

Syllabus for the post of P.T.I. / Sport Officers

Master of Physical Education Course

Paper I :- Professional Preparation and Curriculum designs

UNIT-I

Foundation of professional preparation

1. Ideals of Indian Democracy: Contribution of Physical Education.
2. Forces and factor effecting Education Policies and programmes – social, religious, economic and political. Education and professional preparation in physical education in India with those in USA, USSR and UK.

UNIT-II

1. Under graduate preparation of professional areas of health education, physical education and recreation. Purpose of under graduate preparation. Administration, curriculum, laboratory experiences, field experiences, Laboratory Experiences, Field Experiences, Teaching Practice and Professional competences to be developed. Facilities and special resources for Library.
2. Post Graduate preparation of professional personnel: Purposes of post graduate studies, admission requirements, sports, curriculum, area of specialization and concentration on core areas, Research requirement, Methods of instruction.
3. In service education of professional personnel: Nature and scope of in service education; Responsibility for in service training, Role of administration, Physical Education Training Institute, Supervisors, the professional, and in – service training programmes. In service through individual efforts, apprenticeship on the job projects. Survey and reports, critical appraisal of existing types of post graduate programs.

UNIT-III

1. Importance of Curriculum Development Factors affecting curriculum, changing needs of student, national and professional policies
2. The Role of the teacher in curriculum development.

3. Principles of Planning: Understanding the capacity characteristics and needs of the learner. Evaluation and follow up.
4. Selecting material for instruction – classification of activities for different age group and sexes. Progress in curriculum. Cultural influences in the choice of activities flexibility of programme material.

UNIT-IV

Selecting methods of teaching

1. Grouping of students for instruction, lecture, projects, activities, demonstration,
2. Block of period, total time allotment do a given activity, teaching aids, conditioning
3. Special gadgets to concentrate on development of particular skills or activity, provision for individual differences.

Development program for different levels of education: Kinder garden, elementary school, Middle School, High School and Higher Secondary School, College and University, Special institution (Technical School & orphan hostel) special days, national days etc.

UNIT V

1. Co-education in physical education – Interrelating the Programs for boys and girls. Activities suitable for co-education, levels at which co-education are desirable, special provision for development of girls programme.
2. Evaluation and follow up process in physical education – nature, importance and procedure for evaluation in physical education, follow- up: curriculum followed in colleges of physical education – BPE, M.P.Ed, and B.P.Ed. In physical Education, M. Phil. Etc. committee’s recommendation: NCE – CBSE, UGC recommendation on curriculum for schools and colleges.

Paper II :- Test Measurement and Evaluation in Physical Education

UNIT-I

1. Meaning of evaluation.
2. Nature and scope of evaluation program.
3. Need and importance of evaluation in the field of physical education.
4. Principles of Evaluation.

UNIT-II

1. Criteria of test selection (reliability, validity, objectivity and norms), Administrative feasibility and educational application,
2. Classification of test, standardized tests (objective and subjective test).
3. Construction of test, Knowledge tests (written and skill tests).
4. Suggestions for administering test - Medical Examination, Testing Personnel, Time of testing, Economy of testing, Test record, Preparation of reports, Construction of tables & graphs and Purpose of reporting.

UNIT-III

Measurements of Organic Function, Motor Fitness and General Motor Ability.

1. Organic function: Cardiovascular respiratory function.
 - a. Cooper's 12 minute continuous run / walk test.
 - b. Tuttle's pulse ration test.
 - c. Harward step test and its modification.
2. Motor Fitness –
 - a. Oregon motor fitness test
 - b. JCR test
 - c. Canada fitness test
 - d. AAHPER youth fitness test.
3. General motor ability:
 - a. Mcloy's general motor ability test
 - b. Methany Johnson motor educability test.

UNIT-IV

1. Test for strength:
 - a. Strength, Roger's physical fitness index and suggested changes
 - b. Kraus-Weber test
2. Test for skills:
 - a. Tests Volleyball-Brady test, Russell and Lange test
 - b. Basket ball-Johnson test, Knox test
 - c. Soccer-Mc Donald test, Johnson test
 - d. Field Hockey-Harbans Singh field hockey test
 - e. Badminton-Miller test,
 - f. Dyer tennis test.

