

**REGULATION, SYLLABI AND SCHEME OF EXAMINATION FOR
THE MASTER OF PHYSICAL EDUCATION (M.P.Ed - 2yrs) COURSE**

(Since 2019-20 onwards)

1. Eligibility for Admission to the Course

- a) Bachelor of Physical Education (B.P.Ed) or equivalent with at least 50% marks
- b) A minimum intercollegiate level participation in sports and games is compulsory.
- c) The candidates should not have completed 32 years of age as on 1st July. However, relaxation of 3 years shall be given for SC/ST candidates.
- d) Ex-Servicemen / Experienced Physical Education Teachers shall be given relaxation of 3 years of age.
- e) The candidate should be medically fit and free from any deformity.
- f) Pregnant women are not permitted either for admission or to undergo the course. If violated, they will not be permitted to continue the course.
- g) Admission shall be made on the basis of ranking in the entrance and fitness test.

2. Course of Study

- a) Duration of the Course - The duration of the course of study is two (02) academic years, consisting of four semesters. The total working days shall not be less than 200 days in an Academic year. Each semester consists of not less than 100 working days excluding examination.
- b) Each working day shall consist of four hours of Practical Work (Morning and Evening – 2 hours for each session) and three hours of theory in between and one hour of Theory Practical.
- c) Undergoing Teaching lesson, Internship/ Intensive Teaching in neighboring schools/colleges and village Adaptation programme shall be compulsory for all the students.
- d) The Course of study shall consist of three parts Viz Part I Theory, Part II Practicum, and Part Teaching lesson, Internship/ Intensive Teaching.

Part I –Theory

The course offers a package of certain core and elective for the effective interaction among the students from different disciplines. **Since this course is a practically oriented programme in nature and conducted as per the NCTE guidelines, hence no supportive courses are offered by this department. Also adopt two courses from e-PG Pathshala in the first and fourth semester as part of online course.** The innovation of the course consist of inter disciplinary curriculum with a pronounced accent on the frontier areas of knowledge. Under this system, the course comprises several papers, which are referred to in terms of the credits which are worthy and grading to the students may be awarded according to their performance.

The theory paper consists of internal and external assessment. The internal assessment marks awarded by the department will be added to the marks obtained at the university examination in each theory paper calculating the percentage of marks subsequently by credits under CBCS system. A candidate will be deemed to have passed the written examination and thesis, provided that the candidate shall have obtained a minimum of 50% in the university external examination and the total aggregate marks should be not less than 50% in internal and external.

Semester I

- Scientific Principles of Sports Training and Coaching
- Exercise physiology (e-PG Pathshala)
- Tests, Measurement and Evaluation in Physical Education
- (A) Education Technology in Physical Education
- (B) Health Education and Sports Nutrition

Semester II

- Research Process in Physical Education
- Sports and Exercise Psychology

- Sports Biomechanics and Ergonomics
- (A) Sports Journalism and Mass Media
- (B) Sports Technology
- Semester III**
- Sports Management and Curriculum Designs
- Applied Statistics in Physical Education & Sports
- Yogic Science
- (A) Information Communication and Technology in Physical Education
- (B) Value and Environmental Education
- Semester IV**
- Athletic Care and Rehabilitation (e-PG Pathshala)
- Theory of Track and Field
- (A) Physical Fitness and Wellness
- (B) Sports Engineering

Part II – Practicum

Participation and learning the skills and techniques, teaching and coaching methods of following activities

| S. No. | Activities for Semester I |
|-----------------------------|--|
| P-A | Track and Field Events Part I: (Running) Training and Conditioning Exercise: Strength Training – Endurance Training –Speed Training – Flexibility Training - Agility and Coordination ability Training. |
| P-B | Sports Major- I : (Table Tennis, Badminton, Ball Badminton, Tennicoit, and Tennis) |
| Activities for Semester II | |
| P-C | Track and Field Events Part II: (Jumping and Combined Events) |
| P-D | Sports Major- II – (Gymnastics, Aerobics, Weight Lifting, Yoga and Swimming) |
| Activities for Semester III | |
| P-E | Track and Field Events Part III:(Throwing events, Cross Country and marathon races) Fitness Training: Plyometrics, Swiss ball – Medicine Ball – Core Board - Theraband - Trampoline and Circuit. |
| Activities for Semester IV | |
| P-F | Sports Major- III : Netball, Softball, Throw ball, Sepaktakraw, Martial Arts, Fencing and Boxing |
| P-G | Game of Specialization |

Note: The student has to select any one game in the fourth semester for Game Specialization from the following list of games.

| List of Major Games / Sports for Specialization | | | |
|---|------------|----|------------|
| 1. | Basketball | 5. | Hockey |
| 2. | Cricket | 6. | Kabaddi |
| 3. | Football | 7. | Kho-kho |
| 4. | Handball | 8. | Volleyball |

Part III - Teaching lesson, Internship/ Intensive Teaching / Village Adaptation Sports Programmes:

The students of M.P.Ed in second semester need to develop proficiency in taking teaching lessons in track & field and games. Each student teacher is expected to take at least five lessons during the course of the second semester. The lessons will be supervised by the faculty members and experts who would discuss the merits and demerits of the concerned lessons and guide them for their future. In these teaching lessons, the duration of the lesson to be conducted by these students shall be in the range of 30 to 40 minutes depending on the class time, the duration should slowly increase and all the parts of the lesson covered progressively.

In Internship/ Intensive Teaching a student is undergoing supervised practical training in the department/ neighboring Schools/ College/ Sports Organizations/ Sports Academies/ Sports Clubs. Students shall complete minimum of 10 teaching, 10 coaching lessons in 15 working days under the supervision of the assigned Department of Physical Education staff in the schools/ College/ Institutions/ Clubs/ Sports Organizations.

In Adventure activities/ Industry/ Stadia visit the students shall visit the sports industries at various part on India and national/International stadia will helps to combine

theoretical knowledge with practical knowledge.

Adventure sports for students are highly motivational and practical which are unlikely to be seen from the normal classroom environment. Adventure aims at increasing productivity, encourages students to work in different working environment, it builds team spirit, friendship and trust amongst each other. It also involves fitness and maintaining the balance between physical and mental ability of the students.

For the Village Adaptation Sports programme the students shall visit the neighboring village for a minimum period of five days and they may organise various programmes such as;

1. Physical Education and Sports related programmes.
2. Creation of play fields for physical activities, sports and games.
3. Awareness Programmes, health and fitness survey.

| Paper | SEMESTER I |
|--------------|--|
| I-A | Adventure Activities/ Mass Demonstration Activities |
| SEMESTER II | |
| I-B | Teaching Lesson: Class Room Teaching (Lessons on Theory of Different Sports, Games and Track & Field) |
| SEMESTER III | |
| I-C | Internship/Intensive Teaching Practice I: Coaching Lesson (Track and Field & Game of Specialization -I) Mass Drill, March-past, Rhythmic activity, Mallakhamb |
| I-D | Sports Science Specialisation: Field / Laboratory Work: Test, Measurement & Evaluation, Exercise Physiology, Biomechanics, Sports Technology, Sports Psychology, Movement assessment, Athletic Care and First Aid, Sports Training and Human Performance, ICT. |
| SEMESTER IV | |
| I-E | Village Adaptation Sports Programme |

SCHEME OF EXAMINATIONS

1. For each theory paper 25 marks for internal & 75 marks for External.
2. There is no passing minimum for internal examination. Passing minimum for external is 50% and the total passing minimum including internal & external is 50%.
 - I. For internal marks, the split up is 15 marks for internal test (Three tests will be conducted for each paper. Each test carries a maximum of 15 marks and the average of best two tests shall be considered.),
 - II. 5 marks for Seminar: The teachers shall conduct seminar to the students based on the performance of the student 5 marks will be awarded.
 - III. 5 marks for Assignment: The teachers shall give assignments to the students and 5 marks will be awarded for assignments.
3. For Project/Thesis: 50 marks maximum for internal and 50 marks maximum for external. There is no passing minimum for internal valuation. Passing minimum for external is 50% and the total passing minimum including internal & external is 50%.
4. The question paper pattern for theory external exam is as follows:

| | |
|---|------------------------|
| □ Section - A: MCQ (Two questions from each unit) | 10 x 1 mark =10 marks |
| □ Section - B (Two question from each unit with either or choice) | 5 x 5 marks = 25 marks |
| □ Section – C (One question from each unit with either or choice) | 5 x 8 marks = 40 marks |

| | |
|--------------|-------------------|
| Total | = 75 marks |
|--------------|-------------------|

Practical Examination:

For each sports Practical paper 50 marks for Internal & 50 marks for External.

