

MANIPUR UNIVERSITY
CANCHIPUR: IMPHAL

Syllabus for Bachelor of Physical Education, Health Education and Sports
(Semester System)

Semester I :

MIL/General English

Elective 1- E101- Physical Education (Principles and Foundation of Physical Education) 75+25=100Marks

Elective 2- E102 Health Education (General Study of Health Education) 75+25=100Marks

Elective 3- E103 Sports (4 Games - Yoga, Athletics, Table Tennis and Football) 75+25=100Marks

Semester II :

MIL/General English

Elective 1- E201 - Physical Education (Fundamentals of Anatomy in Physical Education) 75+25=100Marks

Elective 2- E202 - Health Education (Community and Environmental Health) 75+25=100Marks

Elective 3- E203 Sports (4 Games - Softball, Lawn Tennis, Wrestling and Badminton) 75+25=100Marks

Semester III :

Regional Development

Elective 1- E301 - Physical Education (Psychology and Sociology in Physical Education) 75+25=100Marks

Elective 2- E302 - Health Education (Fundamentals of Food and Nutrition) 75+25=100Marks

Elective 3- E303 - Sports (4 Games - Gymnastics, Volleyball, Hockey and Handball) 75+25=100Marks

Semester IV :

Environmental Studies

Elective 1- E401 - Physical Education (Methods of teaching in Physical Education) 75+25=100Marks

Elective 2- E402 - Health Education (Fundamentals of Sports Medicine) 75+25=100Marks

Elective 3- E403 - Sports (4 Games - Kabaddi, Weightlifting, Judo and Sepak-Takraw) 75+25=100Marks

Semester V : (Hons. in Physical Education)

Hons.1- H501 - Physiology of Exercise in Physical Education 100Marks

Hons.2- H502 - Kinesiology and Bio-mechanics in Physical Education 100Marks

Hons.3- H503 - Practical 100Marks

Semester VI : (Hons. in Physical Education)

Hons.1- H601 - Test, measurement and evaluation in Physical Education 100Marks

Hons.2- H602 - Fundamentals of Scientific Training in Physical Education and sports 100Marks

Hons.3- H603 - Practical 100Marks

**SEMESTER-WISE SYLLABUS FOR B.Sc.
Physical Education, Health Education & Sports
Manipur University**

Semester- I

Elective- 1

**E101- Physical Education (Theory)
*Principles and Foundation of Physical Education***

Full Marks: 75

Unit- I

15 Marks

- 1.1. Meaning and Definition of Education and Physical Education
- 1.2. Scope of Physical Education.
- 1.3. Aim and objectives of Physical Education
- 1.4. Misconception of Physical Education.
- 1.5. Relationship of Physical Education with General Education
- 1.6. Physical Education as Art and Science.

Unit- II

15 Marks

- 2.1. Introduction and aspects of Philosophy
- 2.2. Nature and principles based on Philosophy and science
- 2.3. Significance of Philosophy in Physical Education
- 2.4. Philosophy of Physical Education
- 2.5. Principles of Physical Education
- 2.6. Needs of Philosophy in Physical Education.

Unit- III

15 Marks

- 3.1. Biological foundation of Physical Education
- 3.2. Activity - as the basis of life,
- 3.3. Growth and development,
- 3.4. Effect of Heredity and Environment in growth and development,
- 3.5 Individual differences,
- 3.6. Body types and Exercise as a daily necessity.

Unit- IV

15 Marks

- 4.1. Sports Associations,
- 4.2. Sports Awards in India- Rajiv Gandhi Khel Ratna, Dronacharya Award, Arjuna Award
- 4.3. Indian Olympic Association (IOA) -Objectives and functions,
- 4.4. Leading Institutions- LNUPE, HVPI, YMCA, SAI
- 4.5. Youth welfare programme - N.C.C., N.S.S. , Scouting & Guiding, Youths, Hostel, Youth festival and Nehru Yuvak Kendras.

Unit- V

15 Marks

- 5.1. Ancient Olympic Movement
- 5.2. Modern Olympic Games,
- 5.3. Commonwealth Games
- 5.4. Asian Games - aims and objectives.

Practical - E101PR**25 Marks**

1. Fundamental drills and marching.
2. Free hand exercises /Callisthenic Exercises
3. Light Apparatus Exercise
4. Study tour / Field work / Camping/Tracking

Reference Books

1. Buchar Charles A - Foundation of Physical Education - St. Louis the C.V. Mosby Company, London
2. Kamlesh and Sangral - Principles and History of Physical Education - Prakash and Brothers, Ludhiana.
3. Wakharkar D.G. - Manual of Physical Education in India - Pearl Publication Pvt. Ltd., Bombay.
4. Eraj Ahmed Khan "History of Physical Education" Patna:- Venus Publishers 1972.
5. M.L. Kamlesh & M.S. Sngral Principles and History of Physical Education, Ludhiana, Prakash Bothers 2001
6. Vidhya Ratna Taneja", Educational throught and Practice, New Delhi: Sterling Publisher Pvt. Ltd. 1976
7. Krishna Murthy V. and Ram Parammeswara: Educational Dimension of Physical Education (New Delhi, Sterling Publishers-1980
8. Nixon Engene D. Couson V. "An Introduction of Physical Education" Philadelphia, London. W.B. Lamders Company 1964.
9. Singh Ajmer and Gangopadhyay S.R. Edited trends and Practices in Physical Education in India Delhi Friends publications 1991.
10. Gangopadhyay SR (Edited) Physical Education Today and Tomorrow. Delhi Friends publication 1993.
11. Singh, A. et.al. Modern Text Book of Physical Education, Health and Sports, Kalyani Publisher.

Elective- 2
E102- Heath Education (Theory)
General Study of Health Education

Full Marks: 75

Unit- I

15 Marks

- 1.1. Meaning and Definition of Health and Health Education
- 1.2. Need, scope, aim and objectives of Health Education
- 1.3. Principles of Health Education , means and methods of Health Education,
- 1.4. Characteristics of Health Education.

Unit- II

15 Marks

- 2.1. Meaning, definition and characteristics of physical, mental, social and emotional health
- 2.2. Meaning and definition of Hygiene
- 2.3. Needs and importance of hygiene
- 2.4. Personal hygiene.

Unit- III

15 Marks

- 3.1. Meaning and definition of Safety Education
- 3.2. Needs and Importance of Safety Education
- 3.3. Principles of Safety Education
- 3.4. Safety in respect of residence, play field, equipment and dresses.
- 3.5. Safety on Road, Camps, Picnics, Tours, Fire, Flood, Hurricane, Thunder, Lightening and air-raids.

Unit- IV

15 Marks

- 4.1. Meaning, definition and importance of Rehabilitation.
- 4.2. Rehabilitation measure for beneficial effects.
- 4.3. Disciplines of Rehabilitation- Physical Medicine (Physiotherapy), Occupational Therapy, Speech Therapy.

Unit- V

15 Marks

- 5.1. Meaning and Definition of Massage
- 5.2. Types of massage
- 5.3. Effects and uses of various types of massage- stroking, pressure, percussion and shaking

Practical - E102PR

25 Marks

1. Demonstration of the Traffic Signals
2. Demonstration of types of Massage
3. Visit to a Community/Primary Health Centre.

Reference Books

1. Preventive and Social Medicine - J.E. Park and K.E. Park , Medical College, Jabalpur.
2. Health Education and Hygiene - Prof. B C Rai - Prakashan Kendra- Railway Crossing , Sitapur Road, Lucknow.
3. Health and Physical Education - Dr. S.K. Mangal , Prakash Bros., Educational Publishers, 546, Book Market, Ludhiana.

