



# **Bachelor of Physical Education and Sports (B.P.E.S)**

**Faculty of Health and Wellness**

**SRI SRI UNIVERSITY**  
**Faculty of Health and Wellness**  
**BACHELORS IN PHYSICAL EDUCATION AND SPORTS**  
**(B.PE.S)**

**COURSE STRUCTURE**

**SEMESTER I**

Code	Title of Course	Type of Course	Credits	
			T	P
BPES 101	History and Foundation of Physical Education	Core	4	
BPES 102	Basic and Systematic Human Anatomy and Physiology	Core	4	
BPES 103	Officiating and Coaching	Core	4	
BPES 104	Fundamental of Computer Application in Physical Education	Core	4	
BPES 105	Practical: i) Major Ball Game (Should be from the list of SGFI/IOA) ii) Running and Jumping Events	Core		4
SSC 101	Happiness Connect	Value Added Course	2	
Total Credit			22	

**SEMESTER II**

<b>Code</b>	<b>Title of Course</b>	<b>Type of Course</b>	<b>Credits</b>
			T P
BPES 201	Exercise Physiology	Core	4
BPES 202	Exercise Biochemistry and Metabolism	Core	4
BPES 203	Environmental Science	Core	4
BPES 204	Officiating and Coaching	Core	4
BPES 205	Practical: i) Ball Game (Should be from the list of SGFI/IOA) ii) Track & Field: Running and Throwing		4
BPES 206	NCC	Value Added Course	2
Total Credit			22

**SEMESTER III**

<b>Code</b>	<b>Title of Course</b>	<b>Type of Course</b>	<b>Credits</b>
			T P
BPES 301	Kinesiology & Sports Biomechanics	Core	4
BPES 302	Sports Psychology	Core	4
BPES 303	Sports Training	Core	4
BPES 304	Sports Sociology	Core	4
BPES 305	Practical i) Racket Game (Should be from the list of SGFI/IOA) ii) Yoga	Core	4

BPES 306	Natural Disaster Management	Value Added Course	2
Total Credit		22	

### SEMESTER IV

Code	Title of Course	Type of Course	Credits
			T P
BPES 401	Human Anatomy and Physiology-II	Core	4
BPES 402	Nutrition in sports	Core	4
BPES 403	Health Education	Core	4
BPES 404	Adapted Physical Education	Core	4
BPES 405	Practical i) Combative Game (Should be from the list of SGFI/IOA)	Core	4
BPES 406	Anthropometry in Sports	Value Added Course	2
Total Credit		22	

### SEMESTER V

Code	Title of Course	Type of Course	Credits
			T P
BPES 501	Sports Management	Core	4
BPES 502	Sports Journalism	Core	4
BPES 503	Fitness Training and Nutrition	Core	4
BPES 504	Athletic Care and Rehabilitation	Core	4
BPES 505	Practical i) Game of specialisation (Should be from the list of SGFI/IOA/ AIU) ii) Aerobics/ Weight lifting	Core	4

BPES 506	Indian Constitution	Value Added Course	2
Total Credit		22	

### SEMESTER VI

Code	Title of Course	Type of Course	Credits
			T P
BPES 601	Common Sports Injuries Prevention and Cure	Core	4
BPES 602	Counseling in sports	Core	4
BPES 603	Exercise Prescription/ Therapeutic Exercise	Core	4
BPES 604	Sport First aid and Emergencies	Core	4
BPES 605	Practical i) Power Lifting/ Physique Training	Core	4
BPES 606	Yoga in Sports	Value Added Course	2
Total Credit		22	

### SEMESTER VII

Code	Title of Course	Type of Course	Credits
			T P
BPES 701	Sports Entrepreneurship	Core	4
BPES 702	Test, Measurement & Evaluation	Core	4
BPES 703	Exercise Prescription/ Therapeutic Exercise	Core	4
BPES 704	Specialization (Kho-Kho/Basketball/Boxing/Table Tennis/ Cricket/Handball/Wrestling/Weightlifting/ Football/High Jump/Hammer Throw/Javelin/Competitive walking)	Core	4
BPES 705	Research Methodology	Core	4

BPES 706	Strength and Conditioning		2
Total Credit		22	

**SEMESTER VIII**

Code	Title of Course	Type of Course	Credits
BPES 801	Thesis	Core	12
BPES 802	Internship		10
Total Credit		22	

# BACHELARS IN PHYSICAL EDUCATION AND SPORTS (B.PE.S)

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## Detailed Syllabus

### SEMESTER-I

**BPES101**

**Credit 4**

#### **Paper-I**

##### **History and Foundation of Physical Education and Sports**

###### **Unit-I :** Introduction to Physical Education

- 1.1. Meaning, Definition and scope of Physical Education
- 1.2. Aims and Objectives of Physical Education
- 1.3. Importance of Physical Education in present era.
- 1.4. Misconceptions about physical education
- 1.5. Relationship of Physical Education with General Education
- 1.6. Physical Education as an Art and Science.

###### **Unit-II:** Philosophical aspect of Physical Education

1. Meaning of Philosophy.
2. Different philosophies applied to Physical Education:
  - a. Idealism.
  - b. Pragmatism.
  - c. Realism.
  - d. Naturalism.
  - e. Existentialism.
3. Need and importance of different philosophies in modern Physical Education programme

**Unit III: Historical Development of Physical Education in India**

1. Vedic Period (2500BC – 600 BC), Early Hindu Period (600 BC – 320 AD) and Later Hindu Period (320 AD – 1000 AD), Medieval Period
2. Post Mughal British Period (Before 1947) Y.M.C.A, and its contribution.
3. Physical Education in India (After 1947)
4. The early history and significant stages in the revival and development of the modern Olympic movement.
5. Educational and cultural values of Olympic movement.

**Unit-IV : Biological Concept of Physical Education**

1. Biological principles of Physical Education.
  - a. Growth and development.
  - b. Heredity and environment.
  - c. Somatotypes.
  - d. Sex differences.
  - e. Use, disuse and over use.
  - f. Chronological, physiological and anatomical ages

**Unit-V: Emerging Trends in Physical Education**

1. Career opportunities in Physical Education and Sports:
  - a. As a Physical Education teacher.
  - b. Coach / trainee.
  - c. Gym instructor.
  - d. Physiotherapist.
  - e. Psychologist.
  - f. Dietitian.
  - g. Sports administrator/manager
  - h. Rehabilitator

2. Adventure Sports
3. Water Sports
4. Worldwide therapeutic acceptance of Yoga
5. Fast growing professional in sports

**Reference Books:**

1. Kamlesh M.L., “Physical Education, Facts and foundations”, Faridabad P.B. Publications.
2. Barrow Harold M., “Man and movements principles of Physical Education”, 1978.
3. Ravanes R.S., “Foundation of Physical Education”, Houghton Millin Co. Boston USA (1978)
4. Krishana Murthy V. and Paramesara Ram, N. “Educational Dimensions of Physical Education”, 2nd Revised edition, Print India, New Delhi 1990.
5. Singh Ajmer et.al., “Essentials of Physical Education”, Kalyani Publishers Ludhiana Second revised Addition 2008.
6. Deleh V.A., “World History of Physical Education”, prentice Hall Inc.

**BPES102****Credit 4****Basic and Systematic Human Anatomy and Physiology****Unit-I :Introduction**

1. Meaning and Concept of Anatomy & Physiology.
2. Its importance in the field of physical education and sports.
3. Meaning and definition of cell, tissue, organ and system.
4. Microscopic structure and functions of cell.
5. Properties of living cell.