There is no passing minimum for internal examination. Passing minimum for external is 50% and the total passing minimum including internal & external is 50%.

Teaching lesson, Internship/ Intensive Teaching:

For each Teaching lesson, Internship/ Intensive Teaching paper 50 marks for Internal & 50 marks for External.

There is no passing minimum for internal examination. Passing minimum for external is 50%

and the total passing minimum including internal & external is 50%.

Attendance – as per the university norms will be followed.

Adventure activities/ Industry/Stadia visit, Village adaptation Sports Programme:

For each Adventure activities/ Industry/Stadia visit and Village adaptation Sports Programmes 100 marks for Internal. The passing minimum is 50 %.

Special Permission for University Examination

A student representing the university / State / Nation / international in game or sport and unable to write the University Semester Examinations, he/she will be permissible to appear for special supplementary University Examination as stipulated by the University.

1. M.P.ED SCHEME OF EXAMINATION 2019- 20 ONWARDS

| Course | Sub. Code | Name of the Subject | Credit | Hours/ Week | Maximum Marks | | | Passing Minimum | |
|-----------------------|----------------|---|-----------|-------------|---------------|------|-------------|-----------------|-------------|
| | | | | | Int. | Ext. | Total Marks | Ext. | Total Marks |
| SEMESTER I | | | | | | | | | |
| C | NPEC11 | Scientific Principles of Sports Training and Coaching | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| C | NPEC12 | Exercise Physiology (e-PG Pathshala) | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| C | NPEC13 | Tests, Measurement and Evaluation in Physical Education | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| E | NPEEA NPEEB | (A) Education Technology in Physical Education (B) Health Education and Sports Nutrition | 3 | 3 | 25 | 75 | 100 | 38 | 50 |
| L | NPEL11 | Track and Field Events Part –I (Practical –1) | 2 | 10 | 50 | 50 | 100 | 25 | 50 |
| L | NPEL12 | Sports Major – I (Practical –2) | 2 | 10 | 50 | 50 | 100 | 25 | 50 |
| I | NPEI11 | Adventure Activities/ Industry/ Stadia visit | 3 | | 100 | - | 100 | - | 50 |
| First semester Total | | | 22 | 35 | | | | | |
| SEMESTER II | | | | | | | | | |
| C | NPEC21 | Research Process in Physical Education | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| C | NPEC22 | Sports and Exercise Psychology | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| C | NPEC23 | Sports Biomechanics and Ergonomics | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| E | NPEEC NPEED | (A) Sports Journalism and Mass Media (B) Sports Technology | 3 | 3 | 25 | 75 | 100 | 38 | 50 |
| L | NPEL21 | Track and Field Events Part –II (Practical –3) | 2 | 10 | 50 | 50 | 100 | 25 | 50 |
| L | NPEL22 | Sports Major – II (Practical –4) | 2 | 10 | 50 | 50 | 100 | 25 | 50 |
| I | NPEI21 | Teaching lessons | 5 | | 50 | 50 | 100 | 25 | 50 |
| Second Semester Total | | | 24 | 35 | | | | | |
| SEMESTER III | | | | | | | | | |
| C | NPEC31 | Sports Management and Curriculum Designs | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| C | NPEC32 | Applied Statistics in Physical Education and Sports | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| C | NPEC33 | Yogic Science | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| E | NPEEE NPEEF | (A) ICT in Physical Education (B) Value and Environmental Education | 3 | 3 | 25 | 75 | 100 | 38 | 50 |
| L | NPEL31 | Track and Field Events Part –III (Practical –5) | 2 | 10 | 50 | 50 | 100 | 25 | 50 |
| I | NPEI31 | Internship/ Intensive Teaching | 5 | - | 50 | 50 | 100 | 25 | 50 |
| I | NPEJ32 | Sports Science Specialization | 3 | 3 | 50 | 50 | 100 | 25 | 50 |
| L | (Carry over) | Game of Specialization | - | 10 | - | - | - | - | - |
| P | (Carry over) | Thesis / Project | - | 2 | - | - | - | - | - |
| Third Semester Total | | | 27 | 40 | | | | | |
| SEMESTER IV | | | | | | | | | |
| C | NPEC41 | Athletic Care and Rehabilitation (e-PG Pathshala) | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| C | NPEC42 | Theory of Track and Field | 4 | 4 | 25 | 75 | 100 | 38 | 50 |
| E | NPEEG NPEEH | (A) Physical Fitness and Wellness (B) Sports Engineering | 3 | 3 | 25 | 75 | 100 | 38 | 50 |
| L | NPEL41 | Game of Specialization (Practical –6) | 2 | 10 | 50 | 50 | 100 | 25 | 50 |
| L | NPEL42 | Sports Major – III (Practical –7) | 2 | 10 | 50 | 50 | 100 | 25 | 50 |
| I | NPEI41 | Village Adaptation Sports Programme | 4 | - | 100 | - | 100 | - | 50 |
| P | NPEP41 | Thesis / Project | 4 | 4 | 50 | 50 | 100 | 25 | 50 |
| Fourth Semester Total | | | 27 | 40 | | | | | |
| Total | | | 96 | 145 | | | | | |

Paper – 1 (Core)
SCIENTIFIC PRINCIPLES OF SPORTS TRAINING AND COACHING

Objectives:

1. To understand the basic principles of sports training and Motor components.
2. To apply Strength, Speed and Endurance in various training programmes
3. To apply Flexibility and coordinative abilities in various training programmes
4. To design the training plan for elite athletes
5. To apply and prepare the elite athlete for high level competition

Outcome:

This course will provide an opportunity for students to identify and apply the scientific sports principles to improve the player's performance through different training programmes and also provide doping knowledge.

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UNIT - I: Introduction

(12 hours)

Sports training: Meaning and Definition – Aim, Characteristics and Principles of Sports Training – Training Load: Definition, Adaptation and Principles of load, Over load principle, Causes of Over training, Symptoms of Over training and Remedial Measures – Super Compensation – Altitude Training – Cross Training – Warming-up and Limbering down and importance.

UNIT – II: Strength, Speed and Endurance

(12 hours)

Components of Physical Fitness - Strength: types, Methods to improve Strength: Weight Training, Isometric, Isotonic, Isokinetic, Medicine ball, elastic band training and Special Type Training: Plyometric Training - Speed: Methods to Develop Speed: Repetition Method, Downhill Run, Parachute Running, Wind Sprints – Endurance: types, Methods to Improve Endurance: Continuous Method, Interval Method, Repetition Method, Cross Country, Fartlek Training and circuit training.

UNIT – III: Flexibility and Coordinative Abilities

(12 hours)

Flexibility: Methods to Improve the Flexibility - Stretch and Hold Method and Ballistic Method, Coordinative abilities: Methods to improve Coordinative abilities: Sensory Method, Variation in Movement Execution Method, Variation in External Condition Method, Combination of Movement Method, Types of Stretching Exercises and training, Development of coordinative ability training.

UNIT – IV: Training Plan and Periodisation

(12 hours)

Training Plan: Macro cycle, Meso cycle and Micro cycle, Short Term Plan and Long Term Plans - Periodisation: Meaning, Single, Double and Multiple Periodisation, Preparatory Period, Competition Period and Transition Period, Linear and undulating Periodisation, Training peak.

UNIT – V: Technical, Tactical Preparation and Doping

(12 hours)

Technical Training : Phases of skill acquisition, Methods of technical training, Causes of faults and their corrections - Tactical training: Concept of tactics and strategy, Methods of tactical training – Talent identification: Methods and types – Doping: Definition, Side effects of drugs, Dietary supplements, IOC list of doping classes and methods, Blood Doping, Problems with the supply of medicines Subject to IOC regulations: Over-The-Counter drugs (OTC), Prescription Only Medicines (POMs), Controlled Drugs (CDs).

