

**SEMESTER I
PAPER CODE PET-101**

HISTORY, PRINCIPLES AND FOUNDATION OF PHYSICAL EDUCATION

Unit 1:

Intction

Meaning, Definition and Scope of Physical Education. Aims and Objective of Physical Education Importance of Physical Education in present era. Misconceptions about Physical Education. Relationship of Physical Education with General Education. Physical Education as an Art and Science.

Unit- 2:

Principles of Physical Education- Definition of Education and Physical Education, Principles, Sources of Principles of Physical Education- Related Subjects- Aims and Objectives of Education and Physical Education- Relationship of Physical Education to General Education – Difference between Physical Culture ,Physical training and Physical Education.

Unit- 3

Historical Development of Physical Education in India Indus Valley Civilization Period. (3250 BC 2500 BC), Vedic Period (2500 BC – 600 BC), Early Hindu Period (600 BC – 320 AD) and Later Hindu Period (320 AD – 1000 AD), Medieval Period (1000 AD – 1757 AD), British Period (Before 1947) Physical Education in India (After 1947), Contribution of Akhadas and Vyayamshals Y.M.C.A. and its contributions.

Unit- 4

Foundation of Physical EducationPhilosophical foundation: Idealism, Pragmatism, Naturalism, Realism, Humanism,Existentialism and Indian. Philosophy and Culture. Fitness and wellness movement in the contemporary perspectives. Sports for all and its role in the maintenance and promotion of fitness.

Unit-5-

Principles of Physical Education Biological: Growth and development, Age and gender characteristics, Body Anthropometric differences, Psychological, Learning types, learning curve, Laws and principles of learning, Attitude, interest, cognition, emotions and sentiments, **Sociological:** Society and culture, Social acceptance and recognition, Leadership Social integration and cohesiveness.

References:

- Bucher, C. A. (n.d.) Foundation of physical education. St. Louis: The C.V. Mosby Co.
- Deshpande, S. H. (2014). Physical Education in Ancient India. Amravati: Degree college of Physical education.
- Mohan, V. M. (1969). Principles of physical education. Delhi: Metropolitan Book Dep.
- Nixon, E. E. & Cozen, F.W. (1969). An introduction to physical education. Philadelphia: W.B. Saunders Co.
- Obertuffer, (1970). Delbert physical education. New York: Harper & Brothers Publisher.
- Sharman, J. R. (1964). Introduction to physical education. New York: A.S. Barnes & Co.
- William, J. F. (1964). The principles of physical education. Philadelphia: W.B. Saunders Co.

PAPER CODE - PET102

ANATOMY AND PHYSIOLOGY

UNIT-I

Brief Introduction of Anatomy and physiology in the field of Physical Education. Introduction of Cell and Tissue. The arrangement of the skeleton – Function - of the skeleton – Ribs and Vertebral column and the extremities – joints of the body and their types Gender differences in the skeleton. Types of muscles.

UNIT-II

Blood and circulatory system: Constituents of blood and their function –Blood groups and blood transfusion, clotting of blood, the structure of the heart-properties of the heart muscle, circulation of blood, cardiac cycle, blood pressure, Lymph and Lymphatic circulation. Cardiac output. **The Respiratory system:** The Respiratory passage – the lungs and their structure and exchange of gases in the lungs, mechanism of respiration (internal and external respiration) lung capacity, tidal volume.

UNIT-III

The Digestive system: structure and functions of the digestive system, Digestive organs, Metabolism, **The Excretory system:** Structure and functions of the kidneys and the skin. **The Endocrine glands:** Functions of glands pituitary, Thyroid, Parathyroid. Adrenal, Pancreatic and the sex glands. **Nervous systems:** Function of the Autonomic nervous system and Central nervous system. Reflex Action, **Sense organs:** A brief account of the structure and functions of the Eye and Ear.

UNIT-IV

Definition of physiology and its importance in the field of physical education and sports. Structure, Composition, Properties and functions of skeletal muscles. Nerve control of muscular activity: Neuromuscular junction Transmission of nerve impulse across it. Fuel for muscular activity Role of oxygen- physical training, oxygen debt, second wind, vital capacity.

UNIT-V

Effect of exercise and training on cardiovascular system Effect of exercise and training on respiratory system. Effect of exercise and training on muscular system
Physiological concept of physical fitness, warming up, conditioning and fatigue. Basic concept of balanced diet – Diet before, during and after competition.

References:

- Gupta, A. P. (2010). Anatomy and physiology. Agra: SumitPrakashan.
- Gupta, M. and Gupta, M. C. (1980). Body and anatomical science. Delhi: Swaran Printing Press.
- Guyton, A.C. (1996). Textbook of Medical Physiology, 9th edition. Philadelphia: W.B. Saunders.
- Karpovich, P. V. (n.d.). Philosophy of muscular activity. London: W.B. Saunders Co. Lamb, G. S. (1982). Essentials of exercise physiology. Delhi: Surjeet Publication. Moorthy, A. M. (2014). Anatomy physiology and health education. Karaikudi: Madalayam Publications.
- Morehouse, L. E. & Miller, J. (1967). Physiology of exercise. St. Louis: The C.V. Mosby Co.
- Pearce, E. C. (1962). Anatomy and physiology for nurses. London: Faber & Faber Ltd. Sharma, R. D. (1979). Health and physical education, Gupta Prakashan.
- Singh, S. (1979). Anatomy of physiology and health education. Ropar: Jeet Publications.

PAPER CODE - PET103

HEALTH EDUCATION AND ENVIRONMENTAL STUDIES

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,

Unit – III

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 – IV Environmental Science

Definition, Scope, Need and Importance of environmental studies. Concept of environmental education, Historical background of environmental education, Celebration of various days in relation with environment. Plastic recycling & probation of plastic bag / cover. Role of school in environmental conservation and sustainable development.

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:

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

**OLYMPIC MOVEMENT (ELECTIVE)
PAPER CODE - PET104**

Unit – I

Origin of Olympic Movement

Philosophy of Olympic movement. The early history of the Olympic movement The significant stages in the development of the modern Olympic movement Educational and cultural values of Olympic movement

Unit – II

Modern Olympic Games

Significance of Olympic Ideals, Olympic Rings, Olympic Flag. Olympic Protocol for member countries. Olympic Code of Ethics Olympism in action Sports for All

Unit – III

Different Olympic Games

Para Olympic Games, Summer Olympics, Winter Olympics, Youth Olympic Games

Unit – IV

Committees of Olympic Games

International Olympic Committee - Structure and Functions, National Olympic committees and their role in Olympic movement, Olympic commission and their functions, Olympic medal winners of India

Unit – V

Contribution to the growth of physical education by different leaders of various countries; a) Germany: John Basedow, Guts Muths, Turnverein Movement, b) Sweden: Per Henric Ling, Swedish Medical Gymnastics, c) Denmark: Frank Nachtegal, Neils Burke d) British games and sports

e) USA: Y.M.C.A and its contributions

f) U.S.S.R: Physical Education in schools and on spartakiad

g) India: Shri H.C.Buck, Pt Jawahar Lal Nehru, Prof. G.D Sodhi, Rajkumari Amrit Kaur, Dr.P.M.Joeph, Prof.D.G.Wakharka