Semester- II

Elective- 1

E201- Physical Education (Theory)

Fundamentals of Anatomy & Physiology in Physical Education

Full Marks: 75

Unit- I 15 Marks

- 1.1. Meaning and definition of Anatomy and Physiology
- 1.2. Concept of Anatomy and Physiology
- 1.3. Importance of Anatomy and Physiology in Physical Education

Unit -II 15 Marks

- 2.1. Definition of cells, tissues, organs and systems
- 2.2. Microscopic structure of cells
- 2.3. Functions of cells, tissues, organs and systems.

Unit- III 15 Marks

- 3.1. Skeleton and Muscular System
- 3.2. General features of bone and types of bones and its functions.
Joints - Definition and classification of Joints.
- 3.3. Types, structure and functions of muscles.

Unit- IV 15 Marks

- 4.1. Cardio - Vascular and Respiratory System
- 4.2. Structure of heart and major blood vessels in the different parts of the body.
- 4.3. Cardiac cycle, blood pressure, Cardiac output and stroke volume.
Structure and function of lungs, mechanism of respiration.

Unit - V 15 Marks

- 5.1. Gastro-intestinal system (digestive system), Excretory system, Endocrine system, Reproductive system, Sensory organs
- 5.2. Structure and functions of digestive system and Excretory system,
- 5.3. Structure and functions of Endocrine system, function of liver and absorption of foods.

Practical – E201PR 25 Marks

1. Study of heart and breath sound by means of stethoscope
2. Study of radial pulse
3. Measurement of blood pressure
4. Measurement of breath holding capacity:
 - a) Negative breath holding capacity
 - b) Positive breath holding capacity
5. Measurement of Body Mass Index (BMI)

Reference Books

1. Pearce Evelyn C - Anatomy & Physiology for the nurses - Faber and Faber - Kolkata, Oxford University Press - Delhi, Bombay, Madras.

D. Ratan Vidya - Handbook of human physiology . Jaypee Brothers - Medical Publisher, Delhi.

Gyton A.C. - Functions of human body - London Saunders Company.

Bourne, Geoffery H. The Structure and Function of Muscles: London: Academic Press (1973)

Chaurasia B.D. Human Anatomy Regional and Applied (CBS Publisher and Distributors, (1979).

Guyton, Arthur C. Text book of Medical Physiology. (Philadelphia: W.B. Saunder Company, (1976).

- 5 James C. Clouch, Fundamental Human Anatomy (Lea & Febiger, Philadelphia, 1971).
6. Mathew, D.K. and Fox E.L., Physiological Basis of Physical Education and Athletics (Philadelphia: W.B. Saunders Company, (1976).
- 7 Morehouse, I.E. Miller, A.T. Physiology of Exercise. (St. Louis: The C.V. Mosby Company, (1976) 7th Edition.
8. Waruuda, Roger and Williams, Peter L. Gray's Anatomy (London: Longmans Group Ltd. (1973).
9. St. John's Ambulance, First-Aid By Red-Cross Society of India.

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Elective -2
E202- Health Education (Theory)
Community and Environmental Health

Full Marks: 75

Unit- I

15 Marks

- 1.1. Meaning, definition and importance of Community Health
- 1.2. Different levels of Health Services - Basic Health Service, Primary Health Service, Primary Health Centre.
- 1.3. Diseases: communicable and non-communicable diseases.
- 1.4. Mode of transmission of communicable diseases.
- 1.5. Prevention of - Malaria, Diptheria, Cholera, Diarrhoea, Dysentery, Tuberculosis and HIV (AIDS).

Unit- II

15 Marks

- 2.1. Meaning, definition and importance of environmental health
- 2.2. Environmental health condition in rural, urban and industrial areas.
- 2.3. Living Environment- home and neighborhood
- 2.4. Community services - Transportations, market and waste disposal.
- 2.5. Water – sources, purification and importance of water.

Unit- III

15 Marks

- 3.1. Meaning, definition and types of pollution
- 3.2. Harmful effects of - water pollution, noise pollution, air pollution
- 3.3. Important measures of pollution control
- 3.4. Meaning and definition of Radiation
- 3.5. Sources of radiation- natural and man-made radiation.

Unit- IV

15 Marks

- 4.1. School Health Service- Importance and aspects of school health service
- 4.2. School health programme
- 4.3. Medical examination services in school
- 4.4. Immunization - Meaning and types of immunization.
- 4.5. Mid-day meal - Meaning and importance of mid-day meal in school.

Unit- V

15 Marks

- 5.1. Health awareness programmes of College Youths
- 5.2. Students participation in health awareness programmes
- 5.3. Health problems of college youths
- 5.4. Use of intoxicated substances -tobacco, alcohol, drugs etc., their harmful effects and preventive measures
- 5.5. Mental health problems and its causes.

Practical – E202PR

25 Marks

1. Project Work - Health survey to a specific area
2. Health service camp in school /college campus
3. Visit to a community/primary health centre

Reference Books

1. Preventive and Social Medicine - J.E. Park and K.E. Park , Medical College, Jabalpur.

- 2 - Health Education and Hygiene - Prof. B C Rai - Prakashan Kendra - Railway Crossing Sitapur Road, Lucknow.
Health and Physical Education - Dr. S.K. Mangal , Prakash Bros., Educational Publishers , 546 Book Market, Ludhiana.

Semester III

Elective- 1

E301 - Physical Education (Theory)

Psychology and Sociology in Physical Education

Full Marks: 75

Unit-I **15 Marks**

- 1.1. Meaning, definition and nature of Psychology and Sports Psychology
- 1.2. Scope of Psychology in Physical Education.
- 1.3. Learning - meaning and definition of Learning
- 1.4. Principles of learning, factors affecting learning and transfer of training
- 1.5. Motor learning- meaning, definition, stages and development

Unit-II **15 Marks**

- 2.1. Personality – Meaning, definition and types of personality
- 2.2. Importance of personality in Physical Education and sports
- 2.3. Emotion – Meaning, definition and role of emotion in Physical Education and sports
- 2.4. Motivation – Meaning, definition and role of motivation in Physical education and sports

Unit-III **15 Marks**

- 3.1. Meaning, definition and nature of Sociology and Sports Sociology.
- 3.2. Importance and scope of Sociology, in Physical education and Sports
- 3.3. Society, Community, Association, Institutions, Customs
- 3.4. Man as a Social Animal.

Unit-IV **15 Marks**

- 4.1. Social institutions and socialization
- 4.2. Social significance of sports
- 4.3. Sports as an Institutionalizing agency
- 4.4. Physical Education and Sports as a Social phenomenon

Unit-V **15 Marks**

- 5.1. Importance of Sports Psychology for Physical Educationists, coaches and players
- 5.2. Socio-psychological aspects of sports - the social group, development of group mind through sports.
- 5.3. Sports for better International understanding, co-operation and group cohesion in Sports team.
- 5.4. Relationship between family and sport participation

Practical – E202PR **25 Marks**

- 1. Practical performance of :
 - a) Perception
 - b) Concentration
 - c) Memory

2. Measurement of :
- a) Breack's sociometric test of status.
 - b) Cowell's personal distance scale
 - c) Wear's attitude scale with equivalent forms.

Reference Books

1. Kamlesh ML. - Psychology in Physical Education and Sports - Metropolitan Book Co(P) Ltd. New Delhi.
2. Suinn R.N. - Psychology in sports - Surjit Singh Publication - Delhi.
3. Puni AT - Sports Psychology - NIS, Chandigarh.
4. Kana JS - Psychological aspects of Physical Education & Sports - Rout Leage, Kejanpaul, London.
5. Frost and Ranbon - Psychological concept applied to Physical education and coaching Masseurhusetts.
6. Gates, A.I. at. al. Educational Psychology (Macmillan Co. N.Y.,)
7. Bhatia and Bhatia Educational Psychology
8. Lyer, Mac, at. el. Society, London Mc Millan & Co.
9. Ogburu William F. and Mimkaff Meyer F.H., Book of Sociology, New Delhi, Eurasia Publishing House Ltd.