REFERENCES:

- BeotraAlka, (2000), Drug Education Handbook on Drug Abuse in Sports. Delhi: Sports Authority of India.
- Bill Foren, (2001). High Performance Sports Conditioning. USA: Human Kinetics Publishers.
- 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
- David R. Mottram, (1996). Drugs in Sport. School of Pharmacy, Liverpool: John Moore University Dick,
- Gary, T. Moran, (1997). Cross Training for Sports. Canada: Human Kinetics
- Jensen, C.R. & Fisher A.G. (2000). Scientific Basic of Athletic Conditioning. Philadelphia.
- Ronald, P. Pfeiffer., (1998). Concepts of Athletics Training (2nd Ed.,). London: Jones and Bartlett

Publications

- Singh. Hardayal, (1991). Science of Sports Training. New Delhi: D. A.V. Publications.
- Thomas R. Baechle, & Roger W. Earle, (2000). Essentials of Strength Training and Conditioning (2nd Ed.,). USA: Human Kinetics Publishers.
- Tudor O. Bompa,(1999). Periodisation. USA: Human Kinetics Publishers.

Paper – 2 (Core)
EXERCISE PHYSIOLOGY

Objectives:

1. To analysis the impact of exercises on the muscular system.
2. To apply exercise effect on cardiovascular system
3. To apply exercise influences on respiratory system
4. To incorporate the metabolic and energy system with exercise
5. To analyse the ergogenic aids and its impact on sports performance

Outcome:

This course will provide an opportunity for students to analyse the exercise effect on various body internal functions and improvement on sports performance.

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UNIT I – Skeletal Muscles and Exercise

(12 hours)

Introduction – Muscle Structure, skeletal muscles and Exercise, Macro & Micro Structure of the Skeletal Muscle, Chemical Composition. Muscle Tone, Sliding Filament theory of Muscular Contraction. – Heat Production in the Muscle, Effect of exercises and training on the muscular system.

UNIT II – Cardiovascular System and Exercise

(12 hours)

Structure and functions of Cardiovascular System, Pulmonary and Systematic Circulations. Basic Structure of Arteries – Classification of Arteries. Capillaries – Types and Functions of Capillaries.

UNIT III – Respiratory System and Exercise

(12 hours)

Mechanism of Breathing – Respiratory Muscles, Minute Ventilation – Rest and During Exercise. Lungs - Diffusion of Gases – Exchange of Gases in the Lungs, Tissues – Control of Ventilation – Aerobic and Anaerobic Threshold. Oxygen Debt – Lung Volumes and Capacities – Effect of exercises and training on the respiratory system.

UNIT IV – Metabolism and Energy Transfer

(12 hours)

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

UNIT V – Sports performance and Ergogenic aids

(12 hours)

Sports performance in hot climate, Cool Climate, high altitude. Demands of the Sport – Evaluation and Testing – Nutrition and Recovery – Anatomical Adaptation. Ergogenic Aids – Types and Objectives – popular sports Supplements. Nutritional Ergogenic aids – Definitions and Benefits - Regulatory issues - Implication of Nutritional Ergogenic aids

REFERENCES:

- Christine M. Drews., (1999). *Physiology of Sports and Exercise*. USA: Human Kinetics Publishers.
- David, L. Costill. (2004). *Physiology of Sports and Exercise*. Human Kinetics.
- Ira Wolinsky. July A. Driskell. (2004) CRC Press.
- Jack H. Wilmore, David L. Costill., & W. Larry Kenny. (2008). *Physiology of Sports and Exercise (4th Ed.,)*. USA: Human Kinetics Publishers.
- Jay Hoftman., (2000). *Physiological Aspects of Sports training and Performance*. USA: Human Kinetics Publishers.
- Vincent, T. Murche. (2007). *Elementary Physiology*. Hyderabad: Sports Publication.
- William, C. Whiting & Stuart Rugg. (2006). *Dyanatomy*. USA: Human Kinetics.
- William, D. McAradle. (1996). *Exercise Physiology, Energy, Nutrition and Human Performance*. Philadelphia:

Paper – 3 (Core)
Test Measurement and Evaluation in Physical Education

Objectives:

1. To understand the test- validity, reliability, objectivity and norms.
2. To apply various motor fitness tests to find the fitness abilities.
3. To apply various physical fitness tests to find the physical abilities.
4. To analysis the anthropometrical measurements used to find the body segments.
5. To analysis of various sports ability through sports skill test

Outcome:

This course will improve the ability to construct various norms and conducting test to collecting data and to find out the ability of an athlete.

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(12 hours)

UNIT I – Introduction

Meaning and Definition of Test, Measurement and Evaluation. Need and Importance of Measurement and Evaluation. Criteria for Test Selection – Scientific Authenticity. Meaning, definition and establishing Validity, Reliability, Objectivity. Norms – Administrative Considerations.

UNIT II – Motor Fitness Tests

(12 hours)

Meaning and Definition of Motor Fitness. Test for Motor Fitness; Indiana Motor Fitness Test (for elementary and high school boys, girls and College Men) aapherd youthFitness 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 – Physical Fitness Tests

(12 hours)

Physical Fitness Test: AAPHERD Health Related Fitness Battery (revised in 1984), YMCA Physical Fitness Test, Roger’s physical fitness Index. Cardio vascular test; Harvard step test, 12 minutes run / walk test, Multi-stage fitness test (Beep test)

UNIT IV – Anthropometric and Aerobic - Anaerobic Tests

(12 hours)

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 V – Skill Tests

(12 hours)

Specific Spots Skill Test: Badminton: French short service test, Miller Wall Volley Test. , Volleyball, Russel Lange Volleyball Test, Brady Volleyball Test, Helmen volleyball test, Football: Mor-Christian General Soccer Ability Skill Test Battery, Johnson Soccer Test, Mc -Donald Volley Soccer Test. Tennis: Dyer Tennis Test, Hewit tennis service placement test.

REFERENCES:

- ACSM’s (1992). Health/Fitness Facility Standards and Guidelines, New York: Human Kinetics. Authors Guide (2013) ACSM’s Health Related Physical Fitness Assessment Manual. USA: ACSM Publications.
- Collins, R. D., & Hodges P.B., (2001). A Comprehensive Guide to Sports Skills Tests and Measurement (2nd edition) Lanham: Scare row Press
- Edmund O. Acevedo & Michael A. Starks., (2003). Exercise Testing and Prescription lab Manual. USA: Human Kinetics Publishers.
- James R. Morrow., Allen Jackson, James G. Disch & Dale Mood. (2011). Measurement and Evaluation in Human Performance (4th Ed.), USA: Human Kinetics Publishers.
- Safrit, Margaret J., (1995). Introduction to Measurement in Physical Education and Exercise Science.

Elective -1 A
EDUCATION TECHNOLOGY IN PHYSICAL EDUCATION AND SPORTS

Objectives:

1. To apply various technological strategies to education
2. To analyse the system approaches to physical education through communication
3. Provide knowledge about instructional design of self learning methods
4. Application of audio visual media in physical education
5. To develop innovative ability on educational technology

Outcome:

This course will provide an opportunity for students to learn and develop by using various technological strategies to improve the quality of physical education profession

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Unit I – Nature and Scope

(10 hours)

Educational technology-concept, Nature and Scope. Forms of educational technology: teaching technology, instructional technology, and behaviour technology; Transactional usage of educational technology: integrated, complementary, supplementary stand-alone (independent); programmed learning stage; media application stage and computer application stage.

Unit II – Systems Approach to Physical Education and Communication

(10 hours)

Systems Approach to Education and its Components: Goal Setting, Task Analysis, Content Analysis, Context Analysis and Evaluation Strategies; Instructional Strategies and Media for Instruction. Effectiveness of Communication in instructional system; Communication - Modes, Barriers and Process of Communication.

Unit III- Instructional Design

(10 hours)

Instructional Design: Concept, Views. Process and stages of Development of Instructional Design. Overview of Models of Instructional Design; Instructional Design for Competency Based Teaching: Models for Development of Self Learning Material.