Reference:

Osborne, M. P. (2004). Magictree house fact tracker: ancient greece and the olympics: a nonfiction companion to magic tree house: hour of the Olympics. New York: Random House Books for Young Readers. Burbank, J. M., Andranovich, G. D. & Heying Boulder, C. H. (2001). Olympic dreams: The impact of mega-events on local politics: Lynne Rienner

OFFICIATING AND COACHING (Elective)
PAPER CODE - PET105

Unit- I:

Introduction of Officiating and coaching

Concept of officiating and coaching, Importance and principles of officiating, Relation of official and coach with management, players and spectators, Measures of improving the standards of officiating and coaching

Unit- II:

Coach as a Mentor

Duties of coach in general, pre, during and post game. Philosophy of coaching, Responsibilities of a coach on and off the field, Psychology of competition and coaching

Unit- III:

Duties of Official

Duties of official in general, pre, during and post game. Philosophy of officiating Mechanics of officiating – position, singles and movement etc. Ethics of officiating

Unit- IV:

Qualities and Qualifications of Coach and Official

Qualities and qualification of coach and official, General rules of games and sports
Eligibility rules of intercollegiate and inter-university tournaments, preparation of TA, DA bills, Integrity and values of sports

UNIT - V

Training – Warming up – Types – Conditioning Exercise – Principles of Sports
Training - Training for Motor Components, Strength, Endurance, Speed, Flexibility , Coordinative abilities Training Load – Intensity - Density – Duration, Frequency - Types of Training – Weight Training – Circuit Training – Fartlek Training – Interval Training.
Periodisation-Preseason-Competitive season – off season

Reference Books:

- Bunn, J. W. (1968). The art of officiating sports. Englewood cliffs N.J. Prentice Hall. Bunn, J. W. (1972). Scientific principles of coaching. Englewood cliffs N. J. Prentice Hall.
- Dyson, G. H. (1963). The mechanics of athletics. London: University of London Press Ltd.
- Dyson, G. H. (1963). The mechanics of Athletics. London: University of London Press Ltd.
- Lawther, J.D. (1965). Psychology of coaching. New York: Pre. Hall.
- Singer, R. N. (1972). Coaching, athletic & psychology. New York: M.C. Graw Hill.

PEP101

**PART – B PRACTICAL COURSES SEMESTER I
TRACK AND FIELD(RUNNING EVENT)**

Starting techniques: Standing start, Crouch start and its variations, Proper use of blocks. Finishing Techniques: Run, Through, Forward lunging, Shoulder Shrug Ground Marking, Rules and Officiating, Hurdles: Fundamental Skills- Starting, Clearance and Landing Techniques. Types of Hurdles Ground Marking and Officiating.

Relays: Fundamental Skills

Various patterns of Baton Exchange, Understanding of Relay Zones, Ground Marking Interpretation of Rules and Officiating.

PEP102
GYMNASTICS/SWIMMING/ SHOOTING FUNDAMENTAL SKILLS

Gymnastics

Floor Exercise, Forward Roll, Backward Roll, Sideward Roll, different kinds of scales, Leg Split, Bridge, Dancing steps, Head stand, Jumps-leap, scissors leap. Vaulting Horse Approach Run, Take off from the beat board, Cat Vault, Squat Vault.

Swimming:

Fundamental Skills, Entry into the pool. Developing water balance and confidence

Water fear removing drills. Floating-Mushroom and Jelly fish etc. Gliding with and without kickboard. Introduction of various strokes, Body Position, Leg, Kick, Arm pull, Breathing and Co ordination. Start and turns of the concerned strokes. Introduction of Various Strokes. Water Treading and Simple Jumping. Starts and turns of concerned strokes. Rules of Competitive swimming-officials and their duties, pool specifications, seeding heats and finals, Rules of the races.

Shooting Fundamental Skills

Basic stance, grip, Holding rifle/ Pistol, aiming target, Safety issues related to rifle shooting, Rules and their interpretations and duties of officials

PEP103
INDIGENOUS SPORTS:

Kabaddi:

Fundamental Skills

Skills in Raiding-Touching with hand, various kicks, crossing of baulk line, Crossing of Bonus line, luring the opponent to catch, Pursuing. Skills of Holding the Raider- Various formations, Catching from particular position, Different catches, Luring the raider to take particular position so as to facilitate catching, catching formations and techniques. Additional skills in raiding-Bringing the antis in to particular position, Escaping from various holds, Techniques of escaping from chain formation, Combined formations in offence and defense. Ground Marking, Rules and Officiating

Malkhambh and Light Apparatus:

Lathi-Two counts exercises, Four Count exercises, eight count exercises, sixteen count exercises. GhatiLezuim-AathAawaaz, Bethakawaaz, AagePaon, Aagekadam, Do pherawaaz, Chau pherawaaz, Kadamtaal, Pavitra, Uchhakpavitra, Kadampavitra. Mass P.T. Exercises-Two count, four count and eight count exercises. Hindustani Lezuim- Char Awaaz, EkJagah, AantiLagaav, Pavitra, Do Rukh, Chau Rukh, Chau rukhbethak, Momiya. Drill and Marching Malkhamb-Salaami, Hold, Saadiudi, Bagaludi, Dashrangudi, Bagliudi, Veludi, Soyodoro, Phirki, Padmasana, T.Balance, Pataka, Landing. Rope Malkhamb-Salaami, PadmasanaChadh, Katibandh1-2, Sadiadhi, Rikebpakkad, Rikebpagniadhi, Kamaradhi, Nakkikasadhi, Kamaradhi, Nakkikasadhi, Urubandhtedhi, Sadibagli, Do hatibagli, Kamarbandhbagli, nakkikasbagli, Dashrang, Hanuman pakad, Gurupakkad, various padmasana, Landing.

PEP104

MASS DEMONSTRATION ACTIVITIES

Kho Kho:

General skills of the game-Running, chasing, Dodging, Faking etc. Skills in chasing- Correct Kho, Moving on the lanes, Pursuing the runner, Tapping the inactive runner, Tapping the runner on heels, Tapping on the pole, Diving, Judgement in giving Kho, Rectification of Foul. Skills in Running-Zig zag running, Single and double chain, Ring play, Rolling in the sides, Dodging while facing and on the back, fakes on the pole, fake legs, body arm etc, Combination of different skills. Ground Marking, Rules and their interpretations and duties of officials.

