



# PROF. RAJENDRA SINGH (RAJJU BHAIYA) UNIVERSITY, PRAYAGRAJ

## Structure of Syllabus for the

### Program: M.P.ED Subject: Physical Education

Structure of Syllabus Developed by			
Name of BoS Convener/BoS Member	Designation	Department	College/ University
Prof. Raj Kumar Gupta	Dean	Faculty of Art	PRSU PRAYAGRAJ
Dr. Rambhushan Mishra	Astt. Professor	Physical Education	Deen Dayal Upadhyay Govt. P.G. College Saidabad Prayagraj
Dr. Anshuman Singh	Astt. Professor	Physical Education	Govt. P.G. College Raniganj Pratapgarh
Dr. Seema Devi	Astt. Professor	Physical Education	Govt. P.G. College Sangipur Pratapgarh

Course Code		Course Title	Credits	T/P	Evaluation	
A	B				CIE	ETE
A	B	C	D	E	F	G
<b>SEMESTER I (YEAR I)</b>						
<b>E020701T</b>	CORE	Physical Fitness, Health and Wellness	5	T	25	75
<b>E020702T</b>	CORE	Physiology of Exercise	5	T	25	75
<b>E020703T</b>	CORE	Research Methodology in Physical Education & Sports	5	T	25	75
<b>E020707T</b>	FIRST ELECTIVE (Select any one)	Test Measurement and Evaluation in Physical Education	5	T	25	75
<b>E020705T</b>		Sports Sociology				
<b>E020706P</b>	SECOND ELECTIVE (Select any one)	Track and Field I: Running Events/Gymnastics/ Swimming (Any One)	4	P	50	50
<b>E020707P</b>		Combative Sports: Boxing/Karate/Taekwondo /Judo/Wrestling/Fencing/Lathi ( Any One)				
<b>SEMESTER II (YEAR I)</b>						
<b>E020801T</b>	CORE	Applied Statistics in Physical Education and Sports	5	T	25	75
<b>E020802T</b>	CORE	Sports Biomechanics and Kinesiology	5	T	25	75
<b>E020803T</b>	CORE	Sports Medicine, Nutrition, Athletic Care & Rehabilitation	5	T	25	75
<b>E020804T</b>	THIRD ELECTIVE (Select any one)	Sports Management	5	T	25	75
<b>E020805T</b>		Yogic Sciences				
<b>E020806P</b>	FOURTH ELECTIVE (Select any one)	Track and Field II: Jumping Events & Hurdle /Gymnastics/ Swimming (Any One)	4	P	50	50
<b>E020807P</b>		Internship (Teaching & Coaching) During Sem. Break				

SEMESTER III (YEAR II)						
E020901T	CORE	Scientific Principles of Sports Training.	5	T	25	75
E020902T	CORE	Sports Journalism and Mass Media	5	T	25	75
E020903T	CORE	Sports Engineering and Technology	5	T	25	75
E020904T	FIFTH ELECTIVE (Select any one)	Planning and Evaluation of Sports Training	5	T	25	75
E020905T		Evaluation Techniques In Physical Education				
E020906T	SIXTH ELECTIVE (Select any one)	Track and Field III: Throwing Events & Heptathlon /Gymnastics/ Swimming (Any One)	4	P	50	50
E020907T		Game Specialization				
SEMESTER IV (YEAR II)						
E021001T	CORE	ICT in Physical Education and Sports	5	T	25	75
E021002T	CORE	Sports Psychology	5	T	25	75
E021003T	SEVENTH ELECTIVE (Select any one)	Gender Studies in Physical Education	4	T	25	75
E021004T		Disability/Inclusive Sports Education				
E021005R	RESEARCH PROJECT/ DISSERTATION	Major Research Project/ Dissertation	10	R	50	50

**NOTE:**

1. Do not mark any Code/Information in Column-A, it will be indorsed by the University.
2. T/Pin Column-Estands for **Theory/Practical**.
3. CIEin Column-Fstands for '**Continuous Internal Evaluation**' and depicts the maximum internal marks. Respective examination will be conducted by subject teacher.
4. ETEin Column-Gstands for '**External Evaluation**' and depicts the maximum external marks. Respective Examination will be conducted by the University.
5. Column-B defines the nature of course/paper. The word **CORE** herein stands for **Compulsory Subject Paper**.
6. Column-D depicts the credits assigned for the corresponding course/paper.
7. **First Elective:** It will be a Subject Elective. Students may select one of the two subject papers under this category.
8. **Second Elective:**It will designate a Practical Paper or equivalently a Field Visit orProject Presentation. In case of Field Visit, student is required to submit a detailed report of the visit for the purpose of evaluation. The report should include the observational features and benefits of the visit.In case of Project Presentation, the student may be assigned to go for a survey/practical or theoretical project/assignment or seminar with presentation.
9. **Third Elective:**It will be a Subject Elective. Students may select one of the two subject papers under this category.
10. **Fourth Elective:**It will accommodate a practical paper or Industrial Training orProject Presentation. In case of Industrial Training, student may be allowed for the summer training and is required to submit a detailed training report including training certificate for the evaluation.
11. **Fifth Elective:**It will be a Subject Elective. Students may select one of the two subject papers under this category.
12. **Sixth Elective:**It will be a Practical Paper or equivalently aProject Presentation based on Survey/ Seminar/ Assignment. In case of Project Presentation, student has to submit an exhaustive report on respective topic and to face an open presentation for the evaluation.
13. **Seventh Elective:**It will be a Generic Elective. The student may study or receive training of the any subject of his interest (depends on the availability in his institution of enrollment).
14. **Master Research Project:**It will be a Major Research Project or equivalently aresearch-oriented Dissertation on the allotted topic. The student will have to complete his/her research project under any supervisor. The supervisor and the topic for research project shall be allotted in second semester. The student straight away will be awarded 05 credits if he publishes a research paper on the topic of Research Project or Dissertation.

**SEMESTER – I**  
**Paper –I**  
**PHYSICAL FITNESS, HEALTH AND WELLNESS**

MM 100

Credits 05

Unit I – Physical Fitness

Meaning and Definition of Physical Fitness, Physical Fitness Concepts and techniques, Principles of Physical Fitness, Physiological Principles involved in human movement. Components of Physical Fitness. Leisure time physical activity and identification of opportunities in the community to participate in this activity. Current trends in fitness and conditioning, Components total health, Fitness and relationship between physical activity and lifelong wellness.

Unit II – Concept of Health and Health Problems

Concept, Dimension, Spectrum and Determinants of health, Definition of Health , Health Educations , Health Instruction, Health Supervision Aims and objectives Principals of Health education, Health Service and guidance instruction in hygiene.

Communicable and Non communicable Diseases; Obesity, Malnutrition, adulteration in food, Environmental sanitation, Explosive Population, Personal and Environmental hygiene for schools, Objective of school health service, Role of Health education in school; Health Services – Care of skin , Nails, Eye health service, Nutritional service, Health appraisal, Health record, Healthful school environment, first-aid and emergency care etc.

Unit – III Hygiene and Health

Meaning of Hygiene, Types of Hygiene, Dental Hygiene Effect of Alcohol on Health. Effect of tobacco on Health, Life style Management of Hypertension, Obesity and stress.