Elective-2
E302- Health Education (Theory)
Fundamentals of Food and Nutrition

Full Mark: 75

Unit-I **15 Marks**

- 1.1. Meaning and definition of food and nutrition
- 1.2. Types of Food
- 1.3. Importance of food and nutrition
- 1.4. Principles of nutrition

Unit-II **15 Marks**

- 2.1. Carbohydrate and fat, and their sources
- 2.2. Simple carbohydrates, complex carbohydrates and dietary fiber and their importance
- 2.3. Metabolizing carbohydrates - High insulin levels, low blood sugar, and obesity.
- 2.4. Importance and varieties of fat - visible fat and invisible fat.

Unit-III **15 Marks**

- 3.1. Protein and its sources
- 3.2. Importance and functions of protein
- 3.3. Components of protein - essential and nonessential amino acids
- 3.4. Importance of water, causes of loss of water from the body.

Unit-IV **15 Marks**

- 4.1. Vitamins and its sources
- 4.2. Importance and needs of Vitamins
- 4.3. Varieties of vitamins and their food sources
- 4.4. Free Radicals and Antioxidants, importance of antioxidants.

Unit-V **15 Marks**

- 5.1. Minerals, importance of Minerals
- 5.2. Varieties of minerals and food sources of minerals
- 5.3. Balance Diet - Meaning and importance of balanced diet
- 5.4. Balance diet for different age groups.

Practical – E202PR **25 Marks**

1. Identification of food sources of different vitamins and minerals.
2. Group discussion on the diseases caused by food habit.
3. Preparation of balanced diet chart

Reference Books

1. Preventive and Social Medicine - J.E. Park and K.E. Park , Medical College, Jabalpur.
2. Essentials of Exercise Physiology - Larry G. Shaver - Surjeet Publication, Post Box No. 2157, 7- K , Kolhapur Road, Kamlanagar, Delhi.
3. Nutrition for a longer life - Robert Crayhon, M.S Magna Publishing Company Ltd. Mumbai.

Semester IV

Elective- 1 E401 - Physical Education (Theory) *Methods in Physical Education & Sports*

Full Mark: 75

Unit- I **15 marks**

- 1.1. Meaning and scope of teaching methods in Physical Education ,
- 1.2. Principles of teaching, factors which influenced methods of teaching
- 1.3. Types of Methods - Lecture method, Command method, Project method, Discussion method, Demonstration and imitation method.

Unit- II **15 marks**

- 2.1. Class management - Principles of class management, Steps in class management.
- 2.2. Procedure of teaching in Physical Activity - Team Games, Division Team Games,
- 2.3. Principles related to the teaching of team games.

Unit- III **15 marks**

- 3.1. Individual Sports - Calisthenics, Gymnastics, Rhythmics, Combative
- 3.2. Principles related to the teaching of Individual Sports.
- 3.3. Lesson planning – Preparation, principles, types, Characteristics, construction, and kinds of lesson plan.

Unit- IV **15 marks**

- 4.1. Competition : Types of competition, drawing of fixture
- 4.2. Leadership: Qualities of a good leader, types of leadership, Teacher's leadership, Student's leadership.
- 4.3. Supervision and its types in Physical Education.

Unit- V **15 marks**

- 5.1. Intramural & Extramural competition - Objectives, method of organising Intramural and Extramural competition
- 5.2. Sports Meet - Types of sports meet, organizing of sports meet.
- 5.3. Classification of Students - Benefits of students' classification.

Practical – E401PR **25 Marks**

1. Teaching ability test -
Preparation of lesson plan :
 - a) General lesson plan (5 lessons for general activities)
 - b) Specific lesson plan (5 lessons for games and sports)
2. Study tour - Visit to an Institute of Physical Education outside the state.

Reference Books

1. Methods in Physical Education - Kamlesh & Sangral, Prakash Brothers, Ludhiana.
2. Methods in Physical Education - C.T. and S.H. - Karaikudi-3.
3. Bhatia and Bhatia. The Principles and methods of Teaching (Doaba House : New Delhi), .

4. Kochar, S.K. Methods & Techniques of Teaching. (Sterling Publishers Pvt. Ltd, Julundas), .
5. Kozman, Cassidy and Jackson. Methods in Physical Education (W.B. Saunders company, Philadelphia and London), .
6. Bucher, Charles A. Methods and materials in Physical Education and Recreation (The C.V. Mosloy company, U.S.A.).

Elective -2
E402- Health Education (Theory)
Fundamentals of Sports Medicine

Full Mark: 75

Unit- I

15 Marks

- 1.1. Meaning, definition and importance of sports medicine
- 1.2. Meaning and definition of drug
- 1.3. Drugs, drug abuse and drug dependence
- 1.4. Ergogenic Aids in Exercise and sports performance - Amphetamines, Anabolic steroids, alcohol, alkalines, blood doping, caffeine.

Unit- II

15 Marks

- 2.1. Diet and performance - Carbohydrate, carbohydrate loading, fat and protein
- 2.2. Common sports injuries and their First Aid treatments -
 - a) Fracture - types of fracture and their sign and symptoms
 - b) Sprain and strain injuries
 - c) Dislocation of joints

Unit- III

15 Marks

- 3.1. Meaning, definition and classification of Wounds
- 3.2. Hemorrhage and its causes
- 3.3. Control of hemorrhage by direct and indirect pressure
- 3.4. Meaning, definition and different types of sports injuries

Unit- IV

15 Marks

- 4.1. Transportation of different injured person
- 4.2. Meaning and definition of Artificial respiration
- 4.3. Methods of artificial respiration - Holger - Nielson Method, Schaefer's Method

Unit- V

15 Marks

- 5.1. Meaning and definition of Dressing and bandages
- 5.2. Importance of dressing and bandages
- 5.3. Application of bandages to different injuries.
- 5.4. Types of knots of bandages - Triangular bandage, Roller bandage and their knots.

Practical – E401PR

25 Marks

1. Demonstration of application of different types of bandages and their knots.
2. Demonstration of different methods of transport of injured person.
3. Demonstration of artificial respiration.
4. Demonstration of control of haemorrhage by direct and indirect pressure.

Reference Books:

1. First Aid to the injured - St. John Ambulance Association (India) Publication - Red Cross Road, New Delhi.
2. Preventive and Social Medicine - J.E. Park and K.E. Park, Medical College, Jabalpur.
3. Essentials of Exercise Physiology - Larry G. Shaver - Surjeet Publication, Post Box No. 2157, 7- K, Kolhapur Road, Kamlanagar, Delhi.

3. Sports injuries and athletic problems - Morris B. Mellion , MD, Surjeet Publication, Post Box No. 2157, 7- K , Kolhapur Road, Kamlanagar, Delhi.
4. Bourne, Geoffery H. The Structure and Function of Muscles: London: Academic Press (1973).
5. Chaurasia B.D. Human Anatomy Regional and Applied (CBS Publisher and Distributors, 1979).
6. Guybon, Arthur C. Text book of Medical Physiology. (Philadelphia: W.B. Saunder Company, (1976).

Semester V

Honours -1

H501 - Physical Education (Theory) *Exercise Physiology in Physical Education*

Full Marks: 100

Unit- I

20 Marks

- 1.1. Meaning, Nature and scope of Exercise Physiology
- 1.2. Effect of Exercise on various system of the body
 - a) Heart and exercise
 - b) Respiration and exercise
 - c) Exercise and metabolism

Unit- II

20 Marks

- 2.1. Effect of Exercise on skeletal muscles:
 - a) Gross and microscopic structure and types of muscle fiber
 - b) Structure of myofibril and contractile mechanism (sliding filament theory).
- 2.2. Effect of Exercise on the property of voluntary muscles :
 - a) Extensibility and elasticity
 - b) Irritability (excitability)
 - c) Contractility
 - d) Muscle tone

Unit- III

20 Marks

- 3.1. Changes in muscle during Exercise :
 - a) Chemical changes.
 - b) Thermal changes.
 - c) Electrical changes.
 - d) Mechanical changes.
- 3.2. Physiology of muscular movement:
 - a) Muscle twitch and its myogram.
 - b) Temperature effects upon muscle contraction.
 - c) All or none law.
 - d) Electrical phenomena and electromyography
 - e) Mechanical factors of muscular activity.