Dumbbells/ Wands/ Hoop/ Umbrella/ Tipri:

Fundamentals skills

Apparatus/ Light apparatus Grip, Attention with apparatus/ Light apparatus , Stand – at ease with apparatus/ light apparatus, Exercise with verbal command, drum, whistle and music – Two count, Four count, Eight, count and Sixteen count., Standing Exercise Jumping Exercise, Moving Exercise, Combination of above all

SEMESTER II
PAPER CODE PET201 YOGA EDUCATION-

Unit I:

Introduction

Meaning and Definition of Yoga, Aims and Objectives of Yoga, Yoga in Early Upanishads. The Yoga Sutra: General Consideration, Need and Importance of Yoga in Physical Education and Sports,

Unit - II:

Foundation of Yoga

The Astanga Yoga: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi, Yoga in the Bhagavadgita - Karma Yoga, Raja Yoga, Jnana Yoga and Bhakti Yoga

Unit - III

Asanas

Effect of Asanas and Pranayama on various system of the body, Classification of asanas with special reference to physical education and sports, Influences of relaxative, meditative posture on various system of the body, Types of Bandhas and mudras Type of kriyas

Unit – IV

Yoga Education

Basic, applied and action research in Yoga Difference between yogic practices and physical exercises Yoga education centers in India and abroad Competitions in Yogasanas.

Unit – V

1. Special Techniques: Asthama, Nasal allergy, Diabetes, Low backache, Hypertension, IHD, IBS/GID, Tension/Migraine, Headache
2. Advance Techniques: a. Self Management of Excessive Tension b. Pranic Energisation Technique
3. Meditation: a. Omkara Dhyana, b.Cyclic Meditation

References:

- Brown, F. Y.(2000). How to use yoga. Delhi:Sports Publication.
- Gharote, M. L. &Ganguly, H. (1988). Teaching methods for yogic practices.Lonawala: Kaixydahmoe.
- Rajjan, S. M. (1985). Yoga strenthening of relaxation for sports man. New Delhi:Allied Publishers.
- Shankar,G.(1998). Holistic approach of yoga. New Delhi:Aditya Publishers. Shekar,K. C. (2003). Yoga for health. Delhi: Khel Sahitya Kendra.

PAPERCODE – PET202

EDUCATIONAL TECHNOLOGY AND METHODS OF TEACHING IN PHYSICAL EDUCATION

Unit I

Introduction

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

Unit – II

Teaching Technique

Teaching Technique – Lecture method, Command method, Demonstration method, Imitation method, project method etc. Teaching Procedure – Whole method, whole – part – whole method, part – whole method. Presentation Technique – Personal and technical preparation Command- Meaning, Types and its uses in different situations.

Unit – II

Introduction to teaching styles : Choosing & combining appropriate styles- factors to be considered Spectrum of teaching styles Reproduction/Direct- command style, practice style, reciprocal style, self check style, inclusion style Production/Indirect- Guided discovery, Convergent discovery, divergent discovery, task style. Modified sport & lead up games

Unit – IV

Teaching Aids

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

Unit – V

Lesson Planning and Teaching Innovations

Lesson Planning – Meaning, Type and principles of lesson plan. General and specific lesson plan. Micro Teaching – Meaning, Types and steps of micro teaching. Simulation Teaching - Meaning, Types and steps of simulation teaching.

Reference:

Bhardwaj, A. (2003). New media of educational planning. New Delhi: Sarup of Sons.

Bhatia, & Bhatia, (1959). The principles and methods of teaching. New Delhi: Doaba House.

Kochar, S.K. (1982). Methods and techniques of teaching. New Delhi: Sterling Publishers Pvt. Ltd.

Sampath, K., Pannirselvam, A. & Santhanam, S. (1981). Introduction to educational technology. New Delhi: Sterling Publishers Pvt. Ltd.

Walia, J.S. (1999). Principles and methods of education. Jullandhar: Paul Publishers.

PAPER CODE – PET203

ORGANIZATION AND ADMINISTRATION IN PHYSICAL EDUCATION

Unit – I:

Organization and administration

Meaning and importance of Organization and Administration in physical education Qualification and Responsibilities of Physical Education teacher and pupil leader, Meaning & scope of management in the field of Phy.Edu. Modern concept & principles of management Functions & Importance of management Manager - qualities, duties & responsibilities.

Unit – II:

Planning and their basic principles,

Program planning: Meaning, Importance, Principles of program planning in physical education. Functions of Planning, organizing, staffing, directing, communicating, co- ordination, controlling, evaluating and innovating.

Unit- III:

Office Management, Record, Register & Budget

Office Management: Meaning, definition, functions and kinds of office management

Records and Registers: Maintenance of attendance Register, stock register, cash register, physical efficiency record, Medical examination Record.

Budget: Meaning, Importance of Budget making, Criteria of a good Budget, Sources of Income, Expenditure, Preparation of Budget.

Unit-IV:

Facilities, & Time-Table Management

Facilities and equipment management: Types of facilities Infrastructure-indoor, out door. Care of school building, Gymnasium, swimming pool, Play fields, Play grounds Equipment: Need, importance, purchase, care and maintenance. Time Table Management: Meaning, Need, Importance and Factor affecting time table.

Unit-V:

Competition Organization

Importance of Tournament, Types of Tournament and its organization structure - Knock-out Tournaments, League or Round Robin Tournaments, Combination Tournament and challenge Tournament. Organization structure of Athletic Meet Sports Event Intramurals & Extramural Tournament planning

References:

- Broyles, F. J. & Rober, H. D. (1979). Administration of sports, Athletic programme: A Managerial Approach. New York: Prentice hall Inc. Bucher, C. A. (1983). Administration of Physical Education and Athletic programme. St. Louis: The C.V. Mosby Co. Kozman, H.C. Cassidy, R. & Jackson, C. (1960). Methods in Physical Education. London: W.B. Saunders Co. Pandey, L.K. (1977). Methods in Physical Education. Delhi: Metropolitan Book Depot. Sharma, V.M. & Tiwari, R.H.: (1979). Teaching Methods in Physical Education. Amaravati: Shakti Publication. Thomas, J. P. (1967). Organization & administration of Physical Education. Madras: Gyanodayal Press. Tirunaryanan, C. & Hariharan, S. (1969). Methods in Physical Education. Karaikudi: South India Press. Voltmer, E. F. & Esslinger, A. A. (1979). The organization and administration of Physical Education. New York: Prentice Hall Inc.

PAPER CODE – PET204

(ELECTIVE)

CONTEMPORARY ISSUES IN PHYSICAL EDUCATION, FITNESS AND WELLNESS

Unit – I

Concept of Physical Education and Fitness

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

Unit – II

Fitness, Wellness and Lifestyle

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

Unit – III

Principles of Exercise Program

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

Unit – IV

Methods of Improving Physical Fitness , Principles of Physical fitness improvement, Methods of training- Continues & Interval, Muscles contraction & Circuit training Fartlek & Plyometric training

Unit – V

Safety Education and Fitness Promotion

Health and Safety in Daily Life, First Aid and Emergency Care, Common Injuries and their Management, Modern Life Style and Hypo-kinetic Disease –Prevention and Management

References:

- Difiore, J.(1998). Complete guide to postnatal fitness. London: A & C Black,
Giam, C.K & The, K.C. (1994). Sport medicine exercise and fitness. Singapore: P.G. Medical Book.
Mcglynn, G., (1993). Dynamics of fitness. Madison: W.C.B Brown.
Sharkey, B. J.(1990). Physiology of fitness, Human Kinetics Book.