**Unit-II : Skeletal System**

1. General structure of bone, classification of bones and functions of the bones.
2. Location of various bones in skeleton.
3. Joints, their structure and classification.

**Unit-III: Muscular System**

1. Meaning of muscle.
2. Various types of muscle, their structure and functions.
3. Microscopic structure of skeletal muscle.
4. Mechanism of muscular contraction of skeletal muscle.

**Unit-IV: Cardiovascular System**

1. Heart, its location, structure and function.
2. Major blood vessels of the body.
3. Mechanism of blood circulation.
4. Systemic, pulmonary and coronary circulatory.
5. Blood pressure, cardiac output, cardiac cycle, heart rate, pulse rate and athletes heart.

**Reference Books:**

1. Pearce E., "Anatomy and Physiology for Nurses." Delhi Oxford University Press 1989.
2. Parrot, J.W. , "Anatomy for the students and teachers of Physical Education." London Edward Arnold Ltd. 1973.
3. Miller, A. and Leavel L.C., "Kimber-Grey-Stack pole's, Anatomy and Physiology." Amerind Publishing Co. Pvt. Ltd. New Delhi, Bombay, Calcutta, new York 1973.
4. Singh Ajmer et.al, "Essentials of Physical Education." Kalyani Publishers Ludhiana Second revised addition 2008.
5. Grays Anatomy.
6. Characids, B.D., " Handbook of General Anatomy." CAS Publication, New Delhi.
7. Fox, E.L, "Physiological Basis of Physical Education and Athletic" Brown Publication, 1989.

**BPES103****Credit 4****Officiating and coaching****Unit-I:** Introduction of Officiating and coaching

1. Concept of officiating and coaching
2. Principles of officiating & Coaching
3. Importance of officiating and coaching.
4. Qualifications for Officials conducting various tournaments.

**Unit-II :** Rules and Layout

- 1 Dimensions, layouts and marking of fields of chosen Ball Game –I
2. Rules and their interpretations of chosen Ball Game –I
3. Qualification and number of officials in the chosen Ball Game –
4. Coaching in the chosen Ball Game

**Unit-III:** Duties of Official

1. Dimensions, layouts and marking of fields of chosen Ball Game –II
2. Rules and their interpretations of chosen Ball Game –II
3. Qualification and number of officials in the chosen Ball Game –II
4. Coaching in the chosen Ball Game –II

**Unit-IV:** Qualities and Qualifications of Coach and Official

1. Layout, dimensions and markings of Track
2. Rules and their interpretations of running events in Track.
3. Yoga and its rules
4. Coaching in Athletics and Yoga

**Reference Books:**

1. Bunn, J. W. (1968). The art of officiating sports. Englewood cliffs N.J. Prentice
2. Hall. Bunn, J. W. (1972). Scientific principles of coaching.
3. . Englewood cliffs N. J. Prentice Hall. Dyson, G. H. (1963). The mechanics of athletics. London: University of London Press Ltd.
4. Dyson, G. H. (1963). The mechanics of Athletics. London: University of London Press Ltd. Lawther, J.D. (1965).
5. Psychology of coaching. New York: Pre. Hall.
6. Singer, R. N. (1972). Coaching, athletic & psychology. New York: M.C. Grew Hill.
7. Official Rule Book / Handbook of the concerned federation of sports.

**BPES104****Credit 4****Fundamental of Computer Application in Physical Education****Unit-I** Introduction to Computer

- 1 Information and communication technology (ICT).
- 2 Application of Computers in Physical Education
- 3 Components of computer, input and output device
  
- 4 Application software used in Physical Education and sports

**Unit-II** Word Processing

- 1 Getting started with Microsoft Word 39
- 2 Creating, saving and opening a document
- 3 Formatting Editing features Drawing table.
- 4 Page Setup, Paragraph Alignment, Spelling and Grammar Check, Printing Option, Inserting Page Number, Graph and Footnote.

**Unit-III** Spreadsheet Program

- 1 Getting started with Microsoft Excel
- 2 Creating, saving and opening spreadsheet
- 3 Creating formulas
- 4 Format and editing features for charting data.

**Unit-IV** Presentation Software

- 1 Getting started with Microsoft Power Point
- 2 Creating, saving and opening a ppt. file
- 3 Format and editing features slide show, design, inserting slide number
- 4 Enhancing of Picture, Graph, Table
- 5 Finalizing of a presentations

**Reference Books:**

1. Irtegov, D. (2004). Operating system fundamentals. Firewall Media.
2. Frye, C. & Lambert, J.(2015). Microsoft Office 2016 Step by Step, Microsoft Press.

3. Milke, M.(2007). Absolute beginner's guide to computer basics. Pearson Education Asia.
4. Sinha, P. K. & Sinha, P. (2004).Computer fundamentals. 4th edition, BPB Publication

**BPES105****Credit 4****Practical****Major Ball Game which should be from the list of SGFI/AIU/IOA)**

1. History and Development of the game at International and National level.
2. Dimensions and marking of playing area.
3. Basic requirements of the playing area.
4. Fundamental skills of the game.
5. Skill tests, scoring and arrangement of the skill tests.
6. National and international organizations / federations of the game.
7. Rules of the game with their interpretations.
8. Team selection and coaching in that game.
9. Officiating & Referee / Umpire /scorer /curatorship for self-employment.

**Track &Field: Running and Jumping**

1. History and Development of the Track and field at International and National level.
2. Basics of Athletic Track (200 & 400 Mt Track).
3. Preparation of Track area.
4. Marking of Track, various zones, starting points etc.
5. Running Events, their process, timing and scorings.
6. Fundamental skills related to running in track.
7. Running tests (for speed and endurance) and their administration.
8. National and international organizations / federations of the Athletics.
9. Rules and their interpretations in relation to running events.
10. Team selection, and coaching in running events.

11. Officiating & Referee / Umpire /scorer /curatorship for self-employment.

**BPES106**

**Credit 2**

**Happiness Connect**

## **SEMESTER- II**

**BPES201**

**Credit 4**

**Exercise Physiology**

**Unit-I** Functional Adaptations to Exercise

1. Hormonal control during exercise
2. Exercise and neuromuscular system
3. Metabolic adaptations to exercise
4. Cardio-respiratory changes
5. Effects of exercise and training on health and fitness

**Unit-II** Energy Continuum and Recovery Process

1. Metabolism and exercise
2. Recovery from exercise
3. Replenishment of energy stores during recovery process
4. Removal of excess lactic acid produced during exercise
5. Restoration of myoglobin oxygen stores

**Unit-III** Exercise in hot and cold environment

1. Body temperature regulations
2. Physiological responses to exercise in the heat
3. Acclimatization to exercise in heat
4. Physiological responses to exercise in cold
5. Health risks during exercise in the cold

**Unit-IV** Altitude and physiology

1. Exercise performance at altitude
2. Physiological responses to acute altitude exposure
3. Chronic altitude exposure and acclimatization

## Aging process and Ergogenics

4. Age related changes and exercise
5. Ergogenic aids and physical activity

### References Books:

1. W. Larry Kenney, Jack H. Wilmore, David L. Costill, 2012, Physiology of Sports and Exercises.
2. Robert A. Robergs, Scott O. Roberts, 2000, Fundamental Principles of Exercise Physiology for Fitness, Performance, and Health.
3. Larry G. Shaver, 1982, Essentials of Exercise Physiology.
4. Dr. Sandhya Tiwari, 2006, Exercise Physiology.
5. M. Dena Gardiner, 1985, The Principles of Exercise Therapy.
6. Edward L. Fox, Richard W. Bowers, Merle L. Foss, 1981, The Physiological Basis of Physical Education and Athletics.
7. Michael S. Bahrke, Charles E. Yesalis, 2002, Performance – Enhancing Substances in Sport and Exercises

## **BPES202**

**Credit 4**

### **Exercise Biochemistry and Metabolism**

#### **Unit-I**

Foundation of Biochemistry, Properties of Water, Amino Acids, Peptides and Proteins, Structure and Function of Proteins,

Enzymes, Sugars, Carbohydrates and Glycobiology, Nucleotides and Nucleic Acids, Fatty Acids, Structure and Functions of Lipids.