Unit- IV

20 Marks

- 4.1. Nervous control of muscular movement :
 - a) Basic structures and functions of the nerve.
 - b) The nerve impulse, the neuromuscular junction, muscle sense organ, Proprioceptors, The muscle spindle, Golgi Tendon Organs, Joint receptors, Voluntary control of motor function.
- 4.1. The reflex arc and Involuntary movement - intrasegmental and suprasegmental reflexes.

Unit- V

20 Marks

- 5.1. Energy for muscular work :

- Introduction, definition of energy, Biological energy cycle, Adenosine Triphosphate (ATP), Sources of ATP, Aerobic and anaerobic systems during rest and exercise.
- 5.2. Measurement of energy, Work and power - Direct and Indirect measurement of energy, Oxygen consumption, Respiratory exchange ratio (R) - Carbohydrate, fat and protein.
- 5.3. a) Anaerobic sources of Energy - Anaerobic Metabolism, Anaerobic Glycolysis (Lactic acid system).
- b) Aerobic sources of Energy - Aerobic metabolism, the krebs cycle, the electron transfer system.

References Books

1. Essential of Exercise Physiology - Larry G. Shaver - Surjit Publication - Post box No. 2157- 7-K, Kolhapur Road, Kamalanagar, Delhi.
2. Physiology of exercise for Physical Education and Athletics - Herbert A . de. Vries. Phd- Staples Press- London.
3. The Physiological basis of Physical Education and Athletics - Edward L. Fox, Richard W. Bowers, Merle L. Foss - Web - Wm. C. Brown Publishers, Dubuque, IOWA, ISBN.- 0-697-05995-2
4. Pearce, E.C. Anatomy and Physiology for nurses (Faber Ltd. : London)
5. Penot, J.W. Anatomy for Students and Teachers of Physical Education (Edward Arnold and Co. : London,)
6. Guyton, A.C. Function of the Human Body (W.B. Saunders Co., London)
7. Srivastava, and et.al. Text book of Practical Physiology (Scientific BookAgency; Calcutta)
8. Maxhouse and Miller Physiology of Exercise (The C.V. Mosby Company, St. Louis)
9. Karpovich and Sinuer Physiology of Muscular Activity (W.B. Saunders Company, London)
10. Mathiew, D.K. and Fox, E.L. Physiological basis of Physical Education and Athletics (W.B. Saunders Co., Philadelphia, 1976)

Honours -2
H502 - Physical Education (Theory)
Kinesiology and Bio-mechanics in Physical Education

Full Marks: 100

Unit- I

20 Marks

- 1.1. Introduction, meaning, aim and objectives of Kinesiology in Physical Education.
- 1.2. Scope and needs of Kinesiology in Physical Education.
- 1.3. Fundamental concepts - Centre of gravity, line of gravity, planes and axis of the motion.
- 1.4. Fundamentals of starting position of movements, terminology of fundamental movements around the joints.

Unit- II

20 Marks

- 2.1. Analysis of fundamental movements :
Walking, Running, Jumping and Throwing.
- 2.2. Direction and angle of pull and its significance.
- 2.3. Structure of Motor Actions - Structure of cyclic and a cyclic motor action and movement combinations
- 2.4. Fundamentals of relationship for different phases of motor action.
- 2.5. Motor movements - Movement rhythm, movement coupling, movement flow, and movement precision.

Unit- III

20 Marks

- 3.1. Introduction, meaning, aim and objectives and importance of Bio-mechanics in Physical Education.
- 3.2. Motion - Laws of motion, types of motion,
- 3.3. Projectile motion and their importance in games and sports.

Unit- IV

20 Marks

- 4.1. Linear and angular Kinematics - Speed, velocity, acceleration, uniformly accelerated motion, relationship between linear and angular motion.
- 4.2. Linear and Angular kinematics - Mass, force, work, power, energy, momentum, friction, movement of inertia.
- 4.3. Conservation of momentum, transfer of momentum.

Unit- V

20 Marks

- 5.1. Lever : Types of lever and their applications
- 5.2. Equilibrium and stability: types and principles
- 5.2. Bio-mechanical principles - Principles of initial force, principles of optimum path of acceleration, principle of conservation of momentum and principles of counter action.

Reference Book

1. Kinesiology - Scientific basis of human motion - Katharine F. Wells, Ph.D., Kathryn Luttgens, Ph.D. - Saunders College, Philadelphia.
2. Scientific Principles of Coaching - Dunn, Prentice Hall, Inc. New Jersey.

3. Bio-mechanics of sports - Miller and Nelson, Log and Fahier, Philadelphia.
4. Anatomic Kinesiology - Legan and Mckinney - Inc. Brown Company.
5. The anatomical and mechanical basis of human motion - May and Daij - Prentice Hall, Inc. New York.
6. Broer, M.R. Efficiency of Human Movement (Philadelphia : W.B. SaundersCo.,)
7. Bunn, John W. Scientific Principles of Coaching (Engle wood cliffs : N.J. Prentice Hall Inc.,
8. Duvall, E.N. Kinesiology (Engle wood cliffs : N.J. Prentice Hall Inc.,)
9. Rasch and Burke, Kinesiology and Applied Anatomy (Philadelphia : Lea and Fibger
10. Scott, M. G. Analysis of Human Motion, New York.

Honours -3
H503 - Physical Education (Practical)

Full Marks: 100

1. To study the effect of exercise on pulse rate by means of :
 - a) Havart step-up test
 - b) Lousiana state University test (LSU - Test)
2. Measurement of vital capacity
3. To study the knee joint reflex action
4. To study the electrical apparatus used for stimulating excitable tissue and recording muscular contraction.
5. To draw the simple muscle curve.
6. To demonstrate the effect of repeated stimuli.
7. To demonstrate the effect of fatigue on simple muscle nerve preparation.
8. To demonstrate the effect of load on muscle contraction.
9. To demonstrate the effect of temperature on simple muscle nerve preparation.
10. To demonstrate the complete and incpöplete tetanus.
11. Measurement of kinesthetic perception :
 - a) The shuffle broad distance perception test
 - b) Kinesthetic obstacle test.
12. Identification of bone :
 - a) Scapula - Coastal and dorsal side
 - b) Anterior and posterior of humerous, radius, ulna, femur, tibia and fibela.
13. Identification of muscle - Biceps, triceps, deltoide, femoris and gastrocnemius muscle.
14. Demonstration of liver - First class, Second class and Third class liver.
15. Demonstration of a cyclic and cyclic motor movements and their combination.

Semester VI
Honours -1
H601 - Physical Education (Theory)
Test, Measurement and Evaluation in Physical Education

Full Marks: 100

Unit- I **20 Marks**

- 1.1. Introduction - Test, Measurement and Evaluation in Physical education.
- 1.2. Importance of Test, Measurement and Evaluation in Physical Education.
- 1.3. Principles of Test, Measurement and Evaluation

Unit- II **20 Marks**

- 2.1. Technical Standards / Criteria for selecting a test :
 - Validity
 - Reliability
 - Objectivity
 - Precision
 - Norms
- 2.2. Concepts and Components of :
 - General motor ability
 - Motor Educability
 - Motor fitness

Unit- III **20 Marks**

- 3.1. Basic Statistics:
 Meaning, Definition, Characteristics and Importance of statistics in Physical Education
- 3.2. Measures of central tendency - Mean, Median, Mode
- 3.3. Measures of variability, Range, Standard Deviation, Quartile Deviation.