UNIT-V

1. Measures of posture-IOWA posture test
2. Mc cloys behavior rating scale
3. Co-well social behavior trend index
4. Sociometric Questionnaire
5. Mental health analysis
6. Washburn social adjustment inventory
7. Personality inventory.

Paper III :- Exercise physiology

UNIT-I

1. Skeletal Muscle, Structure, function and Characteristics
2. Chemical composition of skeletal muscle
3. Gross structure of Skeletal Muscle
4. Microscopic structure, structure of the myofibril and contractile mechanism, Molecular basis of the contraction of skeletal muscle

UNIT-II

Bio-energetic

1. Fuel for muscular work
2. Energy for muscular contraction and biochemical changes during muscular contraction,
3. Heat production and thermo-dynamics of muscle contraction

UNIT-III

Neuro-muscular concepts

1. Neuron and motor unit transmission of nerve impulses, bio-electrical potentials
2. Nerve to nerve synapse, Neuro muscular junction and transmission of nerve impulse across it.
3. Proprioception and kinesthesia. Tone, posture and Equilibrium.

UNIT-IV

Physiological changes due to exercise. Effect of exercise and training on:

1. Heart and circulatory systems.

- a. Blood supply to skeletal muscle and
 - b. Regulation of blood flow during exercise.
2. Respiratory system [a brief discussion on other systems]
 - a. Oxygen debt & recovery rate
 - b. Aerobic and Anaerobic muscular activity
 - c. Second wind.

UNIT-V

1. Other physiological aspects of exercise and sports
2. Concept of physical fitness and physical training, warming up conditioning and fatigue
3. Physiological aspects of development of strength, endurance, skill, speed, agility and coordination.
4. Work capacity under different environmental conditions hot, humid, cold, high attitude.
5. Energy cost of various sports activity.

Paper IV :-Management of physical education

UNIT-I

1. Review of principle and philosophy in of Education, Physical Education, Recreation and Health education.
2. Progressive concept of administration/ management. General administration theories.
3. Personal and material management programming for instruction and activities.
4. Hierarchy of education administration in Central, State local authorities and Individual Institution in India.

UNIT-II

1. Responsibilities of General Administration, technical Experts & Professionals.
2. Selected problems in Management / Administration
3. Professional preparation, professional ethics class discipline, student teaching.

UNIT-III

1. Budget and Finance: Budget heads principles of accounting financial power of different authorities, Sources of income auditing, terms of sanctions and purpose.
2. Staff job analysis, qualifications, requirement, supervision, training, leave, retirement deputation fringe benefits and staff meetings.
3. Office management's gathering data, programming and scheduling (Calendar, Timetable, thing that requires periodical attention) storing data (Filing), General office procedure like correspondence interview.

UNIT-IV

1. Management of sports in school, college & universities, Inter-University, District State & National level.
2. Indian and International Olympic association, SAI.
3. Public relation and promotional activities including-press relations, publications, Public speeches, assemblies, exhibitions demonstration, special events, staff, student welfare.

UNIT-V

SUPERVISION

1. Definition of Supervision
2. Scope of Supervision
3. Guiding Principles of supervision
4. Method of Supervision:
 - a. Visitation

- b. Conference
- c. Bulleting
- d. Demonstration

Functions of Supervisions

1. Administrative duties
2. Duties pertaining to facility & Equipment
3. Duties pertaining to instruction
5. Duties pertaining to supervision
6. Duties pertaining to professional Growth

Paper I :- Training methods-

UNIT-I

1. Brief historical sketch of development of Competitive sports in India.
2. Introduction to motor development.
3. Sports training.
4. Its aims, Tasks and characteristics.
5. Principles of sports training.