#### **Unit-II**

Principles of Bioenergetics, Major Metabolic Pathways in Human and its Relevance with Exercise, Glycolysis, Gluconeogenesis,

Pentose Phosphate Pathway, Citric Acid Cycle, Electron Transfer System in Mitochondria, Oxidative Phosphorylation.

### **Unit-III**

Basic Concepts and Design of Metabolism, Metabolic Regulation of Glucose and Glycogen, Biosynthesis of Carbohydrates, Lipid

Biosynthesis, Fatty Acids Catabolism, Amino Acids- Biosynthesis, Oxidation and Production of Urea, Metabolism of Lactate, Integration and Regulation of Metabolism.

### **Reference Books:**

1. Principles of Biochemistry- Lehninger Nilson and Cox W.H. Freeman.
2. .Principles of Biochemistry- Donald Voet, CW Pratt, JG Voet (2012) Wiley, ISBN:1118092449.
3. Principles of Exercise Biochemistry Editor(s): Poortmans J.R. (Brussels) Karger Publishers.
4. West & Todd Text book of Biochemistry. Mac Millan Company London.
5. Vasudevan Textbook of Biochemistry. Jaypee Brothers Medical publishers (P) Ltd.

## **BPES203**

**Credit 4**

### **Environmental Science (EVS)**

**Unit-I** Multidisciplinary Nature of Environmental studies

Descriptors/Topics

1. Introduction to environmental studies with their importance.
2. Need for public awareness.
3. Sensitization and participation.
4. Swatch Bharat Abhiyan.

**Unit-II** Natural Resources

Descriptors/Topics

1. Types of natural resources and their importance.
2. Food resources: World food problems and related aspects.
3. Land resources, Water resources, Forest resources- use and overuse
4. Minerals and Energy resources- importance of renewable and sustainable energy.
5. Equitable use of resources for sustainable lifestyles
6. Role of an individual in conservation of natural resources

### **Unit-III Ecosystems**

#### Descriptors/Topics

1. Concept of an ecosystem,
2. Types of ecosystem,
3. Structure and function of an ecosystem, Producers, consumers and decomposers.
4. Energy flow in the ecosystem, Food chains, food webs and ecological pyramids.
5. Ecological succession.
6. Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystem and Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)

### **Unit-IV Biodiversity**

#### Descriptors/Topics

1. Introduction - Definition: genetic, species and ecosystem diversity
2. Bio-geographical classification of India
3. Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
4. Bio-diversity at global, national and local levels, India as a megadiversitynation
5. Hot-spots of biodiversity,
6. Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts

7. Endangered and endemic species of India
8. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

**Reference books:**

1. Khaushik & Khaushik, “Fundamentals of Environmental Studies”
2. Somvanshi & Dhupper “Fundamentals of Environmental Studies”
3. Gauba & Bisht “Environmental Studies, Challenges & Solutions A quick Compendium
4. Asthana & Asthana “ A textbook of Environmental Studies”

**BPES204**

**Credit 4**

**Officiating and Coaching**

**Unit-I** Officiating and coaching in Chosen ball game -II

1. Dimensions, layouts and marking of fields of chosen Ball Game –II
2. Rules and their interpretations of chosen Ball Game –II
3. Qualification and number of officials in the chosen Ball Game –II
4. Coaching in the chosen Ball Game –II

**Unit-II** Officiating and coaching in Chosen ball game -III

1. Dimensions, layouts and marking of fields of chosen Ball Game –III
2. Rules and their interpretations of chosen Ball Game –III
3. Qualification and number of officials in the chosen Ball Game –III
4. Coaching in the chosen Ball Game –III

**Unit- III** Officiating and coaching in Athletics & Yoga

1. Layout, dimensions and marking in Field Events of Athletics.
2. Rules and their interpretations in Field Events of Athletics.
3. Yoga- Pranayama and Meditation.
4. Coaching in Field events of Athletics and Practice of-Pranayama & Meditation

**Unit-IV** Major tournaments of Athletics:

1. Major tournaments / Trophies of chosen Ball Game –III
2. Major tournaments / Trophies of chosen Ball Game –IV
3. Major tournaments / Competitions of Athletics 4.
4. 4 Yoga and its tournament.

**Reference Books:**

1. Bunn, J. W. (1968). The art of officiating sports. Englewood cliffs N.J. Prentice
2. Hall. Bunn, J. W. (1972). Scientific principles of coaching.
3. Englewood cliffs N. J. Prentice Hall. Dyson, G. H. (1963). The mechanics of athletics. London: University of London Press Ltd.
4. Dyson, G. H. (1963). The mechanics of Athletics. London: University of London Press Ltd. Lawther, J.D. (1965).
5. Psychology of coaching. New York: Pre.
6. Hall. Singer, R. N. (1972). Coaching, athletic & psychology. New York: M.C. Graw Hill.
7. Official Rule Book / Handbook of the concerned federation of sports.

**BPES205****Credit 4****Practical:****Major Ball Game which should be from the list of SGFI/AIU/IOA)**

1. History and Development of the game at International and National level.
2. Dimensions and marking of playing area.
3. Basic requirements of the playing area.
4. Fundamental skills of the game.
5. Skill tests, scoring and arrangement of the skill tests.
6. National and international organizations / federations of the game.
7. Rules and their interpretations of the game.
8. Team selection and coaching in that game.
9. Officiating & Referee / Umpire /scorer /curatorship for self-employment.

**Track & Field: Running and Throwing**

1. Basics of jumping events in Athletics.
2. Long jump- Basics, jumping pit, take of board, approach run and skills.
3. Triple jump- Basics, jumping pit, take of board, approach run and skills.
4. High jump -Basics of high jump, jumping pit, approach run and skills /styles.
5. Pole vault -Basics, jumping pit, equipment, approach run and skills.
6. Marking of jumping arena.
7. Jumping tests and their arrangements.
8. Rules, scoring and their interpretations in relation to all jumping events.
9. Team selection and coaching in jumping events.
10. Officiating & Referee / Umpire /scorer /curatorship for self-employment.

**BPES206****Credit 2****Unit -I**

Introduction to NCC: Aims, Objectives, History, Evolution of NCC in India.

NCC : Motto of NCC, NCC song, Organizational structure , Training& NCC Camps, Duties & Responsibilities of NCC cadets, Incentives for NCC.

Armed Forces :Basic Organization for Armed forces, Command centres of Army, Navy and Air Force, Badges & Ranks, Modes of Entry into Army, Honors & Awards

**Unit-II**

National Integration: Definition, Importance, Necessity and Factors affecting National Integration in India. Concepts of Unity in Diversity, Role of NCC in Nation Building, Threats to National Security.