Unit- IV **20 Marks**

- 4.1. Correlation:
 Meaning of correlation, computing correlation, Interpretation of coefficients of correlation.
- 4.2. Functions of measurement :
 Status, Comparison, Criteria of test, Validity of test, Economy of test.

Unit- V **20 Marks**

- 5.1. Basic application of computer :
 Meaning, types, characteristics and importance of computer,
- 5.2. Software, hardware, operating system, MS Words, MS Excel, PowerPoint, Internet and its importance,
- 5.3. Websites, web browser, search engine.

Reference Books

1. Ted. A and Andrew S., "Measurement for evaluation in Phy. Edu. And exercise science." Sixth edition (Newyork WC3 McGraw-Hill), 1999.
2. Barrow, H.M. and R. McGee (1971), "A Practical Approach to measurement in Physical Education." Lea and Fabiger, Philadelphia, U.S.A.
3. Baumartnes, T.A. and A.S. Jackson (1991) "Measurement for Evaluation in Physical Education and Exercise Science. Wm. C. Brown publishers, University of Horesten, U.S.A.
4. Bosco, J.S. W.F. Gustafson (1983) , "Measurement and Evaluation in Physical Education, Fitness and sport, Practie Hall, INC, Englwood cliffs, New Jersy, U.S.A.
5. Claste, H.H., and D.H. Claske (1987), "Application of measurement to physical Education. "Practice Hal INC., Englewood Cliff, New Jersey, U.S.A.
6. Hasted, D.N. and A.C. Lacy (1989), "Measurement and Evaluation in contemporary Physical Education. Gorsuch Scasisbrick, Scottsdale, AZ, U.S.A.
7. Johnson, B.L. and J.K. Nelson (1982), "Practical measurement for Evaluation in Physical Education, 3rd Ed. Subject Publications, Delhi.
8. Kansal, D.K. (1996), "Evaluation and Talent Selection in sports and Physical Education." DVS Publications, New Delhi (INDIA).
9. Kansal D.K. (1996), "Test and Measurement in sports and physical education." DVS Publications, New Delhi (INDIA)
10. Mathews, D.K. (1973), "Measurement in Physical Education." 4th Ed. W.B. Sauders Company, Philadelphia, U.S.A.
11. Phillips, D.A. and J.E. Harnak (1979), "Mezurement and Evaluation in Physical Education." Wiley, New York, U.S.A.

Honours -2
H602 - Physical Education (Theory)
Fundamentals of Scientific Training in Physical Education & Sports
Full Marks: 100

20 Marks

Unit- I

- 1.1. Aim, task, characteristics and principles of sports training.
- 1.2. Important features of training load - Intensity, Density, Duration and Frequency.

20 Marks

Unit- II

- 2.1. Principles of training load, relationship between load and adaptation, condition of adaptation.
- 2.2. Judgment of load - Objectives and subjective means of judgment of load, over load, cause of over load,
- 2.3. Symptoms of overload and tackling of overload.

20 Marks

Unit- III

- 3.1. Development of Motor Components:
 - a) Strength - Forms of strength, strength training means & methods.
 - b) Endurance - Forms of endurance, training means and methods of endurance.
 - c) Speed - Form of speed, speed training, training means and methods of speed.
 - d) Flexibility - Form of flexibility, methods of development of flexibility.
 - e) Coordinative ability - Form of coordinative ability, methods of development of coordinative ability.

Unit- IV

- 4.1. Techniques -
Aim and characteristics of technique, techniques in sports, stages of technical development, causes and correction of faults.
- 4.2. Tactics -
Tactics, Principles of Tactical preparation, methods of tactical development.
- 4.3. Planning for competition - Main, build up competition, competition frequency

20 Marks

Unit- V

- 5.1. Training Plans - Long term and short term plans,
- 5.2. Periodization (Single, double and triple) Cyclic process of training,
- 5.3. Psychological aspects of short term and long term training process in sports.
- 5.4. Motor development and its implication in relation to different sex and groups.

Reference Books

1. Dick W. Frank, Sports Training Principles 4th ed. (London : A&C Black Ltd.), 2002.
2. Harre, D. Principles of Sports Training (Berlin : Sport Veulag), 1982.
4. Singh, Hardayal. Science of Sports Training (New Delhi : DVS Publications), 1991.
5. Uppal, A.K. Principles of Sports Training, (Delhi : Friends Publication) 2001.

Honours - 3
HI603 - Physical Education (Practical)

Full Marks:100

1. Measurement of Flexibility :
 - a) Modified Sit-and-Reach Test.
 - b) Bridge-up Test
 - c) Trunk-and-Neck Extension Test
 - d) Front-to-Rear Split Test
 - e) Shoulder-and-Wrist Elevation Test.

2. Measurement of strength :
 - a) Leg strength test
 - b) Back strength test
 - c) Hand grip strength test

3. Measurement of muscular endurance :
 - a) Flexed - Arm Hang Chin-up Test
 - b) Half-Squat Jump Test
 - c) Push-Up Test
 - d) Sit-up test

4. Measurement of cardio-vascular condition :
 - a) Twelve minute and nine minute Run-walk Test
 - b) LSU Step Test
 - c) Harvard step test

5. Measurement of motor performance :
 - i) Measurement of power
 - a) Standing Broad or long jump.
 - b) Two-Hand Medicine ball put
 - c) Arm pull-up test

 - ii) Measurement of Agility :
 - a) Side Step Test
 - b) Shuttle Run Test
 - c) Illinois Agility Test

 - iii) Measurement of Balance :
 - a) Stork Stand Test
 - b) Bass Stick Test
 - c) Nelson Balance Beam Test

 - iv) Measurement of Reaction time :
 - a) The Nelson Hand Reaction Test
 - b) The Nelson Foot Reaction Test
 - c) The Nelson Speed of Hand Movement Test

 - v) Measurement of Speed :
 - a) 30 m., 40 m. , 50 m. sprint
 - b) 5 sec., 6 sec., 8 sec. run

c) 20 m. shuttle run (one time)

6. Sports Skill Test :

- a) Johnson Basketball Ability test
- b) McDonald Soccer Test
- c) Brady Volleyball Test
- d) Lock Hart and McPherson Badminton Test
- e) Harban's Hockey Test

Reference Books

1. Ted. A and Andrew S., "Measurement for evaluation in Phy. Edu. And exercise science." Sixth edition (Newyork WCB Mcgraw-Hill), 1999.
2. Barrow, H.M. and R. McGee (1971), "A Practical Approach to measurement in Physical Education." Lea and Fabiger, Philadelphia, U.S.A.
3. Baumartnes, T.A. and A.S. Jackson (1991) "Measurement for Evaluation in Physical Education and Exercise Science. Wm. C. Brown publishers, University of Horesten, U.S.A.
4. Bosco, J.S. W.F. Gustafson (1983) , "Measurement and Evaluation in Physical Education, Fitness and sport, Practie Hall, INC, Engwood cliffs, New Jersy, U.S.A.
5. Claste, H.H., and D.H. Claske (1987), "Application of measurement to physical Education. "Practice Hal INC., Englewood Cliff, New Jersey, U.S.A.
6. Hašted, D.N. and A.C. Lacy (1989), "Measurement and Evaluation in contemporary Physical Education. Gorsuch Scasisbrick, Scottsdale, AZ, U.S.A.
7. Johnson, B.L. and J.K. Nelson (1982), "Practical measurement for Evaluation in Physical Education, 3rd Ed. Subject Publications, Delhi.
8. Kansal, D.K. (1996), "Evaluation and Talent Selection in sports and Physical Education." DVS Publications, New Delhi (INDIA).
9. Kansal D.K. (1996), "Test and Measurement in sports and physical education." DVS Publications, New Delhi (INDIA)
10. Mathews, D.K. (1973), "Measurement in Physical Education." 4th Ed. W.B. Sauders Company, Philadelphia, U.S.A.
11. Phillips, D.A. and J.E. Harnak (1979), "Measurement and Evaluation in Physical Education." Wiley, New York, U.S.A.