UNIT-II

1. Training Load: Important features of training load [Intensity, Density, Duration and Frequency].
2. Principles of Training load, Relationship between load and adaptation, conditions of adaptation, principles of over load. Causes and symptoms of over load, tackling of over load.
3. Training plans long term and short term plans,

4. Periodisation (Single double and triple). Cyclic process of training. Training session.

UNIT-III

Training for Important Motor Components

1. **Strength** – Forms of strength, characteristics of strength,, principle of strength, strength training, means and methods, strength training for children and women.
2. **Endurance** – Forms of endurance, characteristics of endurance, endurance training, means and methods.

UNIT-IV

1. **Flexibility** – Form of Flexibility, Methods of development of flexibility.
2. **Coordinative abilities** – Characteristics of coordination abilities, importance of coordinative abilities. Classification of coordinative abilities, Training means and methods.
3. **speed** – form of speed, characteristics of speed, basis of speed, training means and method.

UNIT-V

1. Planning and organization of training, Importance of Planning, Principles of planning, Contents for various periods of training.
2. Evaluation of training, Items to be included in evaluation programme, Forms of diagram and graphical presentation for evaluation and checking progress.

Paper II :- Biomechanics

UNIT-I

Introduction

1. Meaning of Bio-mechanics, Bio-mechanics in Physical Education, Sports and Research
2. Fundamental Skills - Basic and Specific

3. Movement Analysis - Kinensiological Analysis, Mechanical Analysis and Bio-mechanical Analysis.

UNIT-II

1. Linear, angular and general motion
2. Distance and Displacement (Linear and Angular)
3. Space and Velocity (Linear and Angular) Acceleration (Linear and Angular Uniform Motion)
4. Units of Relationship of Linear and Angular motion, Centrifugal and Centripetal Forces
5. Newton's Laws of motion as applicable to Linear and Angular Motion.
6. Lever and its application.

UNIT-III

1. Force – Meaning, Units of Force, Effects of Force, Sources of Force, Components and Resultant, Friction Pressure.
2. Work, Power and Energy
3. Movement of Force, Movement of Inertia

UNIT-IV

1. Freely falling bodies, Projectiles, Momentum and Impact
2. Stability (Static and Dynamic), Initiating Rotation in the Air.
3. Spin, Impact and Elasticity.
4. Fluid Mechanics, Air Resistance and Water resistance.

UNIT-V

1. Analysis of fundamental skills – Walking Running, Throwing, Lifting, Pulling, Catching and Climbing
2. Analysis of Sports Skills of games & sports: Athletics, Basket ball, Volley ball, Badminton, Foot ball, Cricket etc.

Paper III :- Statistics and computer

UNIT I

Statistics

Introduction

- Definition, Nature and needs of statistics.
- Type of statistical process – descriptive, comparative, relationship, inferential and predictive.

The frequency distribution

- Meaning of raw data, single score and grouped data.
- Frequency table.
- Construction of frequency table – Range of score, Number of class intervals, intervals size, tabulation of frequency table.

Measure of central tendency

- Mean, median, mode – definition and meaning.
- Computing mean from ungrouped and grouped data.
- Computing median from ungrouped and grouped data.
- Mode, Crude mode and computed mode, specific characteristics and uses of measure of central tendency.

UNIT II

Measure of Variability

- Range – Quartile deviation : Mean deviation, Standard deviation, Probable error – Meaning and Definition.

- Computation of Quartile deviation, mean deviations and standard deviation from ungrouped and grouped scores.
- Specific characteristics and uses of measure of variability.
- Coefficient of variability, meaning and uses of absolute and relative variability.

Correlation

- Meaning of correlation
- Direction and degree of correlation
- Computing correlation using following Methods:
 - Karl Pearson Coefficient Correlation [(Product Moment method) (Ungrouped and Grouped data)]
 - Rank Difference Method (Spearman Ranks Method)
- Level of significance for correlation coefficients.
- Probable error and standard error.

UNIT III

The normal curve.

- Definition of normal curve.
- Principal of normal curve, Properties of normal curve
- Binomial Theorem relationship to normal curve
- Divergence from normality – skewness and kurtosis.
- Scoring scale – Sigma scale, S scale, T scale.