Leaders of India: Brief Biography and Contributions of Mahatma Gandhi, Bhagat Singh, Jawaharlal Nehru, Lal BahadurShastri, Dr.B.R. Ambedkar, Subhash Chandra Bose, Sardar Ballavbai Patel.

Indian Neighbours : Bangladesh, China, Pakistan, Bhutan, Nepal, Myanmar, Sri Lanka

**Unit-III**

Drill : Foot Drill - Importance and Benefits of Drill, Words of Command, General•Attention, Stand-at-ease (Savdhan, Vishram), Turning (daen, baen, picche), Saluting ( daen, baen, saamne), Marching (tezchal, dheerechal, tham) Nikat&Khuli line, Visarjan , line tod, Squad formation, Squad Drill and Drill with Arms, Ceremonial Drill :Guard mounting.

Yoga - Introduction, Benefits and Exercises (Asanas).

**Unit- IV**

Leadership: Leadership and its types, Important leadership Traits, Indicators of good leadership, development of the indicators of good leadership, Leadership principles, Motivation and factors that motivate

Moral Values- what they are? character traits  
Honour Code& its concept, tenets of honor code

**SEMESTER-III****BPES301****Credit 4****Kinesiology & Sports Biomechanics****Unit-I** Introduction to Kinesiology and Sports Biomechanics

1. Meaning and Definition of Kinesiology and Sports Biomechanics
2. Importance of Kinesiology and Biomechanics in sports and physical activities
3. Origin and Insertion on bones and Action of major Muscles
4. Types of joints with their structure and functions

**Unit-II** Mechanical Concepts

1. Speed/ Velocity/ Acceleration
2. Velocity as a Vector Quantity
3. Determining the Direction of the Velocity Vector
4. Calculating Average Speed, Average Velocity and average Acceleration
5. Average Speed versus Instantaneous Speed
6. Distance, Displacement (Calculating average distance and displacement)
7. Fundamental concepts of following terms –
8. Fluid resistance
9. Buoyancy
10. Newton's Laws of Motion – and their application to sports activities.

**Unit-III** Kinetic/Kinematics Concept for Analysis Human Motion

1. Fundamental concepts of following terms –
2. Axes and Planes
1. Centre of Gravity
2. Equilibrium
3. Line of Gravity
4. Basic Concept related to kinetics
  - 4.1 Inertia
  - 4.2 Mass
  - 4.3 Force
  - 4.4 Centre of Gravity
  - 4.5 Pressure
  - 4.6 Density
  - 4.7 Torque
  - 4.8 Impulse
5. The Biomechanics of the Human Upper Extremity.

6. The Biomechanics of the Human Lower Extremity.

**Unit-IV** Qualitative/ Quantitative Analysis

1. Angular Kinematics of Human Movement.
2. Linear Kinetics of Human Movement

**Reference Books:**

1. Anthony J. Blazevich (2017). Sports Biomechanics: The Basics: Optimising Human Performance: bloomsburry
2. By Peter M. (2013), Biomechanics of Sport and Exercise: Human Kinetics
3. Amrit Kumar, R, Moses. (1995). Introduction to Exercise Physiology. Madras: Poompugar Pathipagam.
4. BeotraAlka, (2000) Drug Education Handbook on Drug Abuse in Sports: Sports Authority of India Delhi.
5. Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
6. David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics.
7. Fox, E.L., and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.
8. Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co.
9. Richard, W. Bowers.(1989). Sports Physiology. WMC: Brown Publishers.
10. Sandhya Tiwaji. (1999). Exercise Physiology.Sports Publishers.
11. Shaver, L. (1981).Essentials of Exercise Physiology. New Delhi: Subject Publications.
12. Vincent, T. Murche. (2007). Elementary Physiology. Hyderabad: Sports Publication.
13. William, D. McAradle. (1996). Exercise Physiology, Energy, Nutrition and Human
14. Performance. Philadelphia: Lippincott Williams and Wilkins Company.

**BPES302**

**Credit 4**

**Sports Psychology**

**Unit-I** Introduction of Sports Psychology

- 1 Meaning and nature of Sports Psychology.
- 2 Historical Evolution of Sports Psychology.

- 3 Relevance of Sports Psychology in Physical Education and coaching.
- 4 Psychological factors affecting sports performances.

#### **Unit-II** Personality and Sports

- 1 Meaning and nature of Personality.
- 2 Theories of personality in sports
- 3 Dimensions of personality and development of personality Motivation
- 4 Types of motivation and condition of developing achievement motivation.

#### **Unit-III** Learning

- 1. Meaning nature and principles of Learning, Types of Learning.
- 2. Laws of learning, Transfer of learning
- 3. Factors affecting learning
- 4. Learning curve, Plateau

#### **Unit-IV** Sports Sociology and Leadership

- 1. Nature of Sports Sociology.
- 2. Importance of Sports Sociology in Physical Education.
- 3. Socialization and value education through Physical Education.
- 4. Impact of society on sports and vice versa

#### **References Books:**

- 1. Alison and Robinson. (2018), *Excelling in Sport Psychology: Planning, Preparing, and Executing Applied Work*, Sean Fitzpatrick
- 2. Taylor, Jim, (2018), *Assessment in Applied Sport Psychology*, Human kinetics
- 3. Coumbe-Lilley , (2018), *Complex Cases in Sport Psychology*, Routledge
- 4. Ball, D. W. & Loy, J. W. (1975). *Sport and social order; Contribution to the sociology of sport*. London: Addison Wesley Publishing Co., Inc.
- 5. Kamlesh, M.L. (1998). *Psychology in physical education and sport*. New Delhi: Metropolitan Book Co.
- 6. Loy, J. W., Kenyon, G. S. & McPherson, B. D. (1978). *Sport and social system*. London: Addison Wesley Publishing Company Inc.
- 7. Loy, J. W., Kenyon, G. S. & McPherson, B. D. (1981). *Sports culture and society*. Philadelphia: Lea &Febiger.
- 8. Skinner, C. E., (1984.). *Education psychology*. New Delhi: Prentice Hall of India

**BPES303****Credit 4****Sports Training****Unit-I Introduction to Sports Training**

1. Meaning and nature of Sports Training
2. Aim and Objective of Sports Training
3. Principles of Sports Training
4. Characteristics of Sports Training

**Unit-II Training Components**

1. Strength: its type and means methods employed for developing them
2. Speed: its type and means methods employed for developing them
3. Endurance: its type and means methods employed for developing them
4. Flexibility: its type and means methods employed for developing them
5. Coordinative abilities: means methods employed for developing them

**Unit-III Load**

1. Principles of load and its components.
2. Determination of Optimum load,
3. Overload its causes and identification
4. Tackling Over Load.

**Unit-IV Training programming and planning**

1. Periodization and its types of Periodization.
2. Aim and Content of Periods—Preparatory, Competition, Transitional period.
3. Planning: Meaning and types.
4. Principles of Planning.

**Reference Books:**

1. Dick, W. F. (1980). Sports training principles. London: Lepus
2. Books. Harre, D. (1982). Principles of sports training. Berlin: Speculated.
3. Jensen, R. C. & Fisher, A.G. (1979). Scientific basis of athletic conditioning. Philadelphia: Lea and Fibiger, 2ndEdn.
4. Mathyew, L.P. (1981). Fundamental of sports training. Moscow: Progress Publishers.
5. Singh, H. (1984). Sports training, general theory and methods. Patiala: NSNIS.
6. Uppal, A.K., (1999). Science of Sports Training. New Delhi: Friends Publication.
7. SchlichMonfred (2003), Circuit Training for all sports, sports book publisher Toronto.