BACHELOR OF SCIENCE (B.Sc.)

SEMESTER - I

B.S.-7103

SPORTS

Theory of Games & Sports

75 Marks

	Unit-1	15
1.1	History of the game/sports.	
1.2	Organization (Working Federation)	
<hr/>		
	Unit-2	15
2.1	Various systems of the play (if applicable)	
2.2	Rules and their interpretation	
2.3	Equipment and Play field	
<hr/>		
	Unit-3	15
3.1	Special Applied Scientific Principles for the improvement of skill and performance of the games/sports.	
<hr/>		
	Unit-4	
4.1	Physiology of Warm-up -General and Specific Warm-up.	15
<hr/>		
	Unit-5	
5.1	Officiating and Coaching:- -Duties of good Coach, qualities and qualification of a Coach,	15
5.2	Methods of Officiating.	

N. B.:-

For teaching the theory and practical papers in yoga shall be based on the syllabus of the yoga.

**BACHELOR OF SCIENCE (B.Sc.)
SEMESTER-1**

SPORTS

YOGA

Theory

75+25=100 Marks

Unit-1

15

1.1 Meaning, definition and misconception of Yoga.

1.2

Unit-2

20

2.1 Classification of Yogic practice-Asanas, Pranayamas, Bandhas & Mudras, Kriyas and Meditations

2.2 Principles of Yogic practice.

General and specific principles of Asanas, Pranayamas, Bandhas & Mudras, Kriyas and Meditation.

Unit-3

20

3.1 Pranayama: Meaning & definition of Pranayama, Stages of practice of Pranayamas.

3.2 Techniques, useful hints and benefits of the following of Pranayamas -

- i) Suryabodan, ii) Ujayi iii) Bhastrika
iv) Sheetal and v) Sheatkari.

Unit-4

20

4.1 Techniques, useful hints and benefits of the following Asanas ;

- | | | |
|---------------------------|------------------|-----------------------|
| i) Swastikasa | ii) Padmasana | iii) Vajarasana |
| iv) Bhujangasana | v) Dhanurasana | vi) Salabhasana |
| vii) Viparitamarni | viii) Halasana | ix) Sarvangasana |
| x) Matsyasana | xi) Vriksasana | xii) Paschimotanasana |
| xiii) Ardhamatsyendrasana | xiii) Vriksasana | xiv) Makrusana |
| xv) Shrishasana | xvi) Mayurasana | |

Practical E103PR

25

1. Practical Demonstration of Kriyas - Dhuti and Neti
2. Practical Demonstration of Pranayamas
3. Practical Demonstration of Yoga Asanas.

Reference Books and Journals:

1. Iyengar, KS-*Light on Yoga-London* : George Allon and Unwrn Ltd.
(Annexboustive list of Aganas)
2. Kuvalayananda, Swamy, *Asanas Bombay* : Popular Prakashan.
3. Kuvalayananda, Swamy, *Pranayama - Part 1 and 2 Bombay*; popular Prakashan.
(Scientific explanations for asanas and Pranayama)
4. Kuralayananda, Swamy Yogic Sang Vyayam, Lonavle :
Kaivalyadham (Fundamental Positions for asanas).
5. Yogeshwar, Text Book of Yoga Madras : Yoga Centre.
6. Wood, Eranest, Yoga, Pelican Books, Inc. (*General Introduction to traditional practices in Yoga*)
7. Yoga Mimansa Lonavla; Kaivalyadham.
8. SNIPES Journal Patiala's NEWS.

**BACHELOR OF SCIENCE (B.Sc.)
SEMESTER-I**

SPORTS

ATHLETICS

Practical

25 Marks

1. **Sprints:**
 - a) Correct running style emplacing on proper body position
 - b) Crouch-start - Fixing of the starting blocks, getting off the block.
 - c) Practice of starts with blocks using proper command.
 - d) Curve Running.
2. **Middle distance Running:**
 - a) Correct running style emphasizing on proper body position and foot placement.
 - b) Practice of standing start.
3. **Long Distance Running:**
 - a) Correct running style emphasizing on proper body position and foot placement
 - b) Proper arm and leg action
 - c) Running Tactics
4. **Relay Race:**
 - a) Style of Baton Exchange (Visual & Non-Visual)
 - b) Fixing up runners for different rally race
5. **Hurdles:**
 - a) Swinging leg action
 - b) Training leg action
 - c) Clearance of Hurdle Emphasizing on proper trunk, position and arm action.
 - d) Development, rhythm from start to first hurdle and between hurdles.
6. **Long Jump:**
 - a) Approach Run
 - b) Take off
 - c) Flying phase (Hang and running in the Air Styles)
 - d) Landing

7. **High Jump:**

- a) Approach Run
- b) Take off
- c) Flying phase (Straddle Roll and Fosbury Flop)

8. **Triple Jump:**

- a) Approach Run, hop step and jump
- b) Take off and landing for hop
- c) Flying Phase
- d) Landing.

9. **Pole Vault:**

- a) Pole grip and carry
- b) Pole Plant
- c) Take off
- d) Rock Lack
- e) Pull up
- f) Push up
- g) Bar clearance
- h) Landing

10. **Shot Put:**

- a) Hand Hold
- b) Placement of shot
- c) Initial Stance
- d) Glide
- e) Delivery Stance
- f) Delivery Action
- g) Reverse.

11. **Javelin Throw:**

- a) Grip
- b) Carry
- c) Approach run
- d) Last five stride rhythm including impulses stride
- e) Delivery stance

12. **Hammer Throw:**

- a) Grip
- b) Initial Stance
- c) Preliminary swings
- d) Transition from swings to turns
- e) Turns
- f) Delivery stance
- g) Delivery Action
- h) Reverse

Reference books

1. Dyoon, Geoffray, G.H. *The Mechanics of Athletics London* :
University of London Press Ltd. 1962
2. Doherty, J. Manneth, *Modern Track and Field Englewood cliffs* :
N.J. Prantice Hall Inc.
3. Hooks, Gens, *Application of right Training to Athletics, Enlewood
Cliffs* : N.J. Prenties Hall Inc. 1962
4. Malhotra, Ashok Khumar A Guide to be an Athlete. Krishna
Publication Books New Delhi.
5. Hohan, V.M. *Athletics for Beginners*, Metropolitan Books New Delhi.
6. Robinson, Johson, James and Hirschi, *Modern Technique of Track and
Field, Lodon Henry Kimpton Publishers 1974*
7. KN. O. Bosen *Track and Field Fundamental Techniques NIS
Publications, Patiala.*
8. Pradiwala J. *Athletics.*

BACHELOR OF SCIENCE (B.Sc.)

SEMESTER-1

SPORTS

TABLE TENNIS

PRACTICAL

25 Marks

Fundamentals skills:

1. Stance and Position and Footwork
2. Grip-
 - Shake hand Grip
 - Penholder Grip
3. **Service:**
 - High Toss
 - Side Spin
 - Forehand (Forward and Backward Spin)
 - Backhand (Forward and Backward Spin)
4. **Strokes : (Forward and Backward):**
 - Chop
 - Drive (with top spin)
 - Push
 - Balloon
 - Flicks hit
 - Drop-Shot
 - Half- volley
 - Loop-drive
 - Smash
5. Tactics
 - Attacking, defensive in single, double and mixed double

Reference books:

1. Sklorz, Martin, Spolt Table Tennis, Yorkshire : EP. Ltd. East Adeley Wakefield, 193.
2. Varner Margeret and Hanrisam I. Refford, Brown Physical Education Activities Service, Table Tennis, Iowa : W.M.C. Brown Company, Dubuque.
3. Myers Harold, Table-Tennis, London Faber and Faber Ltd. 3 Queen Square, 1977.
4. Barna & Victor, Your Book of Table-Tennis, London Faber and Faber Ltd. 3 Queen Square, 1971

BACHELOR OF SCIENCE (B.Sc.)