**SPORTS NUTRITION AND WEIGHT MANAGEMENT (ELECTIVE)
PAPER CODE PET205**

Unit – I

Introduction to Sports Nutrition

Meaning and Definition of Sports Nutrition, Basic Nutrition guidelines, Role of nutrition in sports, Factor to consider for developing nutrition plan

Unit – II

Nutrients: Ingestion to energy metabolism

Carbohydrates, Protein, Fat – Meaning, classification and its function, Role of carbohydrates, Fat and protein during exercise. Vitamins, Minerals, Water – Meaning, classification and its function. Role of hydration during exercise, water balance, Nutrition – daily caloric requirement and expenditure.

Unit – III

Nutrition and Weight Management

Meaning of weight management Concept of weight management in modern era Factor affecting weight management and values of weight management. Concept of BMI (Body mass index), Obesity and its hazard, Myth of Spot reduction, Dieting versus exercise for weight control, Common Myths about Weight Loss Obesity – Definition, meaning and types of obesity, Health Risks Associated with Obesity, Obesity - Causes and Solutions for Overcoming Obesity.

Unit – IV

Steps of planning of Weight Management

Nutrition – Daily calorie intake and expenditure, Determination of desirable body weight. Balanced diet for Indian School Children, 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

Unit – V

Disordered Eating

Prevention and Detection of AN, BN, and BE RiskFactors Socio-cultural issues Female Athlete Triad BodyImage.

References:

Bessesen, D. H. (2008). Update on obesity. *J ClinEndocrinolMetab*.93(6), 2027-2034.

Butryn, M.L., Phelan, S., & Hill, J. O.(2007). Consistent self-monitoring of weight: a key component of successful weight loss maintenance. *Obesity(Silver Spring)*. 15(12), 3091-3096.

Chu, S.Y. & Kim, L. J. (2007). Maternal obesity and risk of stillbirth: a metaanalysis. *Am J ObstetGynecol*, 197(3), 223-228.

DeMaria, E. J. (2007). Bariatric surgery for morbid obesity. *N Engl J Med*,356(21), 2176-2183.

Dixon, J.B., O'Brien, P.E., Playfair, J. (n.d.). Adjustable gastric banding and conventional therapy for type 2 diabetes: a randomized controlled trial. *JAMA*. 299(3), 316-323.

PART B PRACTICAL COURSE PEP201

and Field (Jumping Events)

High Jump (Straddle Roll), Approach Run, Take off, Clearance over the bar. Landing.

PEP202

Yoga:

Surya Namaskara,

Pranayams

Corrective Asanas

Kriyas

Asanas

· Sitting

· Standing

· Laying Prone Position,

· Laying Spine Position

PEP203

Racquet Sports:

Badminton: Fundamental Skills

Racquet parts, Racquet grips, Shuttle Grips. The basic stances. The basic strokes- Serves, Forehand-overhead and underarm, Backhand-overhead and underarm, Drills and lead up games, Types of games-Singles, doubles, including mixed doubles. Rules and their interpretations and duties of officials.

Table Tennis:

Fundamental Skills

The Grip-The Tennis Grip, Pen Holder Grip. Service-Forehand, Backhand, Side Spin, High Toss. Strokes-Push, Chop, Drive, Half Volley, Smash, Drop-shot, Balloon, Flick Shot, Loop Drive. Stance and Ready position and foot work. Rules and their interpretations and duties of officials.

Squash

Fundamental Skills: Service- Under hand and Over hand, Service Reception, Shot-Down the line, Cross Court Drop Half Volley Tactics – Defensive, attacking in game
Rules and their interpretations and duties of officials.

Tennis: Fundamental Skills.

Grips- Eastern Forehand grip and Backhand grip, Western grip, Continental grip,

Chopper grip. Stance and Footwork. Basic Ground strokes-Forehand drive, Backhand drive. Basic service. Basic Volley. Over-head Volley. Chop Tactics – Defensive, attacking in game, Rules and their interpretations and duties of officials.

Part – c

Practical Courses

PETP – 201 Teaching practices:

10 teaching practice lessons out of which 5 lessons in class-room situation and 5

Lessons for out-door activities within premises on the students of B.P.Ed course

SEMESTER III
SPORTS TRAINING
PAPER COD – PET301

Unit – I

Introduction to Sports Training

Meaning and Definition of Sports Training, Aim and Objective of Sports Training
Principles of Sports Training, System of Sports Training – Basic Performance, Good Performance and High, Performance Training

Unit – II

Training Components

Strength – Mean and Methods of Strength Development, Speed – Mean and Methods of Speed Development, Endurance - Mean and Methods of Endurance Development Coordination – Mean and Methods of coordination Development, Flexibility – Mean and Methods of Flexibility Development

Unit – III Training

Process

Training Load- Definition and Types of Training Load, Principles of Intensity and Volume of stimulus, Technical Training – Meaning and Methods of Technique Training
Tactical Training – Meaning and Methods of Tactical Training

Unit – IV Training programming and planning

Periodization – Meaning and types of Periodization Aim and Content of Periods – Preparatory, Competition, Transitional etc. Planning – Training session Talent Identification and Development

Unit – V

Forms of Motion-Kinematics-Kinetics-Guiding Principles of the above Mechanical Concepts-Hydrodynamic Concepts and Application of Mechanics in Sports- Aerodynamic Concepts and Application of Mechanics in Sports Analysis of Sports Techniques by Cinematographic and Video Analysis.

Reference:

Dick, W. F. (1980).Sports training principles.London: Lepus Books. Harre, D.(1982).Principles of sports training.Berlin: Sporulated. Jensen, R. C.& Fisher, A.G. (1979). Scientific basis of athletic conditioning. Philadelphia

Lea and Fibiger, 2ndEdn.

Matvyew, L.P. (1981).Fundamental of sports training. Moscow: Progress Publishers. Singh, H. (1984).Sports training, general theory and methods.Patials: NSNIS.

Uppal, A.K., (1999).Sports Training.New Delhi: Friends Publication.

COMPUTER APPLICATIONS IN PHYSICAL EDUCATION
Paper Code – PET302

Unit – I:

Introduction to Computer

Meaning, need and importance of information and communication technology (ICT).

Application of Computers in Physical Education, define and functions of Hardware, Software

Unit II

Components of computer, input and output device, Application software used in Physical Education and sports

Unit – III:

MS Word

Introduction to MS Word, Creating, saving and opening a document, Formatting Editing features Drawing table , page setup, paragraph alignment, spelling and grammar check printing option, inserting, page number, graph, footnote and notes

Unit – IV:

MS Excel

Introduction to MS Excel, Creating, saving and opening spreadsheet, creating formulas Format and editing features adjusting columns width and row height understanding charts.