8. Dr. Sharad Chandra Mishra 92006), Sports Training, Sports Publication

## **BPES304**

**Credit 4**

### **Sports Sociology**

#### **Unit-I**

1. Meaning, nature and scope of sociology
2. Definition of sports sociology and sports sociology as a discipline
3. Sports as a medium of socio-cultural change
4. Effect of appearance sociability and specialization on sports participation.

#### **Unit-II**

1. Sports as social phenomenon and social institution
2. Historical development of sports in different type of societies
3. Types of Indian societies and development of sports.
4. Sports as an element of society
5. Sports as an element of cultural development
6. Sports as an art
7. Sports as a science

#### **Unit-III**

1. Meaning and concept of social stratification in sports
2. Sports and women
3. Sports and children
4. Sports and older persons
5. Sports and adults
6. Socialization and types of socialization
7. Agencies of Socialization
8. Role of family, school, college and peer group in sports socialization

#### **Unit-IV**

1. Politics and sports, role of political institutions in sports and need of political skills to govern sports.
2. Role of media in shaping of sports
3. Economy and sports, role of the economy of the country in the development of sports and games.
4. Hooliganism in sports, violence in sports and its causes.
5. Role of sports in the promotion of National Integration.

**Reference Books:**

1. Sharma S.R., “Sociological Foundation in Physical Education and Sports”, Friends Publication New Delhi.
2. Singh Kawaljeet, “Sociology of sports”, Friends publication, New Delhi
3. Singh Bhupinder, “Sports Sociology : An Indian Perspective”, Friends Publication, New Delhi.
4. Yobu. A, “Sociology of Sports”, Friends Publication, New Delhi.
5. Singh Ajmer et.al, “Essentials of Physical Education”, Kalyani Publishers Ludhiana, Second revised addition, 2008.

**BPES305****Credit 4****Practical****Racket Game which should be from the list of SGFI/AIU/IOA)**

1. History and Development of the game at International and National level.
2. Dimensions and marking of playing area.
3. Basic requirements of the playing area.
4. Fundamental skills of the game.
5. Skill tests, scoring and arrangement of the skill tests.
6. National and international organisations / federations of the game.
7. Rules and their interpretations of the game.
8. Team selection and coaching in that game.

9. Officiating & Referee / Umpire /scorer /curatorship for self-employment

### **Indigenous Activities (OR) Yoga Credit**

1. History and Development of the indigenous activities in the country.
2. Aim, Objectives and Principles of Indigenous activities.
3. Individual, group and team indigenous activities.
4. Marking in Indigenous activities.
5. Indigenous activities with equipment.
6. National organisations / federations of the Indigenous games.
7. Rules and their interpretations of the activities.
8. Team selection and coaching for indigenous activities.
9. Officiating & Referee / Umpire /scorer /curatorship for self-employment.

1. Indigenous activities for Mass Demonstrations.
2. Indigenous activities for National Events- Republic day, Independence day etc.
3. Indigenous activities for developing coordination and movements in young's.
4. Preparing Cheer leaders through Indigenous activities.
5. Inculcating improvisations in Indigenous activities/mass demonstrations.
6. Rules and their interpretations of the activities.
7. Team/group selection and coaching for indigenous activities.
8. Officiating & Referee / Umpire /scorer /team leaders for self-employment.

(OR)

### **Yoga**

1. Meaning and concept of Yoga
2. History and Development of the Yoga in India and abroad
3. Various Asanas in sitting position and their advantages
4. Various Asanas in standing position and their

5. Various Asanas in lying position and their advantages Suryanamaskar and its benefits.
6. Yogasana for treating various body ailments
7. Suryanamaskar- Practice and advantages.
8. Meaning and concept of Pranayama.
9. Various types of Pranayama, their principles and practice. Effect of Pranayama on body and their role in correcting health disorders.
10. Meditation – Types and techniques.
11. Officiating and scoring in Yoga competitions.
12. Coaching and career opportunities in Yoga.

**BPES306**

**Credit 2**

### **Natural Disaster Management**

**Objectives:** The course is intended to provide a general concept in the dimensions of disasters caused by nature beyond the human control as well as the disasters and environmental hazards induced by human activities with emphasis on disaster preparedness, response and recovery and handling of various emergencies.

**Learning Outcomes:** After completion of the course, learners will be able to:

1. To provide students an exposure to disasters, their significance and types.
2. To be able to understand the earthquake, its zone, seismic wave and how to protect from earthquake.
3. To gain a preliminary understanding of explosion and handling of the explosion
4. To enhance awareness of Hazardous Material and its handling
5. To develop rudimentary idea on Campus Shooting and action to be taken during Shooting events.
6. To understand about Terrorist Incidence and handling of the same
7. To gain knowledge on Financial Emergency and how to handle the same

### **Course Contents:**

#### **Unit 1:** Introduction on Disaster

Different Types of Disaster: Natural , Manmade, Bomb Threat: Bomb Trends , Types of Bomb Threats, Different Types of Communicating the Threat, Suspicious Items, Possible Bomb Threat Responses, Summary

#### **Unit 2:** Earthquake:

Earthquakes: intensity and magnitude of earthquakes, geographic distribution of earthquake zones; precursors to the earthquakes, seismic waves, travel-time and location of epicenter, nature of destruction, ground subsidence, protection from earthquake hazards, do's and don'ts during earthquake

**Unit 3: Explosion:**

Principles of explosion-detonation and blast waves-explosion parameters – Explosion Protection, Containment, Flame Arrestors, isolation, suppression, venting, explosion relief of large enclosure explosion venting-inert gases, plant for generation of inert gas-rupture disc in process vessels and lines explosion, suppression system based on carbon dioxide (CO<sub>2</sub>) and halons-hazards in LPG, ammonia(NH<sub>3</sub>), sulphur dioxide (SO<sub>3</sub>), chlorine (CL<sub>2</sub>) etc.Do's and don'ts during explosion

**Unit 4:Hazardous Material Spill/Release:**

Introduction to Hazardous Materials , Hazard Classification System, Hazardous Materials Recognition, Types of Hazardous Spills, Identification of Spills and Releases, Reporting (External and Internal), Absorbent Product Selection, Procedures for Safe Cleanup, Decontamination, Disposal of Wastes

**Unit 5: Campus Shooting:**

Warning signs of a shooter events, Action to be taken during Shooting events, evacuation and lockdown drill, Campus safety

**Unit 6:Terrorist Incidence:**

Types of terrorism, causes of terrorism, reasons for terrorism, phases of terrorism,Organizational Models for Terrorism and theIntelligence Process, effects of terrorism, effect of terrorism to the society, humanity and economy. psychological effects of terrorism, Counterterrorism, curbing of terrorism, action to be taken to handle terrorism. Mock drill.