Unit IV – Climatic conditions and sports performance and ergogenic aids.

Variation in Temperature and humidity – Thermoregulation – Sports performance in hot climate, Cool Climate, High altitude. Influence of; Amphetamine, Anabolic steroids, Androstenedione, Beta Blocker, Chlorine, Creatine, human growth hormone on sports performance. Narcotic, Stimulants: Amphetamines, Caffeine, Ephedrine, Sympathomimetic amines. Stimulants and sport performance.

REFERENCE:

David K. Miller & T. Earl Allen, Fitness, A life time commitment, Surjeet Publication Delhi 1989. Dificore judy, the complete guide to the postnatal fitness, A & C Black Publishers Ltd. 35 Bedford. row, London 1998

Dr. A.K. Uppal, Physical Fitness, Friends publications (India), 1992. Warner W.K. Oeger & Sharon A. Hoeger, Fitness and Wellness, Morton Publishing Company, 1990.

Elizabeth & Ken day, Sports fitness for women, B.T. Batsford Ltd, London 1986.

Emily R. Foster, karyn Hartiger & Katherine A. Smith, Fitness Fun, Human Kinetics Publishers 2002.

Lawrence, Debbie, Exercise to music. A & C Black Publishers Ltd. 37, Sohe Square, London 1999

Robert Malt. 90 day fitness plan, D.K. Publishing, Inc. 95, Madison Avenue, New York 2001.

Bucher, Charles A. “ Administration of health and physical education Programme”. Delbert, Oberteuffer, et. al. “ The School Health Education.”

Ghosh, B.N. “ treaties of Hygiene and Public Health”.

Hanlon, john J. “ Principles of Public Health Administration “ 2003 turner, C.E. “ The School Health And Health Educations”.

Moss and et. At. " Health Education " ( National education Association of U.T.A. ) Nemir A. " The School Health Education " (Harber and Brothers , New York ). Nutrition Encyclopedia, edited by Delores C.S. James, The gale Group, Inc.

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

Terras S. (1994) Stress, How Your Diet can Help: The principal Guide to positive Health Using Diet , Vitamins, Minerals, herbs and Amino Acids, Thorons.

## **PAPER – II**

### **PHYSIOLOGY OF EXERCISE**

MM 100

Credits 05

UNIT I - Skeletal Muscles and Exercise

Macro & Micro Structure of the Skeletal Muscle, Chemical Composition, Sliding Filament Theory of Muscular Contraction. Types of muscle Fibre. Muscle Tone, Chemistry of muscular Contraction - Heat Production in the Muscle, Effect Of exercises and training on the muscular system.

UNIT II – Cardiovascular System and Exercise

Heart valves and Direction of the Flow – Conduction System of the Heart – Blood Supply to the Heart – Cardiac Cycle – Stroke Volume – Cardiac Output – Heart Rate –Factors Affecting Heart rate – Cardiac Hypertrophy – Effect of exercises and training on the Cardio vascular system.

UNIT III – Respiratory System and Exercise

Mechanics of Breathing – Respiratory Muscles, Minute Ventilation – Ventilation at Rest and during exercise. Diffusion of Gases – Exchange of gases in the Lungs – exchange of Gases in the Tissues – Control of Ventilation – Ventilation and the Anaerobic Threshold. Oxygen Debt – Lung Volumes and Capacities – Effect of Exercises and Training on the respiratory system.

UNIT IV – Metabolism and Energy Transfer

Metabolism – ATP \_ PC or Phosphagen System - Anaerobic Metabolism -Aerobic Metabolism – Aerobic Metabolism \_ Aerobic and Anaerobic Systems during rest Exercise . Short Duration High Intensity Exercises - High Intensity Exercise Lasting Several Minutes \_ Long Duration Exercises.

Note: Laboratory Practical in Physiology be designed and arranged Internally .

#### **REFERENCES:**

Amrit kumar, R, Moses (1995). Itroduction to Exercise Physiology Madras : Poompugar Pathipagam.

Beotra Alka, (2000) Drug Education Handbook on Drug Abuse in PSorts: Sports Authority of India Delhi.

Clarke, D.H. (1975). Exercise Physiology. New Jersey : Prentice Hall Inc., Englewood Cliffs.

David, L Costill. (2004). Physiology of Sports and Exercise . Human Kinetics.

Fox, E.L., and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.

Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co. Richard,

W. Bowers. (1989). Sports Physiology. WMC: Brown Publishers.

Sandhya Tiwarji. (1999). Exercise Physiology. Sports Publishers.

Shaver, L. (1981). Essentials of Exercise Physiology. Sports Publishers.

Vincent, T. Murche. (2007). Elementary Physiology. Hyderabad: Sports Publication. William, D.

Mc Aradle. (1996). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams and Wilkins Company.

### **PAPER – III**

## **RESEARCH METHODOLOGY IN PHYSICAL EDUCATION AND SPORTS SCIENCES**

MM 100

Credits 05

#### UNIT I – Introduction

Meaning and Definition of Research – Need, Nature and scope of research in physical Education. Classification of Research, Location of Research Problem, Criteria for selection of a problem, Qualities of a good researcher.

#### UNIT II – Methods of Research

Descriptive Methods of Research; Survey study, case study, Introduction of historical Research, steps in Historical Research, Sources of Historical Research . Primary data and Secondary Data, historical Criticism and External Criticism.

Experimental Research – Meaning Nature and Importance, Meaning of variable, Type of Variables. Experimental Design – Single Group Design, Reserve Group Design, Repeated Measure Design, Static Group Comparison Design, Equated Group Design, Factorial Design.

#### UNIT III – Sampling

Meaning and Definition of Sample and Population. Types of sampling: Probability Methods; Systematic Sampling, Cluster sampling, Stratified Sampling. Area sampling – Multistage sampling. Non – Probability Methods; Convenience Sampling, Judgment Sampling, Quota Sampling.

#### UNIT IV – Research Proposal and Report

Chapterization of Thesis / Dissertation, Front Materials, Body OF thesis- Back materials. Method of Writing Research proposal, Thesis / Dissertation; Method of writing abstract and full paper for presenting in a conference and to publish in journals, Mechanics of writing Research Report, Footnote and Bibliography writing.

### **REFERENCE**

Best J. w ( 1971) Research in Education, New Jersey; Prentices Hall, Inc

Clarke David. H & Clarke H, Harrison (1984) Research processes in physical Education, New Jersey; Prentice Hall Inc.

Craig Williams and Chris Wragg (2006) Data Analysis and research for sport and Exercise Science, London Routledge Press

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

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

Moses, A.K. (1995) Thesis Writing Format, Chennai; Poompugar Pathippagam

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

Subramanian, R, Thirumalai Kumar S & Arumugam C (2010) Research Methods in Health, Physical Education and Sports New Delhi; Friends Publication

Moorthy A.M. Research Processes in physical education (2010); Friend Publication, New Delhi.

## PAPER – IV

### TEST, MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION

MM 100

Credits 05

#### UNIT I - Introduction

Meaning and Definition of Test, Measurement and Evaluation. Need and importance of Measurement and Evaluation. Criteria for test selection – Scientific Authenticity. Meaning, definition and Establishing – Validity, Reliability, Objective . Norms – Administrative Considerations.