Unit – V:

MS Power Point

Introduction to MS Power Point, Creating, saving and opening a ppt. file, format and editing features slide show , design , inserting slide number , picture ,graph ,table Preparation of Power point presentations

Referances:

Irtegov, D. (2004). Operating system fundamentals. Firewall Media.

Marilyn, M.& Roberta, B.(n.d.).Computers in your future. 2nd edition, India: Prentice Hall. Milke, M.(2007). Absolute beginner's guide to computer basics. Pearson Education Asia.

Sinha, P. K. & Sinha, P. (n.d.).Computer fundamentals. 4th edition, BPB Publication.

SPORTS PSYCHOLOGY AND SOCIOLOGY
Paper Code – PET303

Unit -I:

Introduction

Meaning, Importance and scope of Educational and Sports Psychology, General characteristics of Various Stages of growth and development, Types and nature of individual differences; Factors responsible –Hereditry And environment, Psycho- sociological aspects of Human behavior in relation to physical education and sports

Unit-II:

Sports Psychology

Nature of learning, theories of learning, Laws of learning, Plateau in Learning; & transfer of training, Meaning and definition of personality, characteristics of personality, Dimension of personality, Personality and Sports performance, Nature of motivation: Factors influencing motivation; Motivation and techniques and its impact on sports performance. Mental Preparation Strategies: Attention focus, Self- talk, Relaxation, Imaginary. Aggression and Sports, Meaning and nature of anxiety, Kinds of anxiety. Meaning and nature of stress; Types of stress, Anxiety, Stress, Arousal and

their effects on sports performance

Unit-III

Sociology , Meaning of Sociology • Scope of Sociology • Sociology of Physical Education & Sports • Social Significance of Sports

Unit-IV:

Relation between Social Science and Physical Education.

Orthodoxy, customs, Tradition and Physical Education., Festivals and Physical Education. Socialization through Physical Education. Social Group life, Social conglomeration and Social group, Primary group and Remote group.

Unit-V

Culture : Meaning and Importance.

Features of culture, Importance of culture. Effects of culture on people life style. Different methods of studying Observation/ Inspection method, Questionnaire method, Interview method

References:

Ball, D. W. & Loy, J. W. (1975).Sport and social order; Contribution to the sociology of sport.London: Addison Wesley Publishing Co., Inc. Blair, J.& Simpson, R.(1962). Educational psychology, New York:McMillan Co.

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- Loy, J. W., Kenyon, G. S. & McPherson, B. D. (1978). Sport and social system. London: Addison Wesley Publishing Company Inc.
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- Mathur, S.S., (1962). Educational psychology. Agra.VinodPustakMandir.
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**SPORTS MEDICINE, PHYSIOTHERAPY AND REHABILITATION
(ELECTIVE)**

Paper Code – PET304

Unit-I: -

Sports Medicine:

Sports Medicine: Meaning, Definition, Aims, Objectives, Modern Concepts and Importance. Athletes Care and Rehabilitation: Contribution of Physical Education Teachers and Coaches. Need and Importance of the study of sports injuries in the field of Physical Education

Unit II

Prevention of injuries in sports – Common sports injuries – Diagnosis – First Aid - Treatment - Laceration – Blisters – Contusion - Strain – Sprain Fracture – Dislocation and Cramps – Bandages – Types of Bandages – trapping and supports.

Unit-III:

Physiotherapy

Definition – Guiding principles of physiotherapy, Importance of physiotherapy, Introduction and demonstration of treatments - Electrotherapy – infrared rays – Ultraviolet rays –short wave diathermy – ultrasonic rays.

Unit-IV:

Hydrotherapy:

Introduction and demonstration of treatments of Cry therapy, Thermo therapy, Contrast Bath, Whirlpool Bath – Steam Bath – Sauna Bath – Hot Water Fomentation –Massage: History of Massage – Classification of Manipulation (Swedish System) physiological Effect of Massage.

Unit-V:

Therapeutic Exercise:

Definition and Scope – Principles of Therapeutic Exercise – Classification, Effects and uses of Therapeutic exercise – passive Movements (Relaxed, Forced and passive - stretching) – active movements (concentric, Eccentric and static) application of the therapeutic exercise: Free Mobility Exercise – Shoulder, Elbow – Wrist and Finger Joints , Hips, Knee, ankle and Foot joints – Trunk. Head and Neck exercises.

References:

- Christine, M. D., (1999). Physiology of sports and exercise. USA: Human Kinetics.
- Conley, M. (2000). Bioenergetics of exercise training. In T.R. Baechle, & R.W. Earle, (Eds.), Essentials of Strength Training and Conditioning (pp. 73-90). Champaign, IL: Human Kinetics.
- David, R. M. (2005). Drugs in sports, (4th Ed). Routledge Taylor and Francis Group.
- Hunter, M. D. (1979). A dictionary for physical educators. In H. M. Borrow & R. McGee, (Eds.), A Practical approach to measurement in Physical Education (pp. 573-74). Philadelphia: Lea & Febiger.
- Jeyaprakash, C. S., Sports Medicine, J.P. Brothers Pub., New Delhi, 2003.
- Khanna, G.L., (1990). Exercise physiology & sports medicine. Delhi: Lucky Enterprises.
- Mathew, D.K. & Fox, E.L, (1971). Physiological basis of physical education and athletics. Philadelphia: W.B. Saunders Co.
- Pandey, P.K., (1987). Outline of sports medicine, New Delhi: J.P. Brothers Pub.
- Williams, J. G. P. (1962). Sports medicine. London: Edward Arnold Ltd.

CURRICULUM DESIGN (Elective)
Paper Code – PET305

UNIT-I

Modern concept of the curriculum

Need and importance of curriculum, Need and importance of curriculum development, the role of the teacher in curriculum development. Factors affecting curriculum - Social factors - Personnel qualifications – Climatic consideration - Equipment and facilities -Time suitability of hours. National and Professional policies, Research finding

UNIT-II

Basic Guide line for curriculum construction; contest (selection and expansion).

Focalization, Socialization, Individualization, Sequence and operation, Steps in curriculum construction. Selecting material for instruction. Classification of activities in physical education, suitability of activities for different age groups and sexes. Cultural influence in the choice of activities, flexibility of program material, Committee Recommendations- NCERT, CBSE, UGC recommendations on curriculum for school and colleges, curriculum followed in colleges of Physical Education B.P.Ed, B.P.E, M.P.E, and M.Phil

UNIT-III

Curriculum-Old and new concepts, Mechanics of curriculum planning.

Basic principles of curriculum construction. Curriculum Design, Meaning, Importance and factors affecting curriculum design. Principles of Curriculum design according to the needs of the students and state and national level policies. Role of Teachers

UNIT-IV

Under-graduate preparation of professional preparation.

Areas of Health education, Physical education and Recreation. Curriculum design- Experience of Education, Field and Laboratory. Teaching practice. Professional Competencies to be developed-Facilities and special resources for library, laboratory and other facilities.

UNIT-V

Curriculum Description Accuracy Analysis. Acceptability Analysis.. Feasibility Analysis Affordability Analysis.