**Unit 7: Financial Emergency:** Introduction, effects of financial emergency, Types of financial emergency : sudden health emergency, unexpected loss of income, death in family, other family emergency, rent in arrears and risk of eviction, natural disaster

**Practicals:**

The learners are required to:

1. Demonstrate the Bomb threat response drill
2. Practice various methods of protection from earthquake
3. Demonstrate Do's and don'ts during explosion
4. Identify the spill and release
5. Recognise Hazardous Materials
6. Demonstrate the procedures for Safe Cleanup, Decontamination, Disposal of Wastes
7. Practice the evacuation and lockdown drill during Shooting events
8. Prepare a Mock drill during Terrorist Incidence

**Reference Readings:**

1. Disaster Management by Dr. Mrinalini Pandey - Wiley India Pvt. Ltd.
2. Disaster Science and Management by Tushar Bhattacharya - McGraw Hill Education (India) Pvt. Ltd.
3. Disaster Management : Future Challenges and Opportunities by Jagbir Singh - K W Publishers Pvt. Ltd.
4. The Financial Crisis and the Free Market Cure by J. P. Singhal- Amazon.
5. The Hidden History of the Financial Crisis by Joe Nocera & Bethany McLean - National Academies Press

**SEMESTER –IV****BPES 401****Credit 4****Human Anatomy and Physiology-II****Unit-I Digestive System**

1. General arrangement and structure of digestive tract.
2. Mechanism of digestion.
3. Various glands of digestive system, their structure and functions.

**Unit-II Respiratory System**

1. Organs of respiratory system and their structure.
2. Mechanism of respiration.
3. Internal and external respiration.
4. Vital capacity, tidal volume, dead space, oxygen debt and second wind.

**Unit-III Excretory System and Endocrine System**

1. Structure and function of kidney, urinary tract and skin.
2. Microscopic structure of Nephron-mechanism of Urinary excretion.
3. Description of endocrine gland.
4. Various types of endocrine glands and their location.

5. Structure and function of pituitary gland, thyroid gland, adrenal gland, pancreases gland, parathyroid gland and sex gland.

#### **Unit-IV Nervous System**

1. Parts of the Brain, their structure and function.
2. Spinal cord its structure and function.
3. Structure of neuron and its types.
4. Reflex action and reflex arch.

#### **Reference Books:**

1. Pearce E., “Anatomy and Physiology for Nurses.” Delhi Oxford University Press 1989.
2. Parrot, J.W. , “Anatomy for the students and teachers of Physical Education.” London Edward Arnold Ltd. 1973.
3. Miller, A. and Leavel L.C., “Kimber-Grey-Stack pole’s, Anatomy and Physiology.” Amerind Publishing Co. Pvt. Ltd. New Delhi, Bombay, Calcutta, new York 1973.
4. Singh Ajmer et.al, “Essentials of Physical Education.” Kalyani Publishers Ludhiana Second revised addition 2008.
5. Grays Anatomy
- . 6. Characids, B.D., “ Handbook of General Anatomy.” CAS Publication, New Delhi.
7. Fox, E.L, “Physiological Basis of Physical Education and Athletic” Brown Publication, 1989.

## **BPES402**

**Credit 4**

### **Nutrition In Sports**

#### **Unit-I Introduction to Sports Nutrition**

1. Meaning and Definition of Sports Nutrition
2. Basic components of Nutrition
3. Factor to consider for developing nutrition plan
4. Balance diet and its components, Nutritional deficiencies.
5. Understanding of malnutrition and nutritional supplements.

#### **Unit-II Nutrient**

1. Ingestion to energy metabolism
2. Carbohydrates, Protein, Fat – Meaning, classification and its function 99
3. Role of carbohydrates, Fat and protein during exercise
4. Vitamins, Minerals, Water – Meaning, classification and its function
5. Role of hydration during exercise
6. Establishing daily caloric requirement and expenditure

#### **Unit-III Nutrition and Weight Management**

1. Obesity – Definition, meaning, types and causes of obesity; Health risks associated with Obesity and Solutions for Overcoming Obesity
2. Concept of BMI (Body mass index), Dieting versus exercise for weight control,
3. Common Myths about Weight Loss
4. Concept of weight management in modern era, Factor affecting weight management

#### **Unit-IV Steps of planning of Weight Management**

1. Determination of desirable body weight
2. Daily calorie intake and expenditure in weight management
3. Role of diet and exercise in weight management
4. Designing diet plan and exercise schedule for weight gain and loss
5. Balanced diet for Indian School Children.

#### **Reference Books:**

1. Bessesen, D. H. (2008). Update on obesity. *J ClinEndocrinolMetab.*93(6), 2027-2034.
2. Butryn, M.L., Phelan, S., & Hill, J. O. (2007). Consistent self-monitoring of weight: a key component of successful weight loss maintenance. *Obesity(Silver Spring)*. 15(12), 3091- 3096.
3. Chu, S.Y. & Kim, L. J. (2007). Maternal obesity and risk of stillbirth: a metaanalysis. *Am J ObstetGynecol*, 197(3), 223-228.
4. DeMaria, E. J. (2007). Bariatric surgery for morbid obesity. *N Engl J Med*,356(21), 2176-2183.
5. Dixon, J.B., O'Brien, P.E., Playfair, J. (n.d.). Adjustable gastric banding and conventional therapy for type 2 diabetes: a randomized controlled trial. *JAMA*. 299(3), 316-323.
6. Bates M. (2008). *Health Fitness Management (2nd Ed.) USA: Human Kinetics.*

**BPES 403****Credit 4****Health Education****Unit – I** Health Education and Services

1. Concept, Dimensions, Spectrum and determinants of Health
2. Health Education and Principles of Health Education
3. Nature and Scope of Health Education in Physical Education
4. Health Services in India

**Unit – II** Global Health Issues

1. Communicable, Non-Communicable disease and their prevention
2. Malnutrition, Food Adulteration, Environmental Pollution and Sanitation, Population and their management.
3. Physical Activity and Nutrition, Overweight and Obesity, Mental Health
4. Prime causes of death: cardiovascular disease, chronic respiratory disease, Diabetes, Mental Disorders, Nutritional Deficiencies and their prevention through physical activity

**Unit – III** Health Education in Schools

1. Need and scope of health education in schools
2. Preventing alcohol, tobacco and other drugs abuses in schools
3. Personal Health and Wellness: Healthy eating, Mental and Emotional health, and Violence prevention
4. Physical activity, Safety, First Aid and Emergency procedures

**Unit – IV** Health Supervision and Evaluation in Schools

1. Health Instruction and Health Supervision
2. Assessing personal and peers health risk taking
3. Analyzing the influence of family, peers, culture and media on health behavior
4. Consumer Health and Comprehensive Health Education

**Reference Books:**

1. Agrawal, K.C. (2001). Environmental biology. Bikaner: Nidhi publishers Ltd.

2. Bensley, R. J. and Fisher, J. B (2009). Community Health Education Methods. Massachusetts: Jones and Bartlett Publishers.
3. Edward, J. T. (2006). Health and Disease, New Delhi: Sports Publication.
4. Anspaugh, D. J. and Ezell, G. (2003). Teaching today's Health. USA: Allyn& Bacon.
5. McKenzie, J. F. and Smeltzer, J. L (2001). Planning, Implementing, and Evaluating Health Promotion Programs: A Primer, USA: Allyn& Bacon.