Unit IV – Audio Visual Media in Physical Education

(12 hours)

Audio-visual media - meaning, importance and various forms Audio/Radio: Broadcast and audio recordings - strengths and Limitations, criteria for selection of instructional units, script writing, pre-production, post-production process and practices, Audio Conferencing and Interactive Radio Conference. Video/Educational Television: Telecast and Video recordings Strengths and limitations, Use of Television and CCTV in instruction and Training, Video Conferencing, SITE experiment, countrywide classroom project and Satellite based instructions. Use of animation films for the development of children's imagination.

Unit V – New Horizons of Educational Technology

(12 hours)

Recent innovations in the area of ET interactive video - Hypertext, video-texts, optical fiber technology - laser disk, computer conferencing. etc. Procedure and organization of Teleconferencing/Interactive video-experiences of institutions, schools and universities. Recent experiments in the third world countries and pointers for, India with reference to Physical education. Recent trends of Research in Educational Technology and its future with reference to education.

REFERENCES:

- Amita Bhardwaj, New Media of Educational Planning". Sarup of Sons, New Delhi-2003 Bhatia and Bhatia. The Principles and Methods of Teaching (New Delhi : Doaba House), 1959.
- Communication and Education, D. N. Dasgupta, Pointer Publishers
- Education and Communication for development, O. P. Dahama, O. P. Bhatnagar, Oxford Page 68 of 71 IBH Publishing company, New Delhi
- Essentials of Educational Technology, Madan Lal, Anmol Publications
- K. Sampath, A. Pannirselvam and S. Santhanam. Introduction to Educational Technology (New Delhi: Sterling Publishers Pvt. Ltd.) : 1981.
- Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jalandhar, Sterling Publishers Pvt. Ltd.), 1982

- Kozman, Cassidy and Jackson. Methods in Physical Education (W.B. Saunders Company, Philadelphia and London), 1952.

Elective – 1 B
HEALTH EDUCATION AND SPORTS NUTRITION

Objectives:

1. To understand the basic principles of health Education.
2. To provide enough knowledge about communicable and non-communicable diseases.
3. To apply managerial roles on obesity and hygiene
4. To apply nutritional effect on body metabolism and sports performance
5. To design and apply the diet plan and exercises schedule for weight management

Outcome:

This course will provide an opportunity for students to understand the health importance, free from diseases, nutritional awareness and managerial roles to maintaining health fitness.

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Unit - I Health Education

(10 hour)

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

(10 hour)

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 schools - Health Services - Care of skin, Nails, Eye health service, Nutritional service, Health appraisal, Health record, Healthful school environment, first- aid and emergency care.

Unit- III – Hygiene and Health

(10 hour)

Meaning of Hygiene, Type of Hygiene, dental Hygiene, Effect of Alcohol on Health, Effect of Tobacco on Health, Life Style Management, Management of Hypertension, Management of Obesity, Management of Stress

Unit – IV- Introduction to Sports Nutrition

(12 hour)

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.

Unit – V Nutrition and Weight Management

(12 hour)

Concept of BMI (Body mass index), Obesity and its hazard, Dieting versus exercise for weight control 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.

References:

- 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 Education".
- 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 Practical Guide to Positive Health Using Diet,

**Second Semester
Paper 4 (Core)
RESEARCH PROCESS IN PHYSICAL EDUCATION AND SPORTS**

Objectives:

1. To understand research terminology, problem selection and literature search.
2. To describe methods of research.
3. To demonstrate knowledge on experimental research and research design.
4. To aware of the ethical principles of research and sampling techniques.
5. To learn the mechanism of thesis, proposal and paper writing.

Outcome:

This course will provide an opportunity for students to establish or advance their understanding of research through critical exploration of research terminologies, research methods, ethics, sampling, research design and thesis writing.

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UNIT I – Introduction

- 12 hours

Meaning and Definition of Research – Need, Nature and importance of research in Physical Education - Types of Research - Location of Research Problem - Criteria for selection of a research problem - Steps in research process - Formulation of hypothesis – Literature: Purpose of the literature , Literature search techniques – Variables and its types.

UNIT II – Methods of Research

- 12 hours

Survey Study: Interview and Questionnaire method - Case study- Historical Research: Steps in Historical Research, Sources of Historical Research: Primary Data and Secondary Data- Historical Criticism: Internal Criticism and External Criticism – Meta Analysis- Philosophical Research.

UNIT III – Experimental Research

- 12 hours

Experimental Research; Meaning, Nature and Importance –Experimental and control group – Steps in experimental research - Experimental Design (Single Group Design, Reverse Group Design, Repeated Measure Design, Static Group Comparison Design, Equated Group Design, Factorial Design) - Crosssectional/ Survey designs - Time series designs - Longitudinal designs – Reliability analysis.

UNIT IV – Sampling

- 12 hours

Meaning and Definition of sampling- Types of Sampling - Probability Methods; Systematic Sampling, Cluster sampling, Stratified Sampling, Area Sampling, Multistage Sampling - Non-Probability Methods: Convenience Sample, Judgment Sampling, Quota Sampling, Snowball sampling - Determining the sample size – Ethical considerations in research – common faults in research.

UNIT V – Research Proposal and Report

- 12 hours

Chapterization of Thesis / Dissertation, Front Materials, Body of Thesis and Back materials - Method of Writing Research proposal - Method of writing abstract - Full paper for presenting in a conference and to publish in journals –APA format for Bibliography writing.

REFERENCES :

- Best, J. W. (1971). *Research in Education*. New Jersey: Prentice Hall Inc.
- Chris, Gratton., & Ian, Jones. (2004). *Research Methods for Sports Studies*. London: Routledge Taylor & Francis Group.
- Clarke, David, H., & Clarke, H, Harrison. (1984). *Research processes in Physical Education*. New Jersey: Prentice Hall Inc.
- Craig, Williams., & Chris, Wragg. (2006). *Data Analysis and Research for Sport and Exercise Science*.

London: Routledge Taylor & Francis Group.

- Jerry, R. Thomas., & Jack, K. Nelson. (2005). *Research Methods in Physical Activities (5th Ed)*. Champaign, Illinois; Human Kinetics.
- John, W. Best., & James, V. Kahn. (2006). *Research in Education (9th Ed)*. New Delhi: Prentice Hall of India Pvt.
- Kamlesh, M. L. (1999). *Research Methodology in Physical Education and Sports*. New Delhi
- Kothari, C.R. (2004). *Research Methodology (2nd Ed)*. New Delhi: New Age International Pvt.

Paper - 5 (Core)
SPORTS AND EXERCISE PSYCHOLOGY

Objectives:

1. To analysis the factor affecting learning
2. To experiment of emotional effects on sports performance.
3. To analysis of sports performance through various psychological instruments
4. To study of social effectiveness and leadership impact on sports performance
5. To analysis of group cohesion and women sports

Outcome:

This course will provide an opportunity for students to understand various psychological theories support to improve the sports performance and also aware of sports sociology.

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UNIT I – Introduction

(12 hours)

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

(12 hours)

Meaning and Definition, 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

(12 hours)

Meaning and Definition, Process of Goal Setting in Physical Education and Sports. Relaxation: Meaning and Definition, types and methods of psychological relaxation. 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.

UNIT IV – Sports Sociology

(12 hours)

Meaning and Definition – Sports and Socialization of Individual Sports as Social Institution. National Integration through Sports. Fans and Spectators: Meaning and definition, Advantages and disadvantages on Sports Performance. Leadership: Meaning, Definition, types. Leadership and Sports Performance.

UNIT V – Group Cohesion

(12 hours)

Group: Definition and Meaning, Group Size, Groups on Composition, Group Cohesion, Group Interaction, Group Dynamics. Current Problems in Sports and Future Directions – Sports Social Crisis Management – Women in Sports: Sports Women in our Society, Participation pattern among Women, Gender inequalities in Sports.