Reference:

- Barrow, H. M. (1983). Man and movement: principles of physical education. Philadelphia: Lea and Febiger.
- Bucher, C. A. (1986). Foundation of physical education: St. Louis: The C. V. Mosby & Company.
- Cassidy, R. (1986). Curriculum development in physical education. New York: Harper & Company.
- Cowell, C.C. & Hazelton, H.W. (1965). Curriculum designs in physical education. Englewood Cliffs: N.J. prentice Hall Inc.
- Larson, L.A. (n.d.). Curriculum foundation in physical education. Englewood Cliffs: N.J. Prentice Hall Inc.
- Underwood, G. L. (1983). The physical education curriculum in secondary school: planning and implementation. England: Taylor and Francis Ltd.
- Willgoose, C.E. (1979). Curriculum in physical education. 3rd Ed. Englewood Cliffs.: N.J. Prentice Hall, Inc.

PART – B PRACTICAL COURSES
SEMESTER III

PEP301

Track and field's (Throwing Events)

Discus Throw, Javelin, Hammer throw, shot-put, Basic Skills and techniques of the Throwing events, Ground Marking / Sector Marking, Interpretation of Rules and Officiating. Grip, Stance, Release, Reserve/ (Follow through action), Rules and their interpretations and duties of officials

PEP302

Combative Sports:

Boxing: Fundamental Skills

Player stance, Stance - Right hand stance, left hand stance. Footwork – Attack, defense. Punches – Jab, cross, hook, upper cut, combinations. Defense slip – bob and weave, parry/block, cover up, clinch, counter attack Tactics – Toe to toe, counter attack, fighting in close, feinting, Rules and their interpretations and duties of officials.

Martial Arts/Karate: Fundamental Skills

Player Stances – walking, hand positions, front-leaning, side-fighting. Hand Techniques Punches (form of a punch, straight punch, and reverse punch), Blocks (eight basic).

Leg Techniques - Snap kicks, stretching straight leg, thrust kicks, sidekicks, round house. Forms The first cause Katas. Self Defense - against punches, grabs and strikes, against basic weapons (knife, club sticks). Sparring - One step for middle punch, high punches and groin punch. (Defended by appropriate block from eight basic blocks). Rules and their interpretations and duties of officials.

Taekwondo Fundamental Skills

Player Stances – walking, extending walking, L stance, cat stance. Fundamental Skills Sitting stance punch, single punch, double punch, triples punch. Punching Skill from sparring position – front-fist punch, rear fist punch, double punch, and four combination punches. Foot Techniques (Balgisul) – standing kick (soseochagi), Front kick (AP chagi), Arc kick (BandalChagi), Side kick, (YeopChagi), Turning kick (DollyoChagi), Back kick (Twit Chagi), Reverse turning kick (BandaedollyoChagi), Jump kick (TwimyoChagi), Poomsae (Forms) – Jang, Yi Jang, Sam Jang, Sa Jang, O Jang, Yook Jang, Chil Jang, Pal Jang (Fundamental Movement – eye control, concentration of spirit, speed control, strength control, flexibility, balance, variety in techniques) Sparring (Kyorugi) – One Step Sparring (hand techniques, foot techniques, self defense techniques, combination kicks), Free Sparring. Board Breaking (Kyokpa) – eye control, balance, power control, speed, point of attack. Rules and their interpretations and duties of officials.

Judo: Fundamental skills

Rei (Salutation)-Ritsurei(Salutation in standing position), Zarai (Salutation in the sitting position) Kumi kata (Methods of holding judo costume) Shisei (Posture in Judo)

Kuzushi (Act of disturbing the opponent posture) Tsukuri and kake (Preparatory action for attack) Ukemi (Break Fall)-UrhiroUkemi (Rear break Fall), Yoko Ukemi (Side Break Fall), Mae Ukemi (Front Break Fall), Mae mawariUkemi (Front Rolling break fall) Shin Tai (Advance or retreat foot movement)-Suri-ashi (Gliding foot), Twugi-ashi (Following footsteps), Ayumi-ashi (Waling steps. Tai Sabaki (Management of the body) NageWaze (Throwing techniques)-HizaGuruma (Knee wheel), SesaeTwurikomi-ashi (Drawing ankle throw), De ashihari (Advance foot sweep), O Goshi (Major loim), SeoiNage (Shoulder throw). Katamawaze(Grappling techniques)-Kesagatame (Scaff hold), Kata gatame (Shoulder hold), Kami shihogatama (Locking of upper four quarters), Method of escaping from each hold.

Wrestling: Fundamental Skills

Take downs, Leg tackles, Arm drag. Counters for take downs, Cross face, Whizzer series. Escapes from under-sit-out turn in tripped. Counters for escapes from under- Basic control back drop, Counters for stand up. Pinning combination-Nelson series (Half Nelson, Half Nelson and Bar arm), Leg lift series, Leg cradle series, Reverse double bar arm, chicken wing and half Nelson. Escapes from pining: Wing lock series, Double arm lock roll, Cridge. Standing Wrestling-Head under arm series, whizzer series Referees positions.

Fencing: Fundamental Skill

Basic Stance - on-guard position (feet and legs) Footwork – advance, retire, lunge, Step-lunge Grip – hold a foil correctly, Etiquette – salute and handshake to coaches and partners Hit a target (glove, mask, person) at riposte distance Lunge from an on-guard position. Attack - simple attacks from sixte – direct, disengage, doublé attack, compound attacks high line – one-two and cut-over disengage, Cut-over attack, Low line attacks Semi circular parries – octave and septime Understand the layout of a piste. Compound or successive parries. Lateral parry and direct riposte Fence a bout – judges etc. salutes and handshakes Rules and their interpretations and duties of officials.

PEP302

Team Games

Base Ball Fundamental Skills

Player Stances – walking, extending walking, L stance, cat stance. Grip – standard grip, choke grip, Batting – swing and bunt. Pitching – Baseball : slider, fast pitch, curve ball, drop ball, rise ball, change up, knuckle ball, screw ball, Softball: windmill, sling shot,

starting position: wind up, set. Fielding – Catching: basics to catch fly hits, rolling hits,

Throwing: over arm, side arm. Base running – Base running: single, double, triple, home run, Sliding: bent leg slide, hook slide, head first slide. Rules and their interpretations and duties of officials.

Netball: Fundamental Skills

Catching: one handed, two handed, with feet grounded, in flight. Throwing (different passes and their uses): one handed passes (shoulder, high shoulder, underarm, bounce, lob); two handed passes (push, overhead, bounce). Footwork: landing on one foot; landing on two feet; pivot; running pass. Shooting: one hand; two hands; forward step shot; backward step shot. Techniques of getting free: dodge and sprint; sudden sprint;

sprint and stop; sprinting with change of speed. Defending: marking the player; marking the ball; blocking; inside the circle; outside the circle (that is, defending the circle edge against the pass in). Intercepting: pass; shot. The toss-up. Role of individual players

Rules and their interpretations and duties of officials.

