing of physiological phenomenon- Blood pressure, breathing frequency vital capacity, heart rate, pulse rate, body temperature and body composition.
- Tests for psychological variables- Anxiety, aggression, team cohesion, achievement motivation, mental-toughness, and self-efficacy.

Module X

- Management- its principles and theories. Scope of management in physical education and sports. Guiding principles for organizing physical education & sports programs in institutions.
- Personnel management- objectives and principles. Self-appraisal, communication skills and time management. Essential skills of administration.
- Financial management- objectives, purposes, principles and scope. Planning and preparation of budget. Mechanics of purchase and auditing.
- Supervision - objectives, principles, and importance of supervision. Techniques of supervision. Duties and responsibilities of a supervisor.
- Facility management- planning, procuring and maintenance of facilities- indoor and outdoor facilities. Planning and management of sports infrastructure. Management of records.
- Role of sports manager- interpersonal, informational and decision making. Managerial skills – technical, human, and conceptual. Qualities and qualification of sports manager.
- Event management- its principles, planning, check list, rehearsal, itinerary, execution, reporting and follow-up procedures of an event.
- Public relation- principles of public relations in physical education and sports. Mass Media- communication and publicity, qualifications of public relation officer.