## **BPES404**

**Credit 4**

### **Adapted Physical Education**

#### **Unit-I Introduction**

1. Meaning, Definition and Importance of Adapted Physical Education and Sports
2. Purpose, Aims and Objectives of Adapted Physical Education and Sports
3. Program organization of Adapted Physical Education and Sports
4. Organizations addressing and giving opportunities to people with disabilities.
5. Adapted Sports- Para Olympics and other Opportunities

#### **Unit-II Development of Individual Education Program (IEP)**

1. The student with a disability
2. Components and Development of IEP.
3. Principles of Adapted Physical Education and Sports
4. Role of Physical Education teacher

#### **Unit-III Developmental Considerations of an Individual**

1. Motor development
2. Perceptual Motor development
3. Early childhood and Adapted Physical Education
4. Teaching style, method and approach in teaching Adapted Physical Education

#### **Unit-IV Individual with unique need and activities**

1. Behavioral and Special learning disability
2. Visual Impaired and Deafness

3. Health Impaired students and Physical Education
4. HRPF and its development for Individual with unique need
5. Role of games and sports in Adapted Physical Education

**Reference Books:**

1. Beverly, N. (1986). Moving and Learning. Times Mirror/Mosby College Publishing.
2. Cratty, B.J. Adapted Physical Education in the Mainstream. (4th Edition) Love Publishing Company.
3. Houner, L.D. Integrated Physical Education- A guide for the elementary classroom teacher.
4. Winnick, J. P. (2005). Adapted Physical Education and Sports. Human Kinetics (4th Edition).
5. Pangrazi, R.P. and Dauer, V. P. Dynamics Physical.

**BPES405****Credit 4****Practical****Combative Game which should be from the list of SGFI/AIU/IOA)**

1. History and Development of the game at International and National level.
2. Dimensions and marking of playing area.
3. Basic requirements/ equipment of the game.
4. Fundamental skills of the game.
5. Skill tests, scoring and arrangement of the skill tests.
6. National and international organisations / federations of the game.
7. Rules and their interpretations of the game.
8. Team selection and coaching in that game.
9. Officiating & Referee / Umpire /scorer for self-employment.

**Gymnastics (OR)Swimming**

1. History and Development of the Gymnastics at International and National level.

2. Various forms / types of gymnastic activities.
3. Basic requirements/ equipment for the gymnastics.
4. Fundamental skills/movements in the gymnastics.
5. National and international organisations / federations of gymnastics.
6. Rules, scoring and their interpretations in gymnastic competitions.
7. Team selection and coaching in gymnastics.
8. Officiating & Referee / Umpire /scorer for self-employment.

**OR**

### **Swimming**

1. History and Development of the swimming at International and National level.
2. Dimensions and other aspects of swimming pools.
3. Basic swimming skills/ styles..
4. Swimming tests, scoring and arrangement of the skill tests.
5. National and international organisations / federations of swimming.
6. Rules and their interpretations of the swimming events and competitions.
7. Team selection and coaching in swimming. 8. Officiating & Referee / Umpire /scorer / life guards training for self-employment.

## **BPES406**

**Credit 2**

### **Anthropometry in Sports**

#### **Unit-I**

Introduction, scope and general consideration, i.e. Application of anthropometric data in sports, Body proportions and indices, Sports specific body proportions and indices, Body mass index and its importance in sports'

#### **Unit-II**

Anthropometric Measurements and Procedures, Equipment for anthropometric measurements, Gross Body Measurements and procedures, Length of Body Parts, Measurements and procedures, Diameters of Body Parts, Measurements and procedures,

Circumferences of Body Parts, Measurements and procedures, Skinfold Thickness, Measurements and procedures.

### **Unit–III**

Physiological Maturation: Decimal Age and concept of Physiological maturity in sports. Assessment of skeletal maturity of athletes, Body Composition: Anthropometric determination, Importance in sports and various methods to estimate body composition, Somatotyping: Introduction, Definition of Somatotyping and Classification.

### **Reference Books:**

1. Sports Anthropometry by H.S. Sodhi, ANOVA Publication.
2. Physique and Selection of Sportsmen by H.S. Sodhi and L.S. Sidhu.
3. Kinanthropometry by S.P. Singh and P. Malhotra, Luna Publication, Patiala.
4. Kinanthropometry by Roger Eston and Thomas Reilly, E & F.N. SPON, London.
5. Skeletal Maturity by S.P. Singh, L.S. Sidhu, and J. Singh, Human Biology Publication Society, Punjabi University, Patiala.
6. Genetic and Anthropological Studies of Olympic Athletes by De Garray, Louis Levine & Cater, Academic Press, London.

## **SEMESTER- V**

**BPES505**

**Credit 4**

### **Sports Management**

#### **Unit-I** The Management Process

1. Definition, Principles, Nature and Concept of Sports Management.
2. Progressive concept of Sports management.
3. The purpose and scope of Sports Management.
4. Essential skills of Sports Management.
5. Qualities and competencies required for the Sports Manager.
6. Event Management in physical education and sports.

#### **Unit-II** Leadership in Sports Management Process

1. Meaning and Definition of leadership.
2. Leadership style and method.

3. Elements of leadership.
4. Forms of Leadership-
  - 4.1 Autocratic
  - 4.2 Laissez-faire
  - 4.3 Democratic
  - 4.4 Benevolent Dictator
  - 4.5 Qualities of administrative leader.
  - 4.6 Preparation of administrative leader.
  - 4.7 Leadership and Organizational performance.

**Unit-III** Planning and Management of sports at Institutional level

- 1 Sports Management in Schools, colleges and Universities.
- 2 Factors affecting planning
3. Planning a school or college sports programme.
4. Directing of school or college sports programme.
5. Controlling a school, college and university sports programme.
  - 5.1 Developing performance standard
  - 5.2 Establishing a reporting system
  - 5.3 Evaluation
  - 5.4 The reward/punishment system

**Unit-IV** Financial Management in Sports

1. Financial management in Physical Education & sports in schools, Colleges and Universities.
2. Objectives and scope of financial planning.
3. Management of Infrastructure, finance and personal
4. Mechanics of purchase and audit.

**Reference Books:**

1. Bucher, C.A.( 2002). Management of Physical Educational and Sports.(12th Ed.). USA :McGarw Hill Co. 2. Chakraborti, S.(2007). Sports Management. New Delhi: Friends Publication.
3. Frosdick, S., &Walley, L. (2003). Sports and Safety Management. USA: A division of Reed Education and Professional Publishing Ltd.
4. Govindrajulu, .N. (2005). Management of Physical Education and Sports Programme. New Delhi : Friends Publication.
5. Kamlesh, M. L. (2000). Management Concepts in Physical Education and Sports. New Delhi : B.V. Gupta Publication.
6. Mastoralexis, L.P., & Barr, C.A. (1998). Principles and Practice of Sports Management. Maryland: Aspen Publication.
7. Roy, S. S. (2002). Sports Management. New Delhi: Friends publication.
8. Horine., Larry. (1985). Administration of Physical Education and Sports Programmes. New York :Saundress college publication.

## **BPES502**

**Credit 4**

### **Sports Journalism**

#### **Unit-I** Introduction

1. Meaning and Definition of Journalism
2. Ethics of Journalism
3. Sports Ethics and Sportsmanship
4. Reporting Sports Events
5. National and International Sports News Agencies.

#### **Unit-II** Sports Bulletin

1. Concept of Sports Bulletin
2. Types of bulletin
3. Journalism and sports education
4. Structure of sports bulletin – Compiling a bulletin
5. General news reporting and sports reporting.

**Unit-III Mass Media**

1. Mass Media in Journalism: Radio and T.V.
2. Commentary – Running commentary on the radio – Sports expert’s comments.
3. Role of Advertisement in Journalism.
4. Sports Photography
5. Editing and Publishing.