Cricket: Fundamental Skills

Batting-Forward and backward defensive stroke, Bowling-Simple bowling techniques

Fielding-Defensive and offensive fielding, Catching-High catching and Slip catching

Stopping and throwing techniques, Wicket keeping techniques

Football: Fundamental Skills

Kicks-Inside kick, Instep kick, Outer instep kick, lofted kick, Trapping-trapping rolling the ball, trapping bouncing ball with sole, Dribbling-With instep, inside and

outer instep of the foot., Heading-From standing, running and jumping., Throw in

Feinting-With the lower limb and upper part of the body. Tackling-Simple tackling,

Slide tackling. Goal Keeping-Collection of balls, Ball clearance-kicking, throwing and deflecting.

Hockey: Fundamental Skills

Player stance & Grip, Rolling the ball, Dribbling, Push, Stopping, Hit, Flick, Scoop Passing – Forward pass, square pass, triangular pass, diagonal pass, return pass, Reverse hit, Dodging, Goal keeping – Hand defense, foot defense, Positional play in attack and defense. Rules and their interpretations and duties of officials. Rules and their interpretations and duties of officials. Ground Marking.

Softball Fundamental Skills

Catching: one handed, two handed, with feet grounded, in flight. Throwing (different passes and their uses): one handed passes (shoulder, high shoulder, underarm, bounce, lob); two handed passes (push, overhead, bounce). Footwork: landing on one foot; landing on two feet; pivot; running pass. Shooting: one hand; two hands; forward step shot; backward step shot. Techniques of getting free: dodge and sprint; sudden sprint; sprint and stop; sprinting with change of speed. Defending: marking the player; marking the ball; blocking; inside the circle; outside the circle (that is, defending the circle edge against the pass in). Intercepting: pass; shot. The toss-up. Role of individual players Rules and their interpretations and duties of officials.

Volleyball: Fundamental Skills

Players Stance-Receiving the ball and passing to the team mates, The Volley (Over head pass), The Dig(Under hand pass). Service-Under Arm Service, Side Arm Service, Tennis Service, Round Arm Service. Rules and their interpretations and duties of officials.

Hand Ball:

Fundamental Skills-Catching, Throwing, Ball Control, Goal Throws-Jump Shot, Centre Shot, Dive Shot, Reverse Shot, Dribbling-High and Low, Attack and Counter Attack, Simple Counter Attack, Counter Attack from two wings and centre, Blocking, Goal keeping, Defense. Rules and their interpretations and duties of officials.

Basket ball: Fundamental Skills

Player stance and ball handling, Passing-Two Hand chest pass, Two hand Bounce Pass, One Hand Base ball pass, Side Arm Pass, Over Head pass, Hook Pass. Receiving-Two Hand receiving, One hand receiving, Receiving in stationary position, Receiving while jumping, Receiving while running. Dribbling-How to start dribble, how to drop dribble, High dribble, Low dribble, Reverse dribble, rolling dribble.

Shooting-Layup shot and its variations, one hand set shot, one hand jump shot, Hook shot, and Free throw. Rebounding-Defensive rebound, Offensive rebound, Knock out, Rebound Organization.

Individual Defensive-Guarding the man with the ball and without the ball. Pivoting.

Rules and their interpretations and duties of the officials.

Part – C
Practical Courses (Teaching Practices)

PETP – 301 Teaching practices:

10 teaching lesson plans for Racket Sport/ Team Games/ Indigenous Sports out of which 5 lessons internal and 5 lessons external at school.

SEMESTE IV

MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION
Paper Code – PET401

Unit- I

Introduction to Test & Measurement & Evaluation

Meaning of Test & Measurement & Evaluation in Physical Education Need & Importance of Test & Measurement & Evaluation in Physical Education, Principles of Evaluation

Unit- II

Criteria; Classification and Administration of test

Criteria of good Test Criteria of tests, scientific authenticity (reliability, objectivity, validity and availability of norms) Type and classification of Test Administration of test, advance preparation – Duties during testing – Duties after testing.

Unit- III

Physical Fitness Tests

AAHPER youth fitness test, National physical Fitness Test, Indiana Motor Fitness Test JCR test, U.S Army Physical Fitness Test

Unit- IV

Sports Skill Tests

Lockhart and McPherson badminton test, Johnson basketball test, McDonald soccer test, S.A.I volleyball test, S.A.I Hockey test.

Unit- V

Measures of Posture: IOWA posture test, measures of anthropometric measurements,

Girth Measurements, Bi-acromial chest illio-crestal, bi-epicondylar (femur and humerus), height, sports competition anxiety test (SCAT), Eysenck's Personality Inventory (EPI)

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.
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- 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 Wiley and Sons.
- Sodhi, H.S., & Sidhu, L.S. (1984). Physique and selection of sports- a kinanthropometric study. Patiala: Punjab Publishing House.

KINESIOLOGY AND BIOMECHANICS
Paper Code – PET402

Unit – I

Introduction to Kinesiology and Sports Biomechanics

Meaning and Definition of Kinesiology and Sports Biomechanics, Importance of Kinesiology and Sports Biomechanics to Physical Education Teacher,, Athletes and Sports Coaches.

Unit – II

Terminology of Fundamental Movements, Fundamental concepts of following terms – Axes and Planes, Centre of Gravity, Equilibrium, Line of Gravity

Unit – III

Fundamental Concept of Anatomy and Physiology

Classification of Joints and Muscles, Types of Muscle Contractions, Posture – Meaning, Types and Importance of good posture. Fundamental concepts of following terms- Angle of Pull, All or None Law, Reciprocal, Innovation

Unit – IV

Mechanical Concepts

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

Unit – V

Kinematics and Kinetics of Human Movement

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

Reference:

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

Hay, J. G. & Reid, J. G.(1982).The anatomical and mechanical basis of human motion. Englewood Cliffs, N.J.: prentice Hall Inc.

Hay, J. G. & Reid, J. G.(1988).Anatomy, mechanics and human motion. Englewood Cliffs, N.J.: prentice Hall Inc.

Hay, J. G. (1970).The biomechanics of sports techniques. Englewood Cliffs, N.J.: Prentice Hall, Inc.

Simonian, C.(1911).Fundamentals of sport biomechanics. Englewood Cliffs, N.J.: Prentice Hall Inc.

RESEARCH AND STATISTICS IN PHYSICAL EDUCATION
Paper Code – PET403

Unit-I

Introduction to Research

Definition of Research, Need and importance of Research in Physical Education and Sports. Scope of Research in Physical Education & Sports. Classification of Research Research Problem, Meaning of the term, Location and criteria of Selection of Problem, Formulation of a Research Problem, Limitations and Delimitations.

Unit-II

Survey of Related Literature

Need for surveying related literature. Literature Sources, Library Reading, Research Proposal, Meaning and Significance of Research Proposal. Preparation of Research proposal / project. Research Report: A group project is to be undertaken by a small batch of students under the supervision of a teacher, wherein it is expected to survey school facilities of physical education, health assessment programme evaluation, fitness status of the students, staff and other stakeholders etc. and submit the report to the institution.