#### UNIT II – Physical Fitness and Motor Fitness Tests

Physical Fitness Test: AAHPERD Health related fitness battery ( revised in 1984) , ACSM Health Related Physical Fitness test, Roger’s Physical Fitness Index Cardio Vascular test; Harvard step test, 12 minutes run work / walk test , Multi- stage fitness test ( Beep test)

Meaning and definition of motors fitness test for motor fitness; Indiana Motor Fitness Test (for elementary and high school boys, Girls and college Men) Oregon Motor Fitness Test ( separately for boys and girls) – JCR test. Motor Ability ; Barrow Motor Ability Test – Newton Motor Ability Test – Muscular Fitness – Kraus Weber Minimum muscular Fitness Test.

#### UNIT III – Anthropometric and Aerobic – Anaerobic Tests

Physiological testing: Aerobic Capacity: The Bruce treadmill Test Protocol, 1.5 Mile Run Test For College age males and females. Anaerobic Capacity: Margaria-Kalamen Test, Wingate anaerobic Test, Anthropometric Measurements : Method of Measuring Height: Standing Height, Sitting Height, Method of measuring Circumference: Arm, Waist, Hip, Thigh. Method of Measuring skin folds: Triceps, Sub scapular, Suprailiac.

#### UNIT IV – Skills Tests

Specific sports skill test: Badminton: Miller Wall Volley Test. Basketball: Johnson Basketball test, Harrison Basketball Ability test. Cricket: Sutcliff Cricket Test. Hockey: Friendel Field Hockey test, Harban’s Hockey test, Volleyball, Russel Lange Volleyball Test, Brady volleyball test. Football: Mor-Christism General Soccer Ability Skill Test Battery, Johnson Soccer Test, Mc- Donald Volley Soccer Test. Tennis: Dyer tennis Test.

Note: Practical of Indoors and out-door tests be designed arranged internally.

#### REFERENCES

- Authors Guide (2013) ACSM’s Health related physical fitness assessment Manual, USA: ACSM publication.
- Collins, R.D., & Hodges P.B. (2001) A Comprehensive guide to Sports Skills Tests and Measurement (2<sup>nd</sup> edition) Lanham: Scarecrow Press
- Cureton T.K. (1947) Physical Fitness Appraisal And Guidance, St. Louis: The C. Mosby Company
- Getchell B (1979) Physical Fitness A way of life, 2<sup>nd</sup> Edition New York, John Wiley And Sons, Inc
- Jenson, Clayane R and Cunt ha, C. Hirst (1980) Measurement in Physical Education and Athletics, new York, Macmillan Publishing Co. Inc
- Kensal D.K. (1996), “Test And Measurement in Sports and physical education , New Delhi: DVS Publications
- Krishnamurthy (2007) Evolution in Physical Education and sports, New Delhi; Ajay Verma Publications
- Vivian H. Heyward (2005) Advance Fitness Assessment and exercise :3<sup>rd</sup> Edition. Champaign IL: human Kinetics
- Yobu, A (2010) Test Measurement And Evaluation In Physical Education And Sports. New Delhi; Friends Publications

**PAPER – V**  
**SPORTS SOCIOLOGY**

MM 100

Credits 05

**UNIT-I:**

**INTRODUCTION:**

- (i) Nature, Scope and method of Sports Sociology.
- (ii) Sports as a special phenomenon.
- (iii) Sociological Analysis of Sports and Sports and Sports Sociology as an academic discipline.
- (iv) Social Factor (appearance, sociality, aspiration level and audience) inference on participation and performance in sports.

**UNIT-II:**

**SPORTS AND MICRO SOCIAL SYSTEMS:**

- (i) Study of sport groups.
- (ii) Group interaction, competition and cooperation.
- (iii) Behavior characteristics,
- (iv) Sports and Cultures.

**UNIT-III:**

**SPORTS AND MACRO SOCIAL SYSTEMS:**

- (i) Relationship between sport and socializing institutions (family, school and educational systems).
- (ii) Inter-relationship between and regulating institutions (Politics and economy).
- (iii) Sport and Cultural institutions (religion and art).
- (iv) Socialization via games and sports.

**UNIT-IV**

**SPPORTS AND CULTURE:**

- (i) Sports as a Social institution.
- (ii) Sports an element of culture and a cultural product.
- (iii) Manipulative socialization an concerned conformity.
- (iv) Relationship between sports and culture.

**UNIT-V**

**SOCIAL GAMES CONCERNING SPORT IN SOCIETY:**

- (i) Social stratification in sports, as a stratificational system.
- (ii) Discrimination and democratisation in sport with special reference to socio-economic classes and women.
- (iii) Sports and aggression, violence in sport.
- (iv) Problem regarding professionalization and children in sport.

**REFERENCE:**

1. Loy, John W., Kenyon, gerald S. & McPherson, Barry D. Sports Culture and Society (Philadelphia: Lea & Febiger, 1981).

2. Ball, Donald W. and Loy John W. Sport and social Order; Contribution to the sociology of sport, (London: Addison Wesley Publishing Co., Inc., 1975).
3. Loy John. W. McPherson, Barry D., and Kenyon Gerald, sport and Social System (London: Addison Wesley Publishing Company Inc., 1978).
4. Edward Larry. Sociology of sport (Illinois: The Dorsey Press, 1973).
5. Crary, Bryant J. Social Dimensions of Physical Activity New Jersey: Englewood Cliffs, Prentice Hall Inc., 1967.

## **PAPER – VI**

### **TRACK AND FIELD I RUNNING EVENTS / GYMNASTIC/SWIMMING (Any One)**

MM 100

Credits 04

#### **UNIT – 1: Introduction**

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

#### **UNIT – II: Techniques/Skills development**

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

#### **UNIT –III: Officiating:**

- Mechanics of officiating.
- Qualities of good official.
- Duties of official (pre, during and post game)
- Rules & their interpretations.

#### **UNIT – IV: Training (Means & Method)**

- Training methods and means for the development of motor abilities (Strength, Speed, Endurance and Flexibility)
- Basic Concept of preparation of training schedules.
- Tactical training in game/sport.
- Psychological preparation required during competition in game/sport.
- Preparation of short term and long term training plans in game/sport.
- Periodization in training of players in game/sport.
- General/specific fitness tests and performance/skill test in game/sport.

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

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

**ASSESSMENT RUBRIC:** Classroom Test, Performance Test, Project Work, Assignments, Presentations, Practical Work

#### **SUGGESTED READINGS**

Latest Official Rule Books of International Federations of particular game/sport and Coaching manuals will be utilized.



## PAPER – VII

### COMBATIVE SPORT: BOXING/ KARATE / TAEKWONDO /JUDO / WRESTLING/FENCING /LATHI

MM 100

Credits 04

#### UNIT – 1: Introduction

- Historical development of the game/sport at national and international levels.
- National Bodies controlling game/sport and their affiliated units.
- International Bodies controlling game/sport and their affiliated units.
- Major National and International competitions in Game/Sport.
- Layout and marking of play filed/ground/courts and measurement of equipments used in Game/Sport.