**Unit-IV Report Writing on Sports**

1. Brief review of Olympic Games, Asian Games, Common Wealth Games World Cup, National Games and Indian Traditional Games.
2. Preparing report of an Annual Sports Meet for Publication in Newspaper.
3. Organization of Press Meet.
4. Practical assignments to observe the matches and prepare report and news of the same.
5. Visit to News Paper office and TV Centre to know various departments and their working.

**Reference Books:**

1. Ahiya B.N. (1988) Theory and Practice of Journalism: Set to Indian context Ed3. Delhi: Surjeet Publications
2. Ahiya B.N. Chobra S.S.A. (1990) Concise Course in Reporting. New Delhi: Surjeet Publication
3. Bhatt S.C. (1993) Broadcast Journalism Basic Principles. New Delhi. Haranand Publication
4. Dhananjay Joshi (2010) Value Education in Global Perspective. New Delhi: Lotus Press.
5. Kannan K (2009) Soft Skills, Madurai: Madurai: Yadava College Publication
6. MohitChakrabarti (2008): Value Education: Changing Perspective, New Delhi: KanishkaPublication,.
7. Padmanabhan. A &Perumal A (2009), Science and Art of Living, Madurai: Pakavathi Publication
8. Shiv Khera (2002), You Can Win, New Delhi: Macmillan India Limited.
9. Varma A.K. (1993) Journalism in India from Earliest Times to the Present Period. Sterling publication Pvt. Ltd.

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

## **BPES503**

**Credit 4**

### **Health Education and Nutrition**

#### **Unit-I** Introduction

1. Concept of health, meaning, definition and scope of health education.
2. Objective of health education.
3. Principles of health education.
4. Need and significance of health education.

#### **Unit-II** Personal health and Hygiene

1. Meaning of personal hygiene.
2. Personal care of:
  - a. Skin.
  - b. Hair.
  - c. Ear.
  - d. Eyes.
  - e. Nose.
  - f. Teeth.
  - g. Feet.
  - h. Cloths.
3. Eliminating of body wastes.
4. Rest, sleep and relaxation.
5. Effect of alcohol and smoking on health.

#### **Unit-III** School Health Programme and Nutrition

1. Healthful school living:
  - a. Place and location of school.
  - b. Buildings.

- c. Infrastructure and facilities.
- d. Safety measures.
- 2. Health supervision/services:
  - a. Physical medical examination and their follow up.
  - b. Health inspection of students.
  - c. Centers of communicable disease.
- 3. Health instructions related to:
  - a. Personal care.
  - b. Communicable disease.
  - c. Nutrition.
  - d. Healthful living.
- 4. Nutrition:
  - a. Balanced diet and its elements: Carbohydrates, proteins, fats, vitamins, minerals, salts and water.
  - b. Daily energy/calorie requirements of healthy person.

#### **Unit-IV** Communicable Disease

- 1. Meaning and definition of communicable disease.
- 2. Mode of transmission, prevention and cure and sanitation of communicable disease.
- 3. Common Communicable Diseases:
  - a. Influenza.
  - b. Malaria.
  - c. Small pox.
  - d. Tuberculosis.
  - e. Typhoid.
  - f. Cholera.
  - g. Measles.

**Reference Books:**

1. Klander H.F., “School Health Education”, The Mac Million Co. 1962.
2. Pande P.K. and Gango Padhyay S.R., “Health Education for School Children.”
3. S. Dheer and Others, “Introduction to Health Education, AP Publishers 9, Books Market Chowk Adda, Tande, Jalandhar 1989.
4. Nebmir. A. “The school Health Education, New York: Harper and Brothers.
5. Park, JE and park, K., “Text Books of Preventive and Social medicine” Tenth Edition, Banarsi Dass Bhanot, Habalpur 1985.

**BPES504****Credit 4****Athletic Care and Rehabilitation****Unit-I** Corrective Physical Education

1. Definition and Objectives of Corrective Physical Education.
2. Posture and Body Mechanics, Standards of Standing Posture.
3. Value of Good Posture, Drawbacks and Causes of Bad Posture.
4. Posture Test – Examination of the Spine.

**Unit-II** Posture and Rehabilitation Exercises

1. Normal Curve of the Spine and its Utility.
2. Deviations in Posture- Kyphosis, Lordosis, Flat Back, Scoliosis, Round Shoulders, Knock Knee, Bow Leg, Flat Foot.
3. Causes for Deviations and Treatment Including Exercises.
4. Passive, Active, Assisted, Resisted Exercise for Rehabilitation.

**Unit-III** Massage

1. Brief History of Massage, Massage as an Aid for Relaxation, Points to be Considered in giving Massage
2. Physiological, Chemical, Psychological Effects of Massage, Indication /Contra Indication of Massage 3.3 Classification of the Manipulation used Massage and their Specific Uses in the Human Body.
3. Stroking Manipulation, Effleurage, Pressure Manipulation, Percussion Manipulation, Cupping, Poking, Shaking Manipulation, Deep Massage.

#### **Unit-IV Sports Injuries Care, Treatment and Support**

1. Principles Pertaining to the Prevention of Sports Injuries.
2. Care and Treatment of Exposed and Unexposed Injuries in Sports.
3. Principles of apply Cold and Heat, Infrared Rays, Ultrasonic Therapy, Short-wave Diathermy Therapy.
4. Principles and Techniques of Strapping and Bandages.

#### **References Books:**

1. Dohenty. J. Meno. Wetb, Moder D (2000) Track & Field, Englewood Cliffs, Prentice Hal Inc.
2. Lace, M. V. (1951) Massage and Medical Gymnastics, London: J & A Churchill Ltd.
3. Mc Ooyand Young (1954) Tests and Measurement, New York: Appleton Century.
4. Naro, C. L. (1967) Manual of Massage and, Movement, London: Febra and Febra Ltd.
5. Rathbome, J.l. (1965) Corrective Physical education, London: W.B. Saunders & Co.
6. Stafford and Kelly, (1968) Preventive and Corrective Physical Education, New York

#### **BPES505**

**Credit 4**

#### **Practical**

##### **Game of Specialization which should be from the list of SGFI/AIU/IOA)**

1. Basic skills of the game.
2. Dimensions and preparation of playing area.
3. Drills for skill development.
4. Skill tests, their administration and scoring.
5. Rules of the game and their interpretations.
6. Officiating and coaching in the game.
7. Maintenance of equipment of the game.

#### **Aerobics (OR)Weight lifting Credit**

Aerobics

1. Introduction of Aerobics.
2. Aerobics activities without music and equipment.
3. Aerobics for fitness and health.
4. Aerobics for mass demonstration.
5. Aerobics with equipment and music.
6. Judging and scoring in aerobics.
7. Coaching, officiating and starting careers in aerobics.
8. Skill Practice of the Aerobics.
9. Skill lessons of Aerobics.
10. Coaching lessons of Aerobics.
11. Advance coaching and training of Aerobics (try for certification of coaching from district/state/national federation/online).
12. Officiating of Aerobics (Try for certification from concerned district/state/national federation for self employment)

OR

#### Weight lifting

1. History and Development of the weight lifting
2. Fundamental principles and procedures of weight lifting.
3. Weight lifting for competition purpose and general purpose.
4. Team selection and coaching in gymnastics.
5. Gym management and maintenance of equipment.
6. Officiating & Referee / Umpire /scorer for self-employment.
7. Starting own gym for self-employment.
8. Skill Practice of the