SEMESTER - I

SPORTS

**FOOTBALL
PRACTICAL**

25 Marks

Fundamental Skill

- a) Passing
- b) Kicking
- c) Trapping
- d) Heading
- e) Dribbling
- f) Goal Keeping
- g) Small sided games / Collective games
- h) Formation and systems of play

Reference Books:

1. Latche Harry E. *Techniques of Football Coaching*, London : A.S. Barnes and Company 1969
2. Lodziek Conard, *Understanding Soccer Tactics*, London : Faber and Faber, 1966
3. Saunders, Tom *Play Better Soccer in All colour*. London, Colling Godsgow, 1972
4. Singh, Gien, *Football Quiz*, Delhi : Sweden Publishing House, 1977.
5. Hatty Lein, *Soccer coaching the Modern Way*, London : Faber and Faber, 1969
6. Hedder and Strengthen *Play Football with Polo*, London : Sydney, Toronto

BACHELOR OF SCIENCE (B.Sc.)
SEMESTER – II

SPORTS

Theory of Games & Sports

75 Marks

Unit-1	15
1.1 History of the game/sports.	
1.2 Organization (Working Federation)	
Unit-2	15
2.1 Various systems of the play (if applicable)	
2.2 Rules and their interpretation	
2.3 Equipment and Play-field	
Unit-3	15
3.1 Special Applied Scientific Principles for the improvement of skill and performance of the games/sports.	
Unit-4	
4.1 Physiology of Warm-up	15
-General and Specific Warm-up.	
Unit-5	
5.1 Officiating and Coaching:-	15
-Duties of good Coach, qualities and qualification of a Coach,	
5.2 Methods of Officiating.	

BACHELOR OF SCIENCE (B.Sc.)
SEMESTER - II
SPORTS

SOFT BALL
PRACTICAL

25 Marks

Fundamentals of Technique and Basic Skills:

1. Players Position
2. Pitching
3. The Catches
4. Batting Position
5. Hitting
 - a) Set-up
 - b) Power Position
 - c) Approach
 - d) Release
 - e) Follow through
6. Group Tactics
7. Defensive & Offensive
8. Lit up Games

BACHELOR OF SCIENCE (B.Sc.)
SEMESTER - II
SPORTS
LAWN TENNIS
Practical

25 Marks

1. **Fundamentals of Techniques and Basic Skills.**
- i) Forehand-Grip, Ready Position, Footwork, Backswing, Point of Impact, Follow Through.
 - ii) Backhand - As above.
 - iii) Service - Grip stance, backswing, point of Impact and Follow through
 - iv) Volleys - Grip, Ready Position
 - v) Lobs - Offensive, Defensive
 - vi) Smash
 - vii) Drop shot
 - viii) Ground Strokes
 - ix) Service
 - x) Volleys
 - xi) Lob

Reference books:

1. Brown Jim, *Tennis Strokes, Strategy and Programme*, New Jersey Prantice Hall, Inc. Englewood Cliffs 1980.
2. Harton, Mary, *How to plan winning Tennis*, New York; Eookthrift one West 39th Street, 1979.
3. Leighton, Jim, *Inside tennis Techniques of Winning*; New Jersey Prentice Hall, Inc. Englewood Cliffs 1959.
4. Trengore, Alam, *The Act of Tennis*, London : Hodder and stow. Limited Warmick Lane, 1964.

BACHELOR OF SCIENCE (B.Sc.)

SEMESTER - II

SPORTS

WRESTLING

PRACTICAL

25 Marks

1. Fundamentals of techniques and basic skills

a) Fundamental skills:

Stances, on guard position, referee's Position on mat, bridging and ways to break it.

b) Division of Techniques:

i) Attack -

Face to face

From behind

From under

On top position.

ii) Precautions

Blocking

Escapes

Counters

Recounters

Chains

RECOMMENDED BOOKS:

1. Dubey C.H. "*A Wrestling Guide*," 201.
Rampura, SAUGAR (M.P.)
2. Callangner E.C. and Dex Perry, *Wrestling*,
A.S. Barues and Co, New York
1. U.S. Vaval Institute, *Wrestling*, Annapolis - Manyla - U.S.

BACHELOR OF SCIENCE (B.Sc.)
SEMESTER – II
SPORTS

Badminton
Practical

25 Marks

Fundamental Skills:

1. Stance
2. Footwork
3. Grips
4. Service
5. Forehand stroke
6. Backhand stroke
7. Drop Shot
8. Smash
9. Lob: Offensive and Defensive
10. Tactics: Defensive and attacking in single, double and mixed double.

Reference Books:

1. Dowey, J.C. Better Badminton for All: Great Britain, Pelham Books Ltd.
2. Davic part, Better Badminton Learn in yourself Book, London: orient Paper Pooksaned Badminton.
3. Brown E, Better Badminton London Faber and Faber.
4. Rogers, Wynn. Advanced Badminton. IWOAA, WMC, Brown Co. Publishers, DUBU

**BACHELOR OF SCIENCE (B.Sc.)
SEMESTER - III**

**SPORTS
Theory of Games & Sports**

75 Marks

Unit-1	15
1.1 History of the game/sports.	
1.2 Organization (Working Federation)	
Unit-2	15
2.1 Various systems of the play (if applicable)	
2.2 Rules and their interpretation	
2.3 Equipment and Play field	
Unit-3	15
3.1 Special Applied Scientific Principles for the improvement of skill and performance of the games/sports.	
Unit-4	
4.1 Physiology of Warm-up	15
-General and Specific Warm-up.	
Unit-5	
5.1 Officiating and Coaching:-	15
-Duties of good Coach, qualities and qualification of a Coach,	
5.2 Methods of Officiating.	

**BACHELOR OF SCIENCE (B.Sc.)
SEMESTER - III**

SPORTS

**GYMNASTICS
PRACTICAL**

25 Marks

1. **Gymnastics**
 - a) Structural and order exercise
 - b) Free hand exercises.
 - c) General Development exercises with and without apparatus.
 - d) Elementary Gymnastic movements on the following apparatus
i) Vaulting House (Men) ii) Straddle vault.
2. **Parallel Bars**
 - a) Perfect swing on parallel bars
 - b) Back upraise from upper arms.
 - c) Sitting position straddled (with stretched hip)
 - d) Shoulder stand.
3. **Horizontal Bar**
 - a) Perfect swing on Horizontal bar.
 - b) Single leg up start (with swing)
 - c) Mill circle forward
 - d) Mill circle backward.
4. **Pommel Horse**
 - a) Perfect support position on Pommel Horse
 - b) Half single leg circle
 - c) Single leg circle outward (fronth support)
 - d) Single leg circle inward (fron support)
5. **Roman Rings**
 - a) Perfect swing on Roman Rings
 - b) Inverted Hand
 - c) Indicate forward with bent body.
 - d) Indicate forward with straight body
6. **Floor Exercise:**

a) Roll forward	b) Roll backward
c) Hand stand roll forward	d) Roll sideways (with stretched body in truck position.
e) Cartwheel	
f) Roll backward to hand stand	

BACHELOR OF SCIENCE (B.Sc.)