Unit-III

Basics of Statistical Analysis

Statistics: Meaning, Definition, Nature and Importance Class Intervals: Raw Score, Continuous and Discrete Series, Class Distribution, Construction of Tables, Graphical Presentation of Class Distribution: Histogram, Frequency Polygon, Frequency Curve. Cumulative Frequency Polygon, Ogive, Pie Diagram. Sampling, Types of Sampling

Unit- IV

Statistical Models in Physical Education and Sports

Measures of Central Tendency: Mean, Median and Mode-Meaning, Definition, Importance, Advantages, Disadvantages and Calculation from Group and Ungrouped Data, Measures of Variability: Meaning, importance, computing from group and ungroup data Percentiles and Quartiles: Meaning, importance, computing from group and ungroup data

Unit- V

Meaning of Normal Probability Curve, characteristics and properties of Normal Curve. Application of N.P.C, Meaning of Skewness and kurtosis. Calculation of various combination of Heads and Tails. Meaning and Types of Linear Correlation.

Computation of Correlation Coefficient with Product Movement Method and Rank Difference Method.

References:

- Best, J.W. (1963). Research in education. U.S.A.: Prentice Hall.
- Bompa, T. O. &Haff, G. G. (2009). Periodization: theory and methodology of training, 5th ed. Champaign, IL: Human Kinetics.
- Brown, L. E., &Ferrigno, V. A. (2005). Training for speed, agility and quickness, 2nd ed. Champaign, IL: Human Kinetics.
- Brown, L.E. & Miller, J., (2005). How the training work. In: Training Speed, Agility, and Quickness. Brown, L.E. &Ferrigno, V.A &Ferrigno, V.A., eds. Champaign, IL: Human Kinetics.
- Carl, E. K., & Daniel, D. A. (1969). Modern principles of athletes training. St. Louis: St. Louis's Mosby Company.
- Clark, H. H., & Clark, D. H. (1975). Research process in physical education. Englewood cliffs, New Jersey: Prentice Hall, Inc.
- Garrett, H.E. (1981). Statistics in psychology and education. New York: VakilsFeffer and Simon Ltd.
- Oyster, C. K., Hanten, W. P., & Llorens, L. A. (1987). Introduction to research: A guide for the health science professional. Landon: J.B. Lippincott Company.
- Thomas, J.R., & Nelson J.K. (2005). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.
- Thomas, J.R., Nelson, J.K. & Silverman, S.J. (2011). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.
- Uppal, A. K. (1990). Physical fitness: how to develop. New Delhi: Friends Publication.
- Verma, J. P. (2000). A text book on sports statistics. Gwalior: Venus Publications

THEORY OF SPORTS AND GAMES (ELECTIVE)
Paper Code – PET405

UNIT-I

INTRODUCTION

General Introduction of specialized games and sports–

Athletics, Badminton, Basketball, Cricket, Football, Gymnastic, Hockey, Handball, Kabaddi, Kho-Kho, Tennis, Volleyball and Yoga.

Each game or sports to be dealt under the following heads

History and development of the Game and Sports, Ground preparation, dimensions and marking, Standard equipment and their specifications, Ethics of sports and sportsmanship

UNIT-II

Scientific Principles of coaching: (particular sports and game specific)

Motion – Types of motion and Displacement, Speed, Velocity, Acceleration, Distance and Newton's Law of motions. Force – Friction, Centripetal and Centrifugal force, Principles of force. Equilibrium and its types, Lever and its types, Sports Training – Aims, Principles and characteristics. Training load – Components, Principles of load, Over Load (causes and symptoms).

UNIT-III

Physical fitness components: (particular sports and game specific)

Speed and its types, Strength and its types, Endurance and its types, Flexibility and its types, Coordinative ability and its types, Training methods: - Development of components of physical fitness and motor fitness, through following training methods (continuous method, interval method, circuit method, fartlek /speed play and weight training)

UNIT-IV

Conditioning exercises and warming up.

Concept of Conditioning and warming up. Role of weight training in games and sports. Teaching of fundamental skill & their mastery (technique, tactic and different phases of skill acquisition). Recreational and lead up games Strategy – Offence and defense, Principles of offence and defense.

References:

Bunn, J. W. (1968). The art of officiating sports. Englewood cliffs N.J. Prentice Hall.

Bunn, J. W. (1972). Scientific principles of coaching. Englewood cliffs N. J. Prentice Hall.

Dyson, G. H. (1963). The mechanics of athletics. London: University of London Press Ltd.

Lawther, J.D. (1965). Psychology of coaching. New York: Pre. Hall.

Singer, R. N. (1972). Coaching, athletic & psychology. New York: M.C. Graw Hill.

SPORTS MANAGEMENT
Paper Code – PET405

Unit-I

Nature and Concept of Sports Management., Progressive concept of Sports management. The purpose and scope of Sports Management., Essential skills of Sports Management. Qualities and competencies required for the Sports Manager. Event Management in physical education and sports.

Unit-II

Meaning and Definition of leadership, Leadership style and method. Elements of leadership. Forms of Leadership. Autocratic, Laissez-faire, Democratic, Benevolent Dictator, Qualities of administrative leader. Preparation of administrative leader. Leadership and Organizational performance.

Unit-III

Sports Management in Schools, colleges and Universities. Factors affecting planning
Planning a school or college sports programme. Directing of school or college sports programme. Controlling a school, college and university sports programme.
Developing performance standard, establishing a reporting system, Evaluation.
Thereward/punishment system

Unit-IV

Financial management in Physical Education & sports in schools, Colleges and Universities. Budget – Importance, Criteria of good budget, Steps of Budget making Principles of budgeting.

REFERENCES:

- Ashton, D. (1968).Administration of physical education for women.New York: The Ronal Press
Cl.
Bucher, C.A. Administration of physical education and athletic programme. 7th Edition, St. Louis: The C.V. Mosby Co.
Daughtrey, G. & Woods, J.B. (1976). Physical education and intramural programmes, organisation and administration. Philadelphia U.S.A. : W.B. Saunders Cp.
Earl, F. Z,& Gary, W. B. (1963).Management competency development in sports and physical education. Philadelphia: W. Lea and Febiger.

Part – C
Practical Courses (Teaching Practices)

PETP –401 Sports Specialization: Track and field / Gymnastics / Swimming

(4 internal lessons at practicing school and 1 final external lesson on the students of practicing school as a sports specialization of any discipline mentioned above.)

PETP- 402

Games Specialization: Kabaddi, Kho-kho, Base ball, cricket, Football, Hockey, Softball Volleyball, Handball, Basketball, Netball, Badminton, Table Tennis, Squash, Tennis (4 internal lessons at practicing school and 1 final external lesson on the students of Practicing school as a games specialization of any discipline mentioned above.)

Note: Where ever details of any activities are not mentioned, it is expected to elaborate skills by the competent bodies of local Universities.