REFERENCES:

- Authors Guide (2013) National Library of Educational and Psychological Test (NLEPT) Catalogue of Tests, New Delhi: National Council of Educational Research and Training Publication.
- Authors Guide (2013) National Library of Educational and Psychological Test (NLEPT) Catalogue of Test, New Delhi: National Council of Educational Research and Training Publication.
- Jain. (2002), Sports Sociology, Heal Sahety Kendre Publishers.
- Jay Coakley. (2001) Sports in Society – Issues and Controversies in International Education, Mc-Craw Seventh Ed.
- John D Lauther (2000) Psychology of Coaching. Ner Jersy: Prenticce Hall Inc. John D. Lauther (1998) Sports Psychology. Englewood, Prentice Hall Inc.
- Richard, J. Crisp. (2000). Essential Social Psychology. Sage Publications.
- Robert N. Singer (2001). Motor Learning and Human Performance. New York: The Macmillan Co.
- Thelma Horn. (2002). Advances in Sports Psychology. Human Kinetic.
- Whiting, K, Karman.,. Hendry L.B & Jones M.G. (1999) Personality and Performance in Physical Education and Sports. London: Hendry Kimpton Publishers.

Paper – 6 (Core)

SPORTS BIO-MECHANICS AND ERGONOMICS

Objectives:

1. To understand the Kinetics and Kinematics application n sports.
2. To apply centre of gravity and equilibrium principles on sports performance.
3. To apply forces and motion principle of applications on sports.
4. To understand and apply projectile and lever application on sports.
5. To qualitative and qualitative analysis of various sports movements and ergonomics impact on sports.

Outcome:

This course will provide an opportunity for students to understand and experiment on principles of sports movements and Biomechanical applications that help to improve sports performances.

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UNIT - I: Introduction, Kinematics and Kinetics

(12 hours)

Biomechanics: Meaning and Definition – Sports Biomechanics: Meaning and Definition, Importance and scope – Organisation of Biomechanics: Static and Dynamic, Scalar and Vector, Distance and Displacement - Kinematics and Kinetics

UNIT – II: Centre of Gravity and Equilibrium

(12 hours)

Equilibrium: Meaning and Definition, Guiding Principle of Equilibrium, Stability: Static and Dynamic, Stages of Stability, Factors affecting stability – Centre of Gravity: concept of Centre of Gravity, Line of Gravity, Mass and Weight and Earth Gravity, Momentum, Impulse and Impact- Elasticity

UNIT – III: Motion and Force

(12 hours)

Motion: Meaning and Definition, Types of Motion: Linear motion, Angular motion, Circular motion and Uniform motion, Newton Law of Motion: Law of Inertia, Law of Acceleration and Law of Counter Force – Force: Meaning and Definition, Sources of force, Force components, Force applied at an angle, Centripetal force and Centrifugal force, Friction force, Pressure, Buoyant force, Principles of Force – Spin: Meaning, Types and Magnus effect.

UNIT – IV: Projectile and Lever

(12 hours)

Projectile: Meaning and Definition, Freely falling bodies - Equation of projectiles, Principles of Projectile, Fluid Mechanism: Water resistance, Air resistance and Aerodynamics - Work, Power, Energy, kinetic energy and potential energy - Lever: classes of lever and leverage advantage.

UNIT – V: Movement Analysis and Ergonomics

(12 hours)

Sports Biomechanics: Meaning and Definition of Analysis, Types of analysis, Methods of analysis: Qualitative, Quantitative, Predictive, Analysis of Sports Movements, Application of Biomechanical Principles on Sports movements – Ergonomics: meaning, definition, need and importance in physical education – current scenario of

sports ergonomics.

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

REFERENCES:

- Carr, Gerry, sports mechanics for coaches new York human kinetics, 2004.
- Peter M. McGinnis, (1999). Biomechanics of Sport and Exercise. USA: Human Kinetics.
- Peter m. McGinnis, Biomechanics of Sports And Exercises, USA, Human Kinatics, 1999.
- Robertson .E. Gordon D et. al., (2004). Research Methods in Biomechanics. New York: Human Kinetics.
- Shaw Dhananjay. (2000). Mechanical Basis of Biomechanics. New Delhi: Sports Publications.
- William C. Whiting & Stuart Rugg, (2006) Dyanatomy. USA: Human Kinetics.
- Williams M., (1982). Biomechanics of Human Motion. Philadelphia: Saunders Co.

Elective – 2 (A)

SPORTS JOURNALISM AND MASS MEDIA

Objectives:

1. To understand the role of Journalism in the Field of Physical Education
2. To understand sports news reporting and conception of sports bulletin.
3. To understand the role of Mass Media in Journalism
4. To prepare report of sports Meet and organization of Press Meet for Publication
5. To understand impact of journalism on sports promotion

Outcome:

This course will provide an opportunity for students to understand role of journalism and its impact on sports promotion.

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UNIT – I: Introduction

(10 hours)

Meaning and Definition of Journalism, principles of Journalism – Canons of journalism- Sports morals and Sportsmanship – coverage Sports Events. National and International Sports information Agencies.

UNIT- II: Sports Bulletin

(10 hours)

Conception 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 essential part of Physical Education – Sports organization and sports journalism – common news reporting and sports reporting.

UNIT- III: Mass Media

(10 hours)

Mass Media in Journalism: Radio and T.V. Commentary – consecutively commentary on the radio – Sports expert's interpretation. Role of commercial in Journalism. Sports Photography: Equipment- Editing – Publishing.

UNIT- IV: Report Writing on Sports

(12 hours)

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 –V: Journalism

(12 hours)

Sports organization and Sports Journalism – common 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: Yadava College Publication.
- MohitChakrabarti., (2008). Value Education: Changing Perspective. New Delhi: Kanishka Publication,

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

Elective – 2 (B) **SPORTS TECHNOLOGY**

Objectives:

1. To understand the Principles and purpose of instrumentation in sports
2. To understand the factors and application of sports material in sports.
3. To understand the construction and installation of indoor and outdoor sports surfaces
4. To analyse the advantages of different types of material on sports performance
5. To design and manufacture improvised sports testing equipments.

Outcome:

This course will provide an opportunity for students to design and manufacture different sports gadgets for improving sports performance of an athlete.

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Unit I – Sports Technology

Meaning, definition, purpose, advantages and applications, General Principles and purpose of instrumentation in sports, Workflow of instrumentation and business aspects, Technological impacts on sports.

(10 hours)

Unit II – Science of Sports Materials

Adhesives- Nano glue, nano moulding technology, Nano turf. Foot wear production, Factors and application in sports, constraints. Foams- Polyurethane, Polystyrene, Styrofoam, closed- cell and open-cell foams, Neoprene, Foam. Smart Materials – Shape Memory Alloy (SMA), Thermo chromic film, High-density modelling foam.

(10 hours)

Unit III – Surfaces of Playfields

Modern surfaces for playfields, construction and installation of sports surfaces. Types of materials – synthetic, wood, polyurethane. Artificial turf. Modern technology in the construction of indoor and outdoor facilities. Technology in manufacture of modern play equipments. Use of computer and software in Match Analysis and Coaching.

(10 hours)

Unit IV – Modern equipment

Playing Equipments: Balls: Types, Materials and Advantages, Bat/Stick/ Racquets: Types, Materials and Advantages. Clothing and shoes: Types, Materials and Advantages. Measuring equipments: Throwing and Jumping Events. Protective equipments: Types, Materials and Advantages. Sports equipment with nano technology, Advantages.

(12 hours)

Unit V – Training Gadgets

Basketball: Ball Feeder, Mechanism and Advantages. Cricket: Bowling Machine, Mechanism and Advantages, Tennis: Serving Machine, Mechanism and Advantages, Volleyball: Serving Machine Mechanism and Advantages. Lighting Facilities: Method of erecting Flood Light and measuring luminous. Video Coverage: Types, Size, Capacity, Place and Position of Camera in Live coverage of sporting events.