#### UNIT – II: Techniques/Skills development

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

#### UNIT –III: Officiating:

- Mechanics of officiating.
- Qualities of good official.
- Duties of official (pre, during and post game)
- Rules & their interpretations.

#### UNIT – IV: Training (Means & Method)

- Training methods and means for the development of motor abilities (Strength, Speed, Endurance and Flexibility)
- Basic Concept of preparation of training schedules.
- Tactical training in game/sport.
- Psychological preparation required during competition in game/sport.
- Preparation of short term and long term training plans in game/sport.
- Periodization in training of players in game/sport.
- General/specific fitness tests and performance/skill test in game/sport.

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

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

**ASSESSMENT RUBRIC:** Classroom Test, Performance Test, Project Work, Assignments, Presentations, Practical Work

#### SUGGESTED READINGS

Latest Official Rule Books of International Federations of particular game/sport and Coaching manuals will be utilized.

**SEMESTER – II**  
**PAPER – VIII**  
**APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS**

MM 100

Credits 05

UNIT I – Introduction

Meaning and definition of statistics function, Need and importance of statistics. Types of Statistics. Meaning of the terms, Population, Sample, Data, Types of data Variable; Discrete, Continuous. Parametric and Non – Parametric Statistics.

UNIT II – Data Classification, Tabulation and Measure of Central Tendency

Meaning, Uses and Construction OF frequency table. Meaning, Purpose, Calculation and advantages of measure of central tendency -Mean Median and Mode.

Meaning, Purpose, Calculation and Advances of range, Quartile, Deviation, Mean Deviation, Standard Deviation, Probable Error. Meaning, Purpose, Calculation and advantages of scoring scales; Sigma scale, Z scale, hull Scale.

UNIT III – Probability Distributions and Graphs

Normal Curve. Meaning of Probability – Principals of Normal curve – Properties of normal Curve. Divergence from normality – Skewness and kurtosis. Graphical Representation in Statistics; Line Diagram, Bar Diagram, Histogram, Frequency Polygon, Ogive Curve.

UNIT IV – Inferential and Comparative Statistics

Tests of significance; Independent “t” test, Dependent “t” test , Chi – square level of confidence and interpretation of data. Meaning of Correlation- Co - efficient of correlation- calculation of co – efficient of correlation by the product moment method and rank difference method. Concept of ANOVA and ANCOVA.

Note : It is recommended that the theory topics be accompanied with practical, based on computer software statistics.

REFERENCES

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

Calrk D.H. (1999) Research Problem in Physical Education 2<sup>nd</sup> edition, Eaglewood Cliffs, Prentice hall, Inc

Jerry R thomas & Jack K Nelson (2000) Research Methods in physical Activities; Illonosis; Human Kinetics;

Kamlesh, M.L. (1999) Research Methodology in physical education and sports < New Delhi Rothstein A (1985) Research Design and Statistics for Physical Education Englewood Cliffs: Prentice Hall, Inc

Sivaramakrishnan. S (2006) Statistics for physical Education, Delhi; Friends Publication Thirumalaisamy (1998), Statistics for physical Education , Delhi; Friends Publication Senthilkumar Publications.

**PAPER – IX**  
**SPORTS BIOMECHANICS AND KINESIOLOGY**

MM 100

Credits 05

**UNIT I – INTRODUCTION**

Meaning, nature, role and scope of Applied Kinesiology and Sports Biomechanics. Meaning of axis and Planes, Dynamics, Kinematics, Kinetics, statics Energy, Centre of gravity – Line of Gravity, Planes of the Body and Axis of motion, Vectors and Scalars.

**UNIT II – Muscle Action**

Origin, Insertion and action of muscles: Pectoralis major and minor, Deltoid, Biceps, Triceps (Anterior and Posterior), Trapezius, Serratus, Sartorius, Rectus, femoris, Abdominis, Quadriceps, Hamstring, Gastrocnemius.

**UNIT III- MOTION AND FORCE**

Meaning and definition of Motion. Types of Motion: Linear Motion, Angular motion, Circular motion, Uniform Motion. Principles related to the Law of Inertia, Law of acceleration and law of counter forces. Meaning and definition of force- sources of force- force compounds. Force applied at an Angle, Pressure, Friction, Buoyancy, Spin, Centripetal Force and Centrifugal force.

Freely falling bodies- Projectiles- Equation of projectiles stability, Factors influencing equilibrium- Guiding principles for stability- Static and dynamic stability. Meaning of Work, Power, and Energy, Kinetic Energy and Potential energy. Leverage –Classes of lever – Practical application. Water resistance – Air resistance – Aerodynamics.

**UNIT IV- MOVEMENT ANALYSIS**

Analysis of Movement: Types of analysis: Kinesiological, Biomechanical.

Cinematographic. Methods of analysis- Qualitative, Quantitative, Predictive.

Note: Laboratory Practicals should be designed and arranged for students internally.

**REFERENCES**

Despande S.H.(2002). Manav Kriya Vigyan – Kinesiology (Hindi Edition) Amravati: Hanuman Vyayam Prasarak Mandal.

Hoffmen S.J. Introduction to Kinesiology (Human Kinesiology publication in 2005).Steven

Roy & Richard Irvin (1983). Sports Medicine. New Jersey: Prentice hall Thomas. (2001). Manual of structural Kinesiology, New York: me Graw Hill.

Uppal A.K. (2004), Kinesiology in Physical Education and Exercise Science, Delhi friends Publications.

Williams M (1982) Biomechanics of Human Motion, Philadelphia; Saunders Co. Shukla D. and Patchuri P.K.: Sports Bio- Mechanic.

Mishra R.B.& Atwal H.S. Sports Bio- Mechanic.

## PAPER – X

### SPORTS MEDICINE, NUTRITION, ATHLETIC CARE & REHABILITATION

MM 100

Credits 05

#### UNIT I - INTRODUCTION

Meaning, Definition and Importance of sports medicine, Definition and Principles of Therapeutic exercises. Coordination exercise, Balance Training exercise, Strengthening exercise, Mobilization exercise, Gait training, Gym ball exercise, Injuries: Acute, sub-acute, Chronic. Advantages and Disadvantages of Price, Prince Therapy, Aquatic therapy.

#### UNIT II – Nutrition and Weight Management

Meaning and Definition of sports Nutrition, Role of Nutrition in sports, basic Nutrition Guidelines, Nutrients: Ingestion to energy metabolism (Carbohydrate, Protein and fat), Role of carbohydrates, Fat and protein during exercise.

Concept of BMI (Body Mass Index), Obesity and its hazard, Dieting versus Exercise for weight control, Maintaining a healthy Lifestyle, Weight management programme for sporty child, Role of diet and exercise in weight management, Design diet plan and exercise schedule for weight gain and loss.

#### UNIT III – Common Sports Injuries, Care and Rehabilitation

Sprain, Strain Dislocation, and fracture at different joints and muscles. Basic Rehabilitation: Strapping/Tapping: Definition, Principles of Precautions, Contraindications. Proprioceptive neuromuscular facilitation: Definition of – Hold, Relax, Repeated Contractions. Show reversal technique. Exercises: Isotonic, Isokinetic, Isometric. Stretching – Definition, Types of Stretching, Advantages, Dangers of stretching, Manual of muscle grading.

Breathing exercises, relaxation techniques, free hand exercise, Stretching and Strengthening exercises, for shoulder, Elbow, Wrist and Hand. Supporting and Aiding techniques and equipment for upper limb and thorax Injuries. Passive, Active, Assisted, Resisted exercise for Rehabilitation, stretching, PNF techniques and Principles.

#### UNIT IV – Massage

Brief history of Massage – Massage as an aid for relaxation – Points under consideration in giving massage – Physiological, Chemical, Psychological. Effects of massage –Indication/Contraindication of massage- Classification of the manipulation used massage and their specific uses in the human body – stroking Manipulation: Effluence – Pressure manipulation: Petrissage, kneading (Finger, Kneading, Circular) Ironing Skin rolling – Percussion manipulation: Tapotement, Hacking, Clapping, Beating, Pounding, Slapping, Cupping, Poking, Shaking manipulation, Deep Massage.

#### REFERENCES

Christopher M. Norris (1993). Sports Injuries Diagnosis and Management for Physiotherapists. East Kilbride: Thomson Litho Ltd.

James, A. Gould & George J. Davies. (1985). Physical Therapy. Toronto: C.V. Mosby company.

Christopher M. Norris. (1993). Sports Injuries Diagnosis and Management for Physiotherapists. East Kilbride: Thomson Litho Ltd.

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Tittel Blackwell Scientific publications.

Doherty. J. Meno, Wetb, Moder D (2000) Track & Field, Englewood Cliffs, Prentice Hal Inc. Lace, M. V. (1951) Massage and Medical Gymnastics, London: J & A Churchill Ltd.

Me Ooyand Young (1954) Tests and Measurement, New York: Appleton Century. Naro, C. L.. (1967) Manual of Massage and, Movement. London: Febra and Fehra Lid. Rathbome, J.1.

## **Paper XI**

### **SPORTS MANAGEMENT**

MM 100

Credits 05

#### **Unit I: Introduction**

Management: Concept and Principles of Management. Sports Management: Definition, Importance. Basic Principles and Procedures of Sports Management. Functions of Sports Management. Personal Management. Objectives of Personal Management, Personal Policies. Role of Personal Manager in an organization, Personal Recruitment and selection

#### **Unit II: Program Management**

Management of infrastructure, equipment, finance and personnel. Programme Management. Factors influencing programme development. Importance of programme development and Role of management. Organisation and Functions of Spots bodies. Competitive Sports Programmes, Benefits. Management Guidelines for School, College Sports Programmes. Management Problems in instruction programme. Community Based Physical Education and Sports programme.

#### **Unit III: Equipments and Public Relation**

Purchase and Care of Supplies of Equipment. Guidelines for selection of equipment and Supplies. Purchase of equipment and supplies. Equipment Room, Equipment and supply Manager. Guidelines for checking, storing, issuing, care and maintenance of supplies and equipment. Public Relations in Sports. Planning the Public Relation Programme. Principles of Public Relation - Public Relations in School and Communities. Public Relation and the Media. Professional Ethics.

#### **Unit – IV: Financial Management**

Define Administration, Supervision and Organization. Budget and financial management- Criteria of Good budget, steps of budget making. Accounting Cost Accounting, Control, Audit, Revolving Funds

#### **REFERENCES:**

Chakraborty&Samiran. (1998). Sports Management. New Delhi: Sports Publication.

Charles, A, Bucher & March, L, Krotee. (1993). Management of Physical Education and Sports. St. Louis: Mosby Publishing Company.

Chelladurai, P. (1999). Human Resources Management in Sports and Recreation. Human Kinetics.

John, E, Nixon & Ann, E, Jewett. (1964). Physical Education Curriculum, New York: The Ronald Press Company.

Williams, J.F. (2003). Principles of Physical Education. Meerut: College Book House.

Yadvnider Singh. Sports Management, New Delhi: Lakshay Publication

Bill, K. (2009). Sport management. Exeter [England]: Learning Matters. ISBN-13: 978- 1844452637. ISBN-10: 1844452638

Smith, A., & Stewart, B. (1999). Sports management. St Leonards, N.S.W.: Allen & Unwin. ISBN-13: 978-1864487510. ISBN-10: 1864487518

Hoye, R. (2012). Sport management. Milton Park, Abingdon, Oxon: Routledge. ISBN-13: 9781856178198, ISBN-10: 1856178196

Bowers, M. (2015). Sport management. Champaign: Sagamore Publishing. ISBN-10: 1571677267. ISBN-13: 978-1571677266

Krotee, M., & Bucher, C. (2007). Management of physical education and sport. Boston: McGraw-Hill. ISBN-10: 0072972920. ISBN-13: 978-0072972924

## **Paper XII** **Yogic Sciences**

**MM 100**

**Credits 05**

Unit I – Introduction

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

Unit II – Aasanas and Pranayam

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

Unit III – Kriyas and Mudras

Shat Kriyas- Meaning, Techniques and Benefits of Neti – Dhauti – Kapalapathi- Trataka – Nauli – Basti, Bandhas: Meaning, Techniques and Benefits of Jalendhar Bandha, Jihva Bandha, Uddiyana Bandha, Mula Bandha.

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

**Unit IV – Yoga and Sports,**

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

**REFERENCE:**

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

Gore, (1990), Anatomy and Physiology of Yogic Practices. Lonavata: Kanchan Prkashan.

Iyengar, B.K.S. (2000), Light on Yoga. New Delhi: Harper Collins Publishers.

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

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

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

Moorthy A.M. & Alagesan. S. (2004) Yoga Therapy. Coimbatore: Teachers Publication House. Swami Kuvalayanda, (1998), Asanas. Lonavala: Kaivalyadhama.

Swami Satyananada Sarasvati. (1989), Asana Pranayama Mudra Bandha. Munger: Bihar School of Yoga.

Swami Satyananda Sarasvathi. (1984), Kundalini and Tantra, Bihar: Yoga Publications Trust.

Swami Sivananda, (1971), The Science of Pranayama. Chennai: A Divine Life Society Publication. Thirumalai Kumar. S and Indira. S (2011) Yoga in Your Life, Chennai: The Parkar Publication. Tiwari O.P. (1998), Asanas-Why and How. Lonavala: Kaivalyadham. Ronghe Prafulla N., Physiology of Yoga

### **PAPER – XIII**

#### **TRACK AND FIELD II JUMPING EVENTS / GYMNASTIC/SWIMMING (Any One)**

MM 100

Credits 04

##### **UNIT – 1: Introduction**

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

##### **UNIT – II: Techniques/Skills development**

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

##### **UNIT –III: Officiating:**

- Mechanics of officiating.
- Qualities of good official.
- Duties of official (pre, during and post game)
- Rules & their interpretations.

##### **UNIT – IV: Training (Means & Method)**

- Training methods and means for the development of motor abilities (Strength, Speed, Endurance and Flexibility)
- Basic Concept of preparation of training schedules.
- Tactical training in game/sport.
- Psychological preparation required during competition in game/sport.
- Preparation of short term and long term training plans in game/sport.
- Periodization in training of players in game/sport.
- General/specific fitness tests and performance/skill test in game/sport.

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

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

**ASSESSMENT RUBRIC:** Classroom Test, Performance Test, Project Work, Assignments, Presentations, Practical Work

##### **SUGGESTED READINGS**

Latest Official Rule Books of International Federations of particular game/sport and Coaching manuals will be utilized.

### **PAPER – XIV**

#### **Internship (Teaching & Coaching) During Sem. Break**

MM 100

Credits 04

**Semester III**  
**Paper XV**  
**SCIENTIFIC PRINCIPLES OF SPORTS TRAINING**

MM 100

Credits 05

UNIT 1-Introduction

Sports Training: Definition, Aim, Characteristics, Principles of Sports Training Over Load: Definition Causes of Over Load, Symptoms of Overload, Remedial Measures - Super Compensation Altitude Training Cross Training.

UNIT II-Components of Physical Fitness

Strength Methods to Improve Strength- Weight Training, Isometric, Isotonic, Circuit Training, Speed: Methods to Develop Speed - Repetition Method, Downhill Run, Parachute Running. Wind Sprints. Endurance: Methods to Improve Endurance Continuous Method, Interval Method, Repetition Method, Cross Country, Fartlek Training. Flexibility: Methods to Improve the Flexibility Stretch and Hold Method, Ballistic Method Special Type Training Plyometric Training. Training for Coordinative abilities: Methods to improve Coordinative abilities: Sensory Method, Variation in Movement Execution, Variation in External Condition Method, Combination of Movement Method. Types of Stretching Exercises.

UNIT III - Training Plan

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

UNIT IV-Doping

Definition of Doping - Side effects of drugs - Dietary supplements - IOC list of doping substances and methods. Blood Doping - The use of erythropoietin in blood boosting - Blood doping control

-The testing programmes - Problems in drug detection - Blood testing in doping control - Problems with the supply of medicines Subject to IOC regulations: Over-the-counter drugs (OTC) - prescription only medicines (POMs) - Controlled drugs (CDs). Reporting test results - Education

REFERENCES

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

Bunn, J.N. (1998) Scientific Principles of Coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.

Cart, E. Klafs & Daniel, D. Arnheim (1999) Modern Principles of Athletic Training St. Louis C. V. Mosphy Company

Daniel, D. Arnheim (1991) Principles of Athletic Training, St. Luis, Mosby Year Book

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

Gary, T. Moran (1997) - Cross Training for Sports, Canada: Human Kinetics

Hardayal Singh (1991) Science of Sports Training, New Delhi, DVS Publications

Jensen, C.R. & Fisher A.G. (2000) Scientific Basic of Athletic Conditioning, Philadelphia Ronald, P. Pfeiffer (1998) Concepts of Athletics Training 2 Edition, London: Jones and Bartlett Publications.

Yograj Thani (2003), Sports Training, Delhi: Sports Publications



**PAPER-XVI**  
**SPORTS JOURNALISM AND MASS MEDIA**

MM 100

Credits 05

UNIT I - Introduction

Meaning and Definition of Journalism, Ethics of Journalism - Canons of journalism-Sports Ethics and Sportsmanship Reporting Sports Events. National and International Sports News Agencies.

UNIT II- Sports Bulletin

Concept of Sports Bulletin: Journalism and sports Education - Structure of sports bulletin - Compiling a bulletin - Types of bulletin - Role of Journalism in the Field of Physical Education: Sports as an integral part of Physical Education - Sports organization and sports journalism-General news reporting and sports reporting.

UNIT III-Mass Media

Mass Media in Journalism: Radio and T.V. Commentary - Running commentary on the radio - Sports experts' comments. Role of Advertisement in Journalism. Sports Photography: Equipment- Editing-Publishing

Brief review of Olympic Games, Asian Games, Common Wealth Games World Cup, National Games and Indian Traditional Games. Preparing report of an Annual Sports Meet for Publication in Newspaper. Organization of Press Meet.

UNIT-IV Journalism

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

REFERENCES

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

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

Bhatt S.C. (1993) Broadcast Journalism Basic Principles. New Delhi. Haranand Publication Dhananjay Joshi (2010) Value Education in Global Perspective. New Delhi: Lotus Press.

Kannan K (2009) Soft Skills, Madurai: Madurai: Yadava College Publication

Mohit, Chakrabarti (2008): Value Education: Changing Perspective, New Delhi: Kanishka Publication,

Padmanabhan. A & Perumal, A (2009), Science and Art of Living, Madurai: Pakavathi Publication

Khera Shiv (2002), You Can Win, New Delhi: Macmillan India Limited.

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

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

**PAPER-XVII**  
**SPORTS ENGINEERING AND TECHNOLOGY**

MM 100

Credits 05

UNIT I-Introduction

Meaning of Sports Engineering, Human motion detection and recording, Human performance assessment, equipment and facility designing and sports related instrumentation and measurement.

UNIT II - Mechanics of Engineering Materials

Concept of internal force, axial force, shear force, bending moment, torsion, energy expenditure method to find displacement of structure, strain energy. Biomechanics of daily and common activities -Gait, Posture, Body levers, ergonomics. Mechanical principles in movements such as Lifting, Walking, Running, Throwing, Jumping, Pulling, Pushing etc.

Introduction to Dynamics, Kinematics of particles - rectilinear plane and Curvilinear motion Coordinate system. Kinetics of particles - Newton's laws of Motion. Work, Energy, Impulse and momentum.

UNIT III-Infrastructural Development:

Sports Infrastructure-Gymnasium, Pavilion, Swimming Pool, Indoor Stadium, Out-door Stadium, Play Park, Academic Block, Administrative Block, Research Block, Library, Sports Hostel, etc.

Requirements: Air ventilation, Day light, Lighting arrangement, Galleries, Store rooms, Office, Toilet Blocks (M/F), Drinking Water, Sewage and Waste Water disposal system, Changing Rooms (M/F), Sound System (echo-free), Internal arrangement according to need and nature of performed activity, Corridors and Gates for free movement of people, Emergency provisions of lighting, fire and exits, Eco-friendly outer surrounding. Maintenance staff, financial consideration.

UNIT IV-Maintenance:

Building process:- design phase (including brief documentation), construction phase functional (occupational) life, Re-evaluation, refurbish, demolish.

Maintenance policy, preventive maintenance, corrective maintenance, record and register for maintenance.

REFERENCES

Franz K. F. et. al., Editor, Routledge Handbook of Sports Technology and Engineering (Routledge,2013)

Steve Hake, Editor, The Engineering of Sport (CRC Press, 1996)

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

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

Youlin Hong, Editor Routledge Handbook of Ergonomics in Sport and Exercise(Routledge, 2013) Jenkins M., Editor Materials in Sports Equipment, Volume I Elsevier, 2003) Colin White,

Projectile Dynamics in Sport: Principles and Applications Eric C. et al., Editor Sports Facility Operations Management (Routledge, 2010)

**PAPER-XVIII**  
**PLANING AND EVALUATION OF SPORTS TRAINING**

MM 100

Credits 05

**UNIT-I**

**(a) TECHNIQUE:**

1. Definition of skill, Technique and Technical training.
2. Characteristics of Technique.
3. Phases of skill acquisition.
4. Methods of Technique Training.
5. Causes and correction of faults.

**(b) TACTICS:**

1. Definition of tactics and strategy.
2. Basic Tactical concepts-Offensive, Defensive and high Performance.
3. Methods of Tactical Training.
4. Control of Tactical knowledge.

**UNIT-II**

**(a) PLANNING AND ORGANISATION OF TRAINING:**

2. Important of Planning.
3. Principles of Planning.
4. Systems of Planning.
5. Periodisation and its types.
6. Contents for various periods of training.

**(b) COMPETITION PLANNING AND PREPARATION:**

1. Importance of Competitions.
2. Competition Frequency.
3. Main and build-up Competitions.
4. Direct preparation for an important competition.

**UNIT-III**

**EVALUATION OF TRAINING:**

1. Items to be included in evaluation programme.
2. Uses of Graphs and principles of graphical representation.
3. Forms of diagrams used for evaluation checking progress.

**REFERENCE:**

1. Harre, Dietrich, Principles of Sports Training (Berlin: Sporulated, 1982).
2. Dick W. Frank. sports Training Principles (London: Lepus Books, 1980).
3. Jensen, R. Clayne, and Fisher A.G. Scientific Basis of Athletic conditioning (Philadelphia: Lea and Fibiger 1979), 2<sup>nd</sup> Edn.
4. Matvyew, L.P. Fundamental of sports Training (Moscow: Progress Publishers, 1981).
5. Cratty, J. Brayant Perceptual and Motor Development in Infants and Children (N.J.: Englewood Cliffs, Prentice Hall, Inc. 1979).
6. singh, H. Sports Training, General Theory and methods (Patials: NSNIS, 1984).

## PAPER-XIX

### EVALUATION TECHNIQUES IN PHYSICAL EDUCATION

MM 100

Credits 05

#### UNIT-I MEASUREMENT OF STRENGTH AND SKILL:

Kraus-Weber test and muscular fitness. Instrument for measuring strength. Roger's physical Fitness index and suggested changes in the PFI Test. Volleyball-Brady Volleyball, Russel and Lange test. Basketball-Johnson test, Knox test Soccer – McDonald test and Johnson Test. Badminton – Miller Volley test, Lockhart McPherson test Field Hockey Dribbling and Goal Shooting Test, Mehrotra test battery in Hockey.

#### UNIT-II MEASURES OF POSTURE AND ANTHROPOMETRY

Measure of Posture- IOWA Posture Test (Curelon's) Anthropometrics Measurements – Girth Measurements -upper arm, fore arm, calf, chest. Width Measurements-Biacromial Chest, Illiocrystal, Bipicondylar (Femur and Humerus). Height Measurement-Stature and sitting height. Somatotype-Scheldon's Technique an Introduction.

#### UNIT-III MEASUREMENT OF SOCIAL EFFICIENCY AND PSYCHOLOGICAL FACTORS

Social Efficiency and Attitude Scales: Cook socio-metric status Index. Edgerton Attitude Scale for high school Freshman Boys. Adams Physical Education Attitude Scale. McMohan Sportsmanship Questionnaire.

Psychological Factors: Anxiety Scale-SCAI (Martens and Others). Cattell's 16-PF Personality Questionnaire and Sybil B.G., Self Motivation Inventory (SMF).

#### UNIT-IV MEDICAL EXAMINATION

Testing Personnel, Time and testing, Economy of testing, test records.Preparation of report. Construction of table groups. Purpose of reporting Justification & Particular phases of the Programme, worth of a change Methodology.

#### REFERENCE:

1. Barrow M. Harold and McGhee, Rosemary. A Practical approach to Measurement in Physical Education.(Philadelphia: Lea and Febiger, 1979).Edn. 3<sup>rd</sup> .
2. Bosco S. James and Gustafson F. William, Measurement and Evaluation in Physical Fitness and Sports.(New Jersey: Englewood Cliffs, Prentice hall, 1983).
3. Clarks, H. David and Clarke Hanison. H. *Application of Measurement to Physical Education* (Englewood Cliffs. Prentice Hall, Inc., 1987) Edn. 6.
4. Hubbard W. Alfred (Ed.) *Research Method in health Physical Education and Recreation* 3<sup>rd</sup> revised Edn. (Washington: D.C. American Association of health, physical Education and Recreation.
5. Johnson L. Barry and Nelson K. Jack, Practical measurement for Evaluation in physical Education, 1<sup>st</sup> Indian Reprint, (Delhi: Surjeet Publication, 1982) Edn. 3<sup>rd</sup> .
6. Larson, L.A. and Yawn, R.C. *Measurement and Evaluation in Physical Health and Recreation Education* (St. Louis L.C.V. Mosby Com., 1957).
7. Larson, L.A. *Encyclopedia of Sports sciences and medicine Education and Recreation* 3<sup>rd</sup> Revised Edn. (Washington: D.C. American Association of Health, Physical education and Recreation. 1973).
8. Mathews, Donald K. *Measurement in Physical Education* (London: W.B. Saunders Co., 1973)Edm. 5.
9. Philips D. Allen and Honark E. James. *Measurement and Evaluation in Physical Education*, New work: Willey and sons, 1973.

## PAPER – XX

### TRACK AND FIELD:III THROWING EVENTS & HEPTATHLON / GYMNASTIC/SWIMMING (Any One)

MM 100

Credits 04

#### **UNIT – 1: Introduction**

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

#### **UNIT – II: Techniques/Skills development**

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

#### **UNIT –III: Officiating:**

- Mechanics of officiating.
- Qualities of good official.
- Duties of official (pre, during and post game)
- Rules & their interpretations.

#### **UNIT – IV: Training (Means & Method)**

- Training methods and means for the development of motor abilities (Strength, Speed, Endurance and Flexibility)
- Basic Concept of preparation of training schedules.
- Tactical training in game/sport.
- Psychological preparation required during competition in game/sport.
- Preparation of short term and long term training plans in game/sport.
- Periodization in training of players in game/sport.
- General/specific fitness tests and performance/skill test in game/sport.

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

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

**ASSESSMENT RUBRIC:** Classroom Test, Performance Test, Project Work, Assignments, Presentations, Practical Work

#### **SUGGESTED READINGS**

Latest Official Rule Books of International Federations of particular game/sport and Coaching manuals will be utilized.

## PAPER – XXI

### GAME SPECIALIZATION

MM 100

Credits 04

#### **UNIT – 1: Introduction**

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

#### **UNIT – II: Techniques/Skills development**

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

#### **UNIT –III: Officiating:**

- Mechanics of officiating.
- Qualities of good official.
- Duties of official (pre, during and post game)
- Rules & their interpretations.

#### **UNIT – IV: Training (Means & Method)**

- Training methods and means for the development of motor abilities (Strength, Speed, Endurance and Flexibility)
- Basic Concept of preparation of training schedules.
- Tactical training in game/sport.
- Psychological preparation required during competition in game/sport.
- Preparation of short term and long term training plans in game/sport.
- Periodization in training of players in game/sport.
- General/specific fitness tests and performance/skill test in game/sport.

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

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

**ASSESSMENT RUBRIC:** Classroom Test, Performance Test, Project Work, Assignments, Presentations, Practical Work

#### **SUGGESTED READINGS**

Latest Official Rule Books of International Federations of particular game/sport and Coaching manuals will be utilized.

**SEMESTER IV**  
**Paper XXII**  
**ICT IN PHYSICAL EDUCATION AND SPORTS**

MM 100

Credits 05

UNIT I-Communication & Classroom Interaction

Concept, Elements, Process & Types of Communication, Communication Barriers & Facilitators of Communication.

Communicative Skills in English - Listening, Speaking, Reading & Writing Concept & Importance of ICT, Need of ICT in Education

Scope of ICT: Teaching Learning Process, Publication Evaluation, Research and Administration Challenges in Integrating ICT in Physical Education

UNIT II- Fundamentals of Computers

Characteristics, Types & Applications of Computers Hardware of Computer: Input, Output & Storage Devices Software of Computer: Concept & Types.

Computer Memory: Concept & Types Viruses & its Management.

Concept, Types & Functions of Computer Networks. Internet and its applications, Web Browsers & Search Engines. Legal & Ethical Issues

Unit III-MS Office Applications

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

UNIT IV - ICT Integration in Teaching Learning Process, E-Learning & Web Based Learning

Approaches to Integrating ICT in Teaching Learning Process, Project Based Learning (PBL), Co-Operative Learning, Collaborative Learning, ICT and Constructivism: A Pedagogical Dimension, E-Learning, Web Based Learning, Visual Classroom

REFERENCES

B. Ram, New Age International Publication, Computer Fundamental, Third Edition-2006 Brain under IDG Book. India (p) Ltd Teach Yourself Office 2000, Fourth Edition 2001 Douglas E. Comer, The Internet Book, Purdue University, West Lafayette in 2005.

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

Pradeep K. Sinha & Priti. Sinha. Foundations computing BPB Publications -2006. Rebecca Bridges Altman Peach pit Press, Power point for window, 1999 Sanjay Saxena, Vikas Publication House, Pvt. Ltd. Microsoft Office for ever one, Second Edition 2006

**PAPER-XXIII**  
**SPORTS PSYCHOLOGY**

MM 100

Credits 05

UNIT 1-Introduction

Meaning, Definition, History, Need and Importance of Sports Psychology. Present Status of Sports Psychology in India. Motor Learning: Basic Considerations in Motor Learning Motor Perception

-Factors Affecting Perception - Perceptual Mechanism. Personality: Meaning, Definition, Structure - Measuring Personality Traits. Effects of Personality on Sports Performance.

UNIT II-Motivation

Meaning, Definition and Types of Motivation: Intrinsic, Extrinsic. Achievement Motivation: Meaning, Measuring of Achievement Motivation. Anxiety: Meaning and Definition, Nature, Causes, Method of Measuring Anxiety. Competitive Anxiety and Sports Performance. Stress: Meaning and Definition, Causes. Stress and Sports Performance. Aggression: Meaning and Definition, Method of Measurement. Aggression and Sports Performance. Self-Concept: Meaning and Definition, Method of Measurement.

UNIT III - Goal Setting and Personality

Meaning and Definition, Process of Goal Setting in Physical Education and Sports. Relaxation: Meaning and Definition, types and methods of psychological relaxation, Personality: Influence of Sports on Personality development, Personality and Temperament, Personality of elite sports persons, Sublimization of emotions.

UNIT IV - Psychological Tests

Types of Psychological Test: Instrument based tests: Pass-along test - Tachistoscope - Reaction timer - Finger Dexterity Board - Depth Perception Box - Kinesthesiometer Board. Questionnaire: Sports Achievement Motivation, Sports Competition Anxiety.

Practicals: Atleast five experiments related to the topics listed in the Units above should be conducted by the students in laboratory. (Internal assessment)

REFERENCES.

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Shukla D and Patchuri P.K. - Psychology of Physical Education.



## PAPER-XXIV

### GENDER STUDIES IN PHYSICAL EDUCATION AND SPORTS

MM 100

Credits 04

#### Unit I

Meaning of Gender, Transgender and third Gender, The role of Physical Education and Sports in addressing Gender issues: Women's and Girl's health and wellbeing, Self esteem, Self empowerment; Social inclusion and social integration of Women and Girls.

#### UNIT II- Gender Identity and Gender Issues in Curriculum and Physical Education

Gender Identities and Socialisation Practices in family, schools, other formal and informal institutions, Physical Education curriculum and the gender question,

#### UNIT III - Construction of Gender in Curriculum in Physical Education

Construction of gender in curriculum framework since Independence, Attitude of Women toward Physical Education and Sports, Teacher as an agent of change, Challenging and transforming Gender norms.

#### UNIT IV - Gender Equity

Promoting Gender equity through Physical Education and Sports: Claiming space, access to resources, structures and leadership. Choice of Sports, Traditional Games and Competitions, Incentives, Women in sports and media (print and electronic), Review of researches on Gender studies in Physical Education and Sports.

#### REFERENCES

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## PAPER – XXV

### DISABILITY/INCLUSIVE SPORT EDUCATION

MM 100

Credits 04

#### UNIT 1- Introduction

Meaning of Disability and Inclusive Sports Education, Objectives, Important considerations, Types of impairment, Causes, Social recognition, Issues related to the behavior of Disabled, Major considerations of Disability, Role of common people for the Disabled.

#### UNIT II - Assessment and Inclusion of Sports for Disability

Understanding the problem of the disabled, Assessment procedures, Tests related to assessment of disability, Need for inclusion of Sports, Types of activities to be included to educate the disabled, Assessment of disability of the child in the school and remedial measures.

#### UNIT III-Task Ability

The Movement Form, The Environment, Equipment, Rules and Instructions. Creating quality through teaching and communicating for inclusive Physical Education and Sports.

#### UNIT IV-Sports for the Disable Persons

Inclusion of physical education and sports in educational curriculum, Sports for different type of disability, Exercises as remedial measure for various type of disability, Modified sports for the disabled, Competitions for the disabled, Types of competitions and their participation, Fitness Counseling. Review of researches on Disability and Sport Education.

#### REFERENCES

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## PAPER – XXV

### MAJOR RESEARCH PROJECT/DISSERTATION

MM 100

Credits 10

#### **UNIT – I: Introduction & Review of Related Literature**

- Writing Introduction,
- Preparation of review of literature,
- Meta-Analysis, operationalization of terminologies, writing hypothesis.

#### **UNIT – II: Preparation and presentation of report.**

- Procedure of selection of subjects,
- Collection of data, administration of tools and statistical procedures, analysis of data,
- Discussion of findings and discussion of hypothesis
- Referencing, plagiarism.

#### **UNIT – III: Types of research proposal:**

- Historical Research Proposal,
- Philosophical Research Proposal,
- Experimental Research Proposal and Survey studies

#### **UNIT – IV: Practicum**

- Writing research proposal for different types of research
- Reviewing of different research documents
- Meta-Analysis
- Learning the use of different referencing styles, APA etc.

**TEACHING LEARNING STRATEGIES:** The students shall be encouraged to discussion, use of library, seminars & presentations.

**ACTIVITIES:** Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

**ASSESSMENT RUBRIC:** Developing of a synopsis (draft proposal for dissertation)