Hypothesis: Meaning and characteristics

- Type of Hypothesis : Null and Alternative
- Type I and Type II error
- Test of significance: Meaning parameter and statistics, Process of testing hypothesis

- Test of significance – Large sample (Variables), Fisher’s ‘Z’ distribution.
- Test of significance in small sample
 - a. Student ‘t’ distribution
 - b. F distribution, ANOVA, Post hoc test.
 - c. Chi-square Test

UNIT IV

Basic concepts:

- Introduction to computer.
- History of computers. Input – output Devices, Processors, Memory, storage Devices.
- Type of computers, Operating system – Features, Prominent features of Windows, OS.
- Working with Internet – its basic concepts, creating mail account sending and receiving mail and attachment.

UNIT V

- Working with Microsoft Word (Creating File, Edit, View, Insert, Format, Tools, Table)
- Working with Microsoft Excel (Creating File, Edit, View, Insert, Format, Tools, Table)
- Working with Microsoft PowerPoint’s (Creating File, Edit, View, Insert, Format, Tools, Table)

Paper IV :-Research Process

UNIT-I

Meaning of research, Need and importance and its scope in physical education. Type of research, survey of related literature, need for library search, library sources, Preparation of Bibliography and abstract.

UNIT II

Formulation and development of research problem: location of research problem. Criteria in selecting the research problem. Formulation of hypothesis.

UNIT III

- a) Historical research: scope of historical research in Physical Education. Historical evidence, validity of historical data.
- b) Philosophical Research: Brief Introduction.

UNIT IV

Survey studies: Place of survey Research in Physical Education. Tools of survey research, questionnaire and interviews, case studies. Definition of case studies, Importance of case studies. Characteristics of case studies, data collection in case studies.

UNIT V

Experimental Research

- a) Meaning, scope, and nature. Control of experimental factors. Experimental designs.
- b) Research Proposal and preparation of research report.

Paper I :- Scientific Coaching Methods

UNIT-I

1. Historical development of coaching schemes in India.
2. Philosophy of coaching and qualities of coach.
3. Introduction to motor development, stages of motor development.

UNIT II

1. Technical preparation – Fundamental methods for the development of technique in sports. Stages of technical development, grounding, causes and correction of faults.
2. Tactical preparation – Tactical concepts, methods of tactical training.

UNIT III

Psychological preparation

1. Psychology of a coach and his trainees
2. Individual differences, psychological potentiality
3. Development of will power, stress, anxiety, frustration control
4. Planning for competitions. Main and build up competition. Frequency, preparation for competition.

UNIT IV

1. Preparation for competition. Competition system. Competition frequency.
2. Preparation for competition – Long term and Short term plans.
3. Arrangement of training session. Post competition plan.

UNIT V

1. Diet for sportsmen during training and pre-post competition, time for diet.
2. Use of drugs and their ill effects. Ergogenic aids – its use in competitive sports.
3. Talent identification, steps for talent identification.

Paper II:- Sports Psychology

UNIT-I

1. The meaning, nature and scope of sports psychology.
2. Development of sports psychology.
3. Relationship of sports psychology with other sports sciences.
4. Importance of sports psychology for physical education.

UNIT II

1. Methods of investigation in sports psychology, its importance.
2. Various methods used in sports psychology.
3. Different test to be used in sports psychology.

UNIT III

1. Growth and development, factor affecting growth and development.
2. Individual differences and their influence on physical activity.
3. Psychological aspects of action regulation.
4. Importance of action regulation in physical activities, psychological characteristics of physical activities.

UNIT IV

1. Psychological aspects of competition, psychology of sports competition.
2. Psychological characteristics of pre-competition, competition and post competition.
3. Motivation, meaning of motive, role of motive, attitudes, interest for physical activity, importance of motivation in peak performance.

UNIT V

1. Cognitive process in physical activities, characteristics of cognitive process in sports.
2. The importance of perception in physical activities.
3. The function of thinking and imagination in physical activity.
4. The role of memory in physical activities.
5. The importance of attention in sports and its relationship with cognitive process.

Paper III :- Sports Medicine

UNIT-I

1. Definition of sports medicine, it's aims and objectives
2. Brief History nature and effect of sports medicine, Physiological, pathological and psychological problems of sportsmen.
3. Care and problems of sportsmen; before competition and after competition.

UNIT II

1. Nutrition: Athletic nutrition malnutrition, low cost High calorie diet role of vitamins, minerals, salts. Carbohydrate loading.

2. Doping: Agents, effect, dope test and sanctions.

UNIT III

1. Work capacity under different environmental conditions. Thermoregulation and sports.
2. Physique and performance. Somatotype.

UNIT IV

1. Prophylactic health-care. Health related fitness.
2. Aging & sports.
3. Women in sports. Pregnancy and exercises.

UNIT V

1. Common old age problems namely – arthritis, heart diseases and diabetes. Role of exercise in rehabilitation.
2. Obesity and weight control.
3. Adapted physical Education – Physically & Mentally challenged persons.

Paper IV :- Specialization

UNIT-I

Skills, Techniques and strategies:

1. Advance skills of games / sports.
2. Techniques, Tactics and strategies of game / sports.

UNIT II

Officiating of games / sports.

1. Rules and their interpretation.
2. Mechanics of officiating.

UNIT III

Play field, Sports bodies and Organization.

1. Construction, layout and maintenance of play field and equipment.
2. Structure and function of Federation and Associations.
3. National and International competition.
4. Organization of competitions and coaching camps.

UNIT IV

1. Skill test, Mechanics of games / sports.
2. Analysis of scientific principles applied to different skills / techniques.

UNIT V

1. Training Method: for improving the performance in games / sports.
2. Training Schedule.

Paper I :-Health education

UNIT-I

1. Health

- a. Concept of health
- b. History of health in India
- c. Various level of health care in India
- d. Role of heredity and genetics in achieving positive health

2. Health education

- a. Meaning of health education
- b. Aim and content of health education
- c. Approaches of health education
- d. Latest trend in health education

UNIT-II

1. School health services

- a. Meaning and objectives of school health services and school health programs aspect of school health services
 - i. Health appraisal
 - ii. Medical examination
 - iii. Common childhood diseases and their control
 - iv. First aid and accident preventions
 - v. Nutritional services
 - vi. Mental health, dental health and eye health
 - vii. School health records

2. Healthful school environment

- a. Meaning of healthful school environment
 - b. Point to be kept in mind for healthful school environment
 - c. Role of physical education teacher
3. Role of Physical education teacher in relation to school health services and healthful school environment.

UNIT-III

1. Community and environmental sanitation
- a. Housing
 - b. Pollution, light, noise and temperature
 - i. Population policy, population dynamic and population explosion
 - ii. National family welfare program
 - iii. Sex education

UNIT-IV

1. Communicable diseases
- a. Meaning of epidemiological approach of communicable diseases brief description of following communicable diseases and their prevention
 - i. Tuberculosis
 - ii. Chicken pox, measles, mumps
 - iii. Malaria and filarial
 - iv. Rabies
 - v. STD and AIDS
 - vi. Hepatitis (Jaundice)

UNIT-V

1. Non-communicable diseases
 - a. Meaning of non communicable diseases
 - b. Brief description of following non communicable diseases and their prevention: Heart diseases, Cancer, diabetes

Paper II :- Psychology of coaching and counseling

UNIT-I

Psychological assessment of the players, capacity of the player psychological preparation for pre, during and post competition. Pep talk, Self confidence. Emotional maturity. Emotional intelligence.

UNIT-II

Counseling process introduction. Preparation for counseling.

- a. Readiness
- b. Pre counseling interview
- c. Case history
- d. Process of counseling
- e. The first interview
- f. Reassurance
- g. Winning confidence
- h. Advising

Counseling relationship – content and process. Physical setting. Privacy value orientation. Acceptance. Understanding. Report. Communication and empathy. Attentiveness. Counseling relationship. Counseling process.

UNIT-III

Psychological testing and diagnosis – introduction. Limitation of the use of psychological tests. Type of psychological tests. Test used in counseling situations. Test interpretation in counseling. Not – test client appraisal techniques. Autobiography. Anecdotal records. Rating Scale. Cumulative records. Pupil data questionnaires. Case studies. Psycho diagnostics, limitation of diagnosis. Common diagnostic classification systems in counseling.

UNIT-IV

Counseling interview – introduction, interviewing its essential aspects association of ideas contained within interview. Shifts in conversation, Opening and closing remark, recurrent reference, Inconsistencies and gaps. Review, Non verbal communication in interview. Counselee. Counselor of relationship. Interviewing techniques in counseling. Structuring the counseling relationship degree of lead, silence. Relationship techniques. Sharing of experience.

UNIT-V

Group counseling – Introduction. Case for group counseling, emerging field of group counseling. Structuring groups, limitation and assumptions of group counseling. Mechanisms of group counseling. Types of groups. Group counseling – its value. The process of group counseling. Individual and group counseling similarities. Differences between individual and group counseling.

Special areas in counseling – Introduction, family group consultation

Counseling families. Counseling with parents, counseling the delinquent, counseling reluctant clients, structuring. Counseling women.

Paper III :- Sports physiotherapy

UNIT-I

Introduction

1. Review of anatomy and physiology of various muscles, joints and their function and action, physiological changes due to exercise – cardio-respiratory muscles, nervous systems.
2. Causes of injuries – intrinsic, extrinsic factors
3. Types of sports injury
4. Load deformation curve, response to stress, inflammation healing.

UNIT-II

Common regional injuries

1. Mechanism of injury clinical feature of injuries
2. Injuries of head, neck and face

3. Injury involving upper limbs
4. injuries involving thorax, abdomen and back
5. injuries involving lower limbs

UNIT-III

Common sports injuries

1. Common injuries found in various sports
2. Mechanism of injuries in various sports activity
3. Basic on field assessment and management, RICE, first aid, moving the injured athlete
4. Bandaging, crape.

UNIT IV

1. Injury management & rehabilitation

- (a) Cryotheraopy
- (b) Electrical modulating SWD, TENS, IFT,US,LASER
- (c) Exercise therapy- flexibility, strengthening endurance, neuromuscular co-ordination, CVR-Stages of rehabilitation, criteria to return to sports.
- (d) Various factors to be considered during injury-psychological nutrition, time, economic.

UNIT-V

1. Sports massage
2. Core stability
3. Protective equipment
4. Injury in children, women and elderly

Practical demonstration

1. Uses of crape bandage, banding technical
2. Electrical modulation

3. Use of theraband, exercise ball, Medicine ball
4. Visit to health club / fitness camps
5. Visit to sauna bath / steam bath

Paper IV :- Foundation of physical education and current trends

UNIT-I

Philosophical foundation of physical education

1. Idealism
2. Pragmatism
3. Naturalism
4. Existentialism and other philosophies

UNIT-II

1. Journalism & Sports journalism
 - a. Meaning, concept, scope
 - b. Basic principles of sports reporting, source of sports news
 - c. News gathering process
2. Reporting for print media and electronic media
3. Editing, writing for various media
4. Layout and design for print media

UNIT-III

Adapted physical education

1. Introduction to adapted physical education – meaning, definition, aims and objectives.
2. Classification of disabilities
3. Development of adapted physical education program
 - a. Guiding principles
 - b. Special adapted physical education program for different categories

UNIT-IV

Communication skills. Types of communication. Methods of communication. Official communication. Reports, minutes and agenda. Circular, notice, office orders, note sheet and memo etc.

Press release, media conferencing and invitation

Verbal and non verbal communication

UNIT-V

Yoga and fitness

Yoga and fitness,

Introduction to Yoga, concept, meaning and definition. Importance of Yoga, benefits of yoga asana and Pranayam

Meaning, Definition and Types of fitness, Components of fitness and assessment of fitness