(12 hours)

REFERENCES:

- Charles J.A. Crane, F.A.A. and Furness, J.A.G. (1987) "Selection of Engineering Materials" UK: Butterworth Heiremann.
- Finn, R.A. and Trojan P.K. (1999) "Engineering Materials and their Applications" UK: Jaico Publisher.
- John Mongilo, (2001), "Nano Technology 101 "New York: Green wood publishing group. Walia, J.S. Principles and Methods of Education (Paul Publishers, Jullandhar), 1999.
- Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jullandhar, Sterling Publishers Pvt. Ltd.), 1982

Semester III

Paper – 7 (Core)
SPORTS MANAGEMENT AND CURRICULUM DESIGN

Objectives:

1. To understand the procedures and functions of Sports Management
2. Provide opportunity in planning the public relation program
3. Provide knowledge about procedure for purchase and supply of sports equipments
4. Provide knowledge on principles and theories of curriculum development
5. To analyse the integration of Physical Education with other Sports Sciences

Outcome:

This course will provide an opportunity for students to understand Objectives, Importance and Evaluation of Curriculum research and also to Integrate of Physical Education with other Sports Sciences.

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UNIT I – Introduction to Sports Management

(12 hours)

Definition – Importance - Basic Principles and Procedures of Sports Management - Functions of Sports Management. Personal Management: Objectives of Personal Management - Role of Personal Manager in a Sports organization (Clubs, Association and Government and Private Sports Board) - Personnel recruitment and selection procedure for sports Management.

UNIT II – Program Management and Public Relation

(12 hours)

Importance and Role of Programme management - factor influencing programme development. Competitive – Non Competitive Sports Programs: Benefits - Management Guidelines for School, Colleges. Factors of instruction programme, Community Based Physical Education and Sports program – Public Relations in Sports: Planning the Public Relation Program – Principles of Public Relation – Public Relations in School and Communities – Public Relation and the Media.

UNIT III – Purchase and Care of Sports Equipments

(12 hours)

Guidelines for selection and Purchase of Equipments – Equipment Room - Procedure for Supply Equipment. Guidelines for checking, storing, issuing, care and maintenance of equipments.

UNIT IV – Curriculum

(12 hours)

Meaning and Definition of Curriculum. Principles of Curriculum Construction: Students centered - Activity centered - Community centered - Forward looking principle - Principles of integration - Theories of curriculum development -Conservative (Preservation of Culture) – Relevance – flexibility – quality - contextually and plurality. Approaches to Curriculum; Subject centered - Curriculum Framework .

UNIT V – Curriculum Sources

(12 hours)

Factors that affecting curriculum: Sources of Curriculum materials – Text books – Journals – Dictionaries – Encyclopedias – Magazines - Internet. Integration of Physical Education with other Sports Sciences – Curriculum research - Objectives of Curriculum research – Importance of Curriculum research. Evaluation of Curriculum – Evaluation Systems

REFERENCES:

- Aggarwal, J.C., (1990). *Curriculum Reform in India – World overviews*. Doaba World Education Series– 3 Delhi: Doaba House, Book seller and Publisher.
- Bonnie, L. (1991). *The Management of Sports*. St. Louis: Mosby Publishing Company, Park House.
- Bucher A. Charles, (1993). *Management of Physical Education and Sports (10th ed.,)* St. Louis: Mobsy Publishing Company.
- Chakraborty & Samiran. (1998). *Sports Management*. New Delhi: Sports Publication.
- Charles, A, Bucher & March, L, Krotee. (1993). *Management of Physical Education and sports, 10th ed.* St. Louis : Mosby Year Book,
- Chelladurai, P. (1999). *Human Resources Management in Sports and Recreation*. Human Kinetics.

Paper – 8 (Core)

APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS

Objectives:

1. Demonstrate knowledge of statistics and the standard terms like data, population and sample.
2. Demonstrate knowledge of descriptive statistical methods and normal curve.
3. Demonstrate knowledge of the properties of scales and graphs.
4. Demonstrate the ability to perform complex data analysis.
5. Demonstrate the ability to use SPSS for data analysis.

Outcome:

At the end of the course, students will be able to analyze data appropriately, interpret and draw conclusions from those analyses. To equip students with consequently requisite quantitative skills.

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UNIT I – Introduction

- 12 hours

Meaning and Definition of Statistics - Need and importance of Statistics - Types of Statistics - Meaning of the terms: Population, Sample, Data and its types (Nominal, ordinal, interval and ratio), Variables and its types (Discrete and continuous) - Parametric and non-parametric statistics.

UNIT II – Descriptive Statistics and Normal curve

- 12 hours

Meaning and construction of frequency table - Meaning, Calculation, advantages and demerits of Measures of central tendency; Mean, median and mode - Meaning, Calculation, advantages and demerits of Range, Quartile Deviation, Standard Deviation - Meaning of Normal Curve - Principles and Properties of normal curve - Divergence from normality; Skewness and Kurtosis.

UNIT III – Scales and Graphs

- 12 hours

Meaning, Calculation and advantages of scoring scales; Percentile, Z score, T-scale, Six Sigma scale, Hull scale- Graphical Representation in Statistics; Line diagram, Bar diagram, Histogram, Frequency Polygon, Ogive Curve, pie chart - Type I & II Error-Level of significance-Degrees of Freedom.

UNIT IV – Inferential Statistics

- 12 hours

Computation of Independent and Dependent “t” test – Non-parametric Test; chi square test and Man Mann Whitney U test - Meaning of correlation- Calculation of Product moment method and Spearman rank order correlation.

UNIT V – Comparative Statistics and SPSS

- 12 hours

Calculation of ANOVA - concept of ANCOVA and factorial ANOVA – Introduction to SPSS: Data entry, editing variable and data window, calculation of descriptive and inferential statistics.

REFERENCES:

- Andy Field. (2005). *Discovering Statistics Using SPSS (2nd Ed.,)*. New Delhi: Sage Publications.
- Best J. W., (1971). *Research in Education*. New Jersey; Prentice Hall, Inc
- Clark D.H. (1999). *Research Problem in Physical Education (2nd ed.,)*. Eaglewood Cliffs: Prentice Hall, Inc.
- Craig Williams., & Chris Wragg. (2006). *Data Analysis and Research for Sport and Exercise Science*. London: Routledge Press
- Eric L. Einspruch. (2005). *An introductory guide to SPSS® for Windows*. (2nd Ed.,). New Delhi: Sage Publications.
- Jerry R., Thomas & Jack K., Nelson. (2000). *Research Methods in Physical Activities*. Illonosis; Human Kinetics;
- Jerry, R. Thomas., & Jack, K. Nelson. (2000). *Research Methods in Physical Activities*. Illonosis; Human Kinetics.
- Kamlesh, M. L. (1999). *Research Methodology in Physical Education and Sports*. New Delhi.
- Rothstain. A., (1985). *Research Design and Statistics for Physical Education*. Eaglewood Cliffs: Prentice Hall, Inc.

Yogic Sciences

Objectives:

1. To understand the Principles of Yoga sutra and healthy life style.
2. To apply Asana and pranayama practices to improve physical health and respiratory system.
3. To apply yoga kriyas to clean the process of internal organs.
4. To apply meditation and mudra practice for improving mental abilities.
5. To apply yoga practices to improve sports performance

Outcome:

This course will produce the knowledge of yoga concept through enhancing physical and physiological and mental abilities for sports performance and providing holistic healthy life style.

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Unit I – Introduction to Yoga

(12 Hour)

Meaning and Definition of Yoga. Astanga Yoga: Yama, Niyama, Asana, Pranayama, Pratyahara, 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 – Asanas and Pranayama

(12 Hour)

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 – Different types of Kriyas

(12 Hour)

Shat Kriyas- Meaning, Techniques and Benefits of Neti – Dharti – Kapalabhati - Trataka – Nauli – Basti, Bandhas: Meaning, Techniques and Benefits of JalendraBandha, JihvaBandha, Uddiyana Bandha, MulaBandha.

Unit IV – Benefits of Mudras

(12 Hour)

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

Unit V – Yoga and Sports

(12 Hour)

Yoga Supplemental Exercise – Yoga Compensation Exercise – Yoga Regeneration Exercise-Power Yoga. 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.

REFERENCES:

- George Feuerstein. (1975). *Text Book of Yoga*. London: Motilal Bansaridass Publishers (P) Ltd. Gore. (1990). *Anatomy and Physiology of Yogic Practices*. Lonavala: Kanchan Prakashan.
- Helen Purperhart, (2004). *The Yoga Adventure for Children*. Netherlands: A Hunter House book. Iyengar. B.K.S., (2000). *Light on Yoga*. New Delhi: Harper Collins Publishers.
- Karbelkar. N.V.,(1993). *Patanjal 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 anishai.
- Kuvalyananada Swami. & Vinekar. S.L., (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 Sivananda, (1971)

Elective – 3 (A)

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN PHYSICAL EDUCATION

Objectives:

1. Provide knowledge of Communication & Classroom Interaction in physical education
2. To understand the Characteristics and application of computer in physical education
3. To analyse and interpret research data using MS Office Applications.
4. To understand the administration challenges in Integrating ICT into Physical Education
5. Utilization of web resources and e-learning for research activities.

Outcome:

This course will provide an opportunity for students to utilize ICT resource for their learning and research development

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Unit I – Communication & Classroom Interaction

(10 Hours)

conception, essentials, method & Types of Communication. Communication Barriers & Facilitators of communication - Communicative skills of English - Listening, Speaking, Reading & script Concept & Importance of ICT Need of ICT in Education - Scope of ICT: Teaching Learning Process, Publication assessment, Research and Administration Challenges in Integrating ICT in Physical Education

Unit II – Fundamentals of Computers

(10 Hours)

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 network Browsers & Search Engines official & moral Issues

Unit III – MS Office Applications

(12 Hours)

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

(12 Hours)

Approaches to Integrating ICT in Teaching Learning Process - Task Based Learning (TBL) - Two-way Learning - mutual Learning - ICT and Constructivism: An educational Dimension

Unit V – E-Learning & Web Based Learning

(10 Hours)

E-Learning - network Based Learning - Visual Classroom- Web based Instruction – E- Resources – Creation of Web site

REFERENCES:

- B. Ram, (2006). *Computer Fundamental* (3rd Ed.), Brain under IDG Book. India (p) Ltd Douglas E. Comer, (2001). *Teach Yourself Office 2000* (4th Ed.), 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, (2006) Foundations computing BPB Publications.
- Rebecca Bridges Altman Peach pit Press, (1999). *Power point for window*.
- Sanjay Saxena, (2006). Microsoft Office for ever one (2nd Ed.), Vikas Publication House, Pvt. Ltd.

Elective – 3(B)
VALUE AND ENVIRONMENTAL EDUCATION:

Objectives:

1. To understand the importance of nature of environment and education adaptation
2. To understand human ethical value and principles
3. To adopt the concept of eco system
4. To aware the natural environmental resources
5. To understand the relation between environment and human health

Outcome:

This course will provide student to understand public sports participation and improve the quality of environmental education.

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UNIT-I Nature of Environment and Value Education

(10 hours)

Environment: Meaning, scope, need and importance - Role of school in environmental conservation - Sustainable Development - Pollution free Ecosystem. Value Education – Concept of values - Human Values Foundation - Clarification of Values - Definition and Importance. Gender and Education: Education and Employment – Factors affecting women’s education and employment – Rural and urban divide in education system.

UNIT-II Social Values and Ethics

(10 hours)

Individuals and Society - Role of individuals in society - Role of ethics in individuals, family, community and society - Ethical issues in Childcare. NGOs concerning ethics - Human Rights (Men, Women and Child rights) – National Integration - Issues of Bias and Neutrality in evolving ethical principles - Building up ethics/values in students - building up of character.

UNIT III: Concept of Ecosystems

(10 hours)

Structure and function of an ecosystem - Producers, consumers and decomposers - Energy flow in the ecosystem - Ecological succession- Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem – Forest, Grassland, Desert and Aquatic ecosystem (Ponds, Streams, Lakes, Rivers, Oceans, Estuaries). Green house effect - an impending catastrophe.

UNIT IV: Natural Resources of Environment

(12 hours)

Types of Natural Resources - Water resources, Food Resources and Land Resources - Water conservation - rain water harvesting, watershed management and rehabilitation. Environmental issues and possible solutions - Climate change - global warming, acid rain, ozone layer depletion - Nuclear accidents and holocaust - Wasteland reclamation - Environment Protection Act – Water, Air and Land (Prevention and Control of Pollution) - Public awareness - Managing of Environment - Government Policy - Role of pollution control board.

UNIT V: Human Population, Rural Sanitation and Urban Health

(12 hours)

Population growth, variation among nations - Population explosion - Family Welfare Programme -Environment and human health - Rural Sanitation - Rural and Urban Health Problems - Causes of Rural and Urban - Sanitation of Fairs and Festivals - Mass education.

Reference:

- ‘A Textbook on Professional Ethics and Human Values’, By R.S. Naagarazan, New Age International Publishers, New Delhi, 2006.
- ‘Ecology and Human Well Being’, By Pushpam Kumar and B. Sudhakara Reddy, Sage Publications, New Delhi, 2007.
- ‘Value Based Management’, By S.Srinivasan, Jaico Books, Mumbai, 2005.
- ‘Value Education’, By Dr.Shiva and Dr. Balaji Loganathan, Sree Gomathi Publications, Chennai, 2011.
- Feminist Theory : A Reader, by Kolmer, Wendy and Bartkowski, Frances and Kolmar, Wendy.K Westview Printers, August (2009).
- Feminist Thoughts: A more comprehensive introduction by Rosemarie Tong, Westview Printers, August 2008.
- Gender Matters edited by Florence John, Semmoodhai Pathippagam , 2013.

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- *Peace and Value Education for Educational Institutions*. Ed. By DBNI, NCERT, SCERT. Dharma Bharathi National Institute of Peace and Value Education, Secundarabad, 2002.
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Paper – 10 (Core)
ATHLETIC CARE AND REHABILITATION (e-PG Pathshala)

Objectives:

1. To understand and examine different types of human body posture and deformities.
2. To evaluate the effectiveness of exercise interventions on postural deformities,
3. To develop rehabilitation programme for sports injuries
4. To manipulate injured muscles using different massage techniques.
5. To facilitate injuries using sports modalities.

Outcome:

This course will provide an opportunity for students to understand sports injuries and treatment protocol using rehabilitation exercise for quick recovery.

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Unit I – Corrective Physical Education

(12 Hours)

Definition and objectives of corrective physical Education. Posture and body mechanics, Standards of Standing Posture. Value of good posture, Drawbacks and causes of bad posture. Posture test – Examination of the spine.

Unit II – Posture

(12 Hours)

Normal curve of the spine and its utility, Deviations in posture: Kyphosis, lordosis, flat back, Scoliosis, round shoulders, Knock Knee, Bow leg, Flat foot. Causes for deviations and treatment including exercises.

Unit III – Rehabilitation Exercises

(12 Hours)

Rehabilitation Exercise: Definition and purpose - Passive, Active, Assisted, Resisted exercise for Rehabilitation, Stretching, PNF techniques and principles – Rehabilitation Equipments.

Unit IV – Massage:

(12 Hours)

Brief history of massage – Massage as an aid for relaxation – Points to be considered in giving massage – Physiological , Chemical, Psychological effects of massage – Indication / Contra indication of Massage – Classification of the manipulation used massage and their specific uses in the human body – Stroking manipulation: Effleurage – Pressure manipulation: Petrissage Kneading (Finger, Kneading, Circular) ironing Skin Rolling – Percussion manipulation: Tapotement, Hacking, Clapping, Beating, Pounding, Slapping, Cupping, Poking, Shaking Manipulation, Deep massage.

Unit V – Sports Injuries Care, Treatment and Support

(12 Hours)

Principles pertaining to the prevention of Sports injuries – care and treatment of exposed and unexposed injuries in sports – Principles of apply cold and heat, infrared rays – Ultrasonic, Therapy – Short wave diathermy therapy. Principles and techniques of Strapping and Bandages.

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- Naro, C. L. (1967) Manual of Massage and, Movement, London: Febra and Febra Ltd.
- Rathbome, J.I. (1965) Corrective Physical education, London: W.B. Saunders & Co.
- Stafford and Kelly, (1968) Preventive and Corrective Physical Education, New York.

THEORY OF TRACK AND FIELD

Objectives:

1. To understand the evolution of Track & Field and its organisations.
2. To demonstrate knowledge of track events.
3. To demonstrate knowledge on field events.
4. Able to identify and train the athletes.
5. To be aware of rules and awards in athletics.

Outcome:

This course will provide an opportunity for students to establish or advance their knowledge on marking, equipments, official and their duties, rules and interpretations of athletics. Finally able to host athletics competition at different level.

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UNIT I – Introduction**- 12 hours**

History, origin and development of the Athletics (World, Asia, India, Tamil Nadu) -Notes on International and National Level Competition - Organization set-up (World, Asia, India and Tamil Nadu)-Athletics- Events in world and Olympic competitions – Protest - Jury of appeal – Category.

Unit II – Track Events**- 12 hours**

Track Events: Marking and layout Standard Track with Specifications - Official equipments with specifications - Techniques with suitable diagrams-Lead up activity, Drills and Minor games for each event- Rules and regulations with interpretations -List of officials and their duties and Official position with diagram & Score sheets.

Unit III – Field Events**- 12 hours**

Field events:Sector, circle and runway with Specifications - Official equipments with specifications - Techniques with suitable diagrams-Lead up activity, Drills and Minor games for each event- Rules and regulations with interpretations -List of officials and their duties and Official position with diagram & Score sheets – Combined event competitions.

Unit IV – Planning and Training**- 12 hours**

Qualities requirements for the events-Talents Identification -Warm-up and cool down exercise specific to the event-Means and methods of Developing Techniques, Preparation of Periodization-Application of Scientific principles -Assessment of Technique and fitness test - Nutritional recommendation - Injuries and rehabilitations methods

Unit V–General rules and Awards**- 12 hours**

General rules in Athletics - Best Athletes ever (World, Asia, India, Tamil Nadu) - Winners of World Meet, Olympic, Asia and India (Men & Women) - List down Competitions in Athletics (World, Asia, India) - List of Award winner - Arjuna, Dronachariya, Rajiv GandhiKerRatna and PadmaSri, Padma Bhusan etc., Opening and Closing Ceremony Protocol with detailed Explanation.

References:

- Joseph L. Rogers, (2000). *USA Track & Field coaching Manual*. USA: Human Kinetics
- American Sport Education Program. (2008). *Coaching Youth Successfully*. USA: Human Kinetics
- Bob Swope. (2006). *Teach'n Track & Field: Guide for Kids & Parents*. USA: AuthorHouse
- Gerry Carr. (1991). *Fundamentals of Track and Field (2nd Ed.,)*. USA: Human Kinetics
- Herald Muller and Wolfgang Ritzdon. (1995). *Run! Jump! Throw!: The Official IAAF Guide to Teaching Athletics*. Published by IAAF.
- *IAAF Competition Rules 2018-19*. Published by IAAF

PHYSICAL FITNESS AND WELLNESS

Objectives:

1. To understand the knowledge of Components of Health and Fitness.
2. To understand the importance of Nutrition and importance of physical activities.
3. To analysis the effect of aerobic training on cardio respiratory endurance
4. To analysis the effect of anaerobic training on cardio respiratory endurance.
5. To analysis and improve flexibility for healthy living

Outcome:

This course will provide an opportunity for students to understand the importance of health, regular physical activities, life style importance and nutrition support for health living

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Unit- I: Introduction

(12 hours)

Physical fitness and Wellness: Meaning and Definition, concept of physical fitness, Principles of physical fitness, Physiological principles involved in human movement. Components of Physical Fitness, Leisure time physical activity and identify opportunities in the community to participate in this activity, Current trends in fitness and conditioning, components of total health fitness and the relationship between physical activity and lifelong wellness – Loading components and procedure, Load for various fitness components.

Unit – II: Nutrition

(12 hours)

Nutrition: Meaning and Definition, Types and importance – Nutrients: Nutrition labeling information, Food Choices, Food Guide Pyramid, Influences on food choices - social, economic, cultural, food sources, Comparison of food values - Weight Management, proper practices to maintain, lose and gain body weight - Eating Disorders, Proper hydration, effects of performance enhancement drugs.

Unit – III: Aerobic Exercise

(12 hours)

Aerobic activities: Aerobic meaning and Definition, Cardio respiratory Endurance Training, proper movement forms, i.e., correct stride, arm movements, body alignment, proper warm-up, cool down, and stretching exercises, monitoring heart rates during activity - Assessment of cardio respiratory fitness and set goals to maintain or improve fitness levels, Cardio respiratory activities including i.e. power walking, pacer test, interval training, incline running, distance running, aerobics and circuits - effect of aerobic training on cardio respiratory endurance

Unit – IV: Anaerobic Exercise

(12 hours)

Anaerobic Activities: Anaerobic meaning and Definition, Resistance Training for Muscular Strength and Endurance; principles of resistance training, Safety techniques (spotting, proper body alignment, lifting techniques, spatial, awareness. and proper breathing techniques). Weight training principles and concepts; basic resistance exercises (including free hand exercises with weights, free weight exercise, weight machines, exercise bands and tubing, medicine balls, fit balls) – effect of anaerobic training on cardio respiratory endurance.

Unit – V: Flexibility Exercise

(12 hours)

Flexibility Training: Meaning and Definition, Relaxation Techniques and Core Training - Safety techniques (stretching protocol; breathing and relaxation techniques) types of flexibility exercises (i.e. dynamic, static), Develop basic competency in relaxation and breathing techniques, Pilates, Yoga, simplified physical exercises

REFERENCES:

- Allen W. Jackson et al, (1999). Physical Activity for Health and Fitness. USA: Human Kinetics.
- Bettina M. Jasper, (1999). Train your Brain. Meyer and Meyer sports: UK.
- David K. Miller & T. Earl Allen, (1989). Fitness, A life time commitment. Delhi: Surjeet Publication.
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- Edmund R. Burke, (1996). Home Fitness: Handbook. USA: Human Kinetics.
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- Jerrold S. Greenberg et al.,(2004). Physical Fitness and Wellness (3rd Ed.), USA: Human Kinetics.

- Joseph P. Winnick & Francis X. Short, (1999). Physical Fitness Training Guide. USA: Human Kinetics.
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- Warner W.K. Oeger & Sharon A. Hoeger, (1990). Fitness and Wellness, Morton Publishing Company.

Paper Sports Engineering

Objectives:

1. To facilitate in designing sports related instrumentation and measurement.
2. To improve the quality of research in creating sports equipments.
3. To analysis of sports performance using sports dynamics and Kinematics
4. Provide knowledge about Infrastructure and Maintenance
5. Improve knowledge of preventive, corrective and maintenance policy of record and register

Outcome:

This course will provide an opportunity for students to designing sports equipment, building facilities, analyzing athletic performance, regulating standards, ensuring safety in sports field.

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SPORTS ENGINEERING

Unit - I Introduction to sports engineering and Technology

(6 Hours)

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

(7 Hours)

Concept of internal force, axial force, shear force, bending movement, torsion, energy 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.

Unit- III Sports Dynamics

(7 Hours)

Introduction to Dynamics, Kinematics to particles – rectilinear and plane curvilinear motion coordinate system. Kinetics of particles – Newton's laws of Motion, Work, Energy, Impulse and momentum.

Unit- IV Infrastructure and Maintenance:

(10 Hours)

Sports Infrastructure- Gymnasium, Pavilion, Swimming Pool, Indoor Stadium, Out -door Stadium, Play Park, Academic Block, Administrative Block, Research Block, Library, Sports Hostels, 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 activity to be performed, Corridors and Gates for free movement of people, Emergency provisions of lighting, fire and exits, Eco-friendly outer surrounding. Maintenance, staff, financial consideration.

Unit – V Building Facility and life cycle costing

(6 Hours)

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. Basics of theoretical analysis of cost, total life cost concepts, maintenance costs, energy cost, capital cost and taxation.

REFERENCES:

- Franz K. F. et. al., (2013). *Handbook of Sports Technology and Engineering*. Routledge. Steve Hake, (1996). *The Engineering of Sport* (CRC Press, 1996).
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- Eric C. et al., (2010). *Editor Sports Facility Operations Management*. Routledge