SEMESTER - III

SPORTS

HANDBALL

PRACTICAL

25 Marks

1. Fundamentals of Technique and Basic Skills:

- a) Basic skills such as :
The correct way to catch the ball with two hands. Catching the low ball, running, catching the high ball, Catching the ball to the side.
- b) Passing and Throwing :
Two handed chest pass, One handed shoulder pass, The reverse pass, The pass to the side, The long pass.
- c) Running with the ball (dribbling)
- d) Shooting
The falling shot from outside, the falling shot with feint, The diving shot, The standing shot, The jump shot, The penalty shot, The reverse shot, The fall shot.
- e) Goal keeping

2. Tactics:

- a) Setting-up defense formation.
- b) Defense formation and movement.
- c) Defense formation and movement
- d) Defense formation and movement
Attack against 4-2 defense
Attack against 3-3 defense

Reference Books:

1. Rowland B.J. Handball a *Complete Guide* London :Faber and Faber Ltd. 24. Russet Square, 1970
2. Mand, Chales L. Handball Fundamentals, Cinio Charle, E. Meril Company (Columns) 1966).
3. Philips E.E. Handball its play and Management New York. The Ronald Press Company, 1957
4. Roberson, Richard and Olson, Hervert, Geainning Handball Carnifornia : Wadswow H. Company Inc. Belmont, 1969.

BACHELOR OF SCIENCE (B.Sc.)

SEMESTER - IV

SPORTS

Theory of Games & Sports

75 Marks

	Unit-1	15
1.1	History of the game/sports.	
1.2	Organization (Working Federation)	
	Unit-2	15
2.1	Various systems of the play (if applicable)	
2.2	Rules and their interpretation	
2.3	Equipment and Play field	
	Unit-3	15
3.1	Special Applied Scientific Principles for the improvement of skill and performance of the games/sports.	
	Unit-4	
4.1	Physiology of Warm-up -General and Specific Warm-up.	
	Unit-5	
5.1	Officiating and Coaching:- -Duties of good Coach, qualities and qualification of a Coach,	
5.2	Methods of Officiating.	

BACHELOR OF SCIENCE (B.Sc.)
SEMESTER - IV
SPORTS
KABADDI

25 Marks

Offensive skills:

- | | |
|-----------------------|---------------|
| a) Touching with hand | b) Leg Thrust |
| c) Front Kick | d) Side Kick |
| e) Mule Kick | f) Aero Kick |
| g) Round Kick. | |

Defensive skills:

- | | |
|--------------------|--------------------|
| a) Wrist catches | |
| i) Normal Grip | |
| ii) Crocodile Grip | |
| b) Ankle Catch | c) Knee Catch |
| e) Trunk Catch | d) Thigh Catch |
| | f) Chain Formation |

Tactics:

- | | |
|-------------------------|-----------------------------------|
| a) Getting bonus points | b) Counter to bonus line crossing |
| c) No cross plays | d) when to delay getting lona |

RECOMMENDED BOOKS:

1. Rao, C.V. *Kabaddi*, Patiala: N.I.S. Publication, 1971.
2. Rddy. L. *Scientific Kabaddi*, Madras: Ramen's Printing Press, 1974.
3. *Kabaddi, Maharashtra State Kabaddi Association* Published by S.N.S. Secretary, Maharashtra State Kabaddi Association, Bombay.

BACHELOR OF SCIENCE (B.Sc.)

SEMESTER - IV

SPORTS

WEIGHT LIFTING

PRACTICAL

25 Marks

1. Fundamentals of Techniques:

- a) Stages of two hand class
- b) Stages of two hands jerk from chest.
- c) Stages of two hands snatch
- d) Two hands clean in half squat
- e) Two hands clean in deep squat
- f) Two hands clean in split squat.
- g) Two hands half jerk from chest
- h) Complete jerk from chest
- i) Snatch with split style
- j) Snatch with squat style.

Reference books

1. .Katyal P.N. Mannual of weight Lifting. Ambala Cantt. Green Printing Press
 2. Krikley, George W. *Modern Weight Lifting*. London: Feber Popular Books, 1957.
 3. Murray, Jim and Karpovich, Peter V. *Weight Trainning in Athletics*. Englewood cliffs. M.J. Prentice Hall 1965.
2. Krikley, George and Goodbody John. *The Manual of Weight Training*, London: Stanley Paul and Company, 1971.

**BACHELOR OF SCIENCE (B.Sc.)
SEMESTER - IV**

SPORTS

**JUDO
PRACTICAL**

25 Marks

1. Fundamentals of Judo:

Salutation (Rei). How to wear Judo cutume, Kumi-Kata (Method of holding costume) Types of posture in Judo (Shisei) Methods of disturbing balance (Kuzushi), preparation and attack (Tsukuri and Kake) Methods of backfall (Ukemi). Method of moving forward, backward and sideward (Shintai). Management of the body (Tai-Sabaki), Method of using stength.

2. Throwing techniques:

De-ashi-herai (Advanced-foot sweep), sasas Tsurikomi-anshi (propping drawing ankle throw), o-soto-gari (Major out reaping). O-goshi (Major Loin) o-Uchi-gari (Major our reaping) seioinage (shoulder throw). Ko-uchi Gari (Minor inner reaping angle throw). Tai-Otoshi (Body-drop). Harai Goshi. (Weeping Loin), Uchi-mata (Inner-thigh), Hane-Goshi (Spring hip throw), Tomoenage (Stomach throw), Kataguruma (shoulder wheel), Hanemakikomi (outer sinding spring hip (Uki-Otoshi (Floating drop). Oki-waza (floating throw Ushro-gshi (Rear Loin), Sumlotoshi (corner drop).

3. Throwing of grappling:

Kesa-gateme (scaff hold). Kata-gatame (shoulder holding.) Kami-shio-gatame (holding of upper four quarters). Yoko-shiho gatama (locking of side four quarters) Kuzure-yoko shiho-gatama (loching) of looking of four quarters).

4. Methods of Esxaping from all above listed grappling techniques:

5. Techniques of strangle holds or Neckholds :

(Shime - waza)

Juji-Jime (Cross-lock) hadaka-Jime (Naked choke lock) Okuriori-Jime (sliding collar or Laple lock) Sankaku-Jime (Triangular lock) Morote-jime (Two ahand lock) Tsukkemi-jime (Thrust lock).

6. Techniques of Bending and twisting joints :

(Kanasetu waza)

Udi-garmi (Engtanged Arm LOck) Juji-gatme (cross-lock) Udi-gatame (Arm lock), Hiza-Gatame (Arm lock), Hiza-Gatame (knee arm lock), waki-gatame (Side arm lock), Hada gatame (stomach arm lock).

7. Continous Attacks, Changing Techniques and Counter Throws:

a) Utilizing your own movements:

Kuchi-gari to seionage, kouchi-gari to
o-uchi gari, o-uchi-gari to Teiotoshi,
o-Uchigari to uchimate, uch - mate to Hizaguruma.
Seoi-nage to ko-uchi-gari

b) Utilizing your opponents movement :

Hiza-guruma to 'Ko-uchi' gari o-uchi-gari to Hizaguramu, Utsuri-goshi
to Habe goshi, Tompe-Nage to ko-Uchigari.

Reference Books

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2. Smith Rovert W. *Judo its Story and Practice*, Charle E. Tuttle Company of rutland. Veroni : Tokyo and Japan, 1958.
3. Ewn Harry, *Your Book of Judo*, Faber and Faver Ltd. 3. Queen Square London W.C.I., 1972
4. Harrison E.J. *Judo on the ground*, W. Foulsham Co. Ltd. 2-5 Old Bond Street, London, W.I. 1945.
5. Uyenishi S.L. *The Text Book of Ju-Jusu*. Athletic Publications Ltd. Link House. Store Street, London, W.C.I.

BACHELOR OF SCIENCE (B.Sc.)
SEMESTER - IV
SPORTS

Sepaktakraw
Practical

25 Marks

Fundamental Skills:

1. Kicks:
Inside kicks, knee/thigh kick, toe kick, outside kick, heading, cross jump kick, back flip, shoulder kick.
2. Spike:
Roll spike/ summersault kick, scissor kick/sunback kick, side scissor kick, front scissor kick, sole kick
3. Block By:
Back, leg, head.
4. Service:
Spin service, top spin, side spin, floating, half swing, throw the ball by front player to the back player (Tekong).
5. Trapping:
Chest, head, thigh, inside of the foot, instep of the foot.
6. Play the ball with different parts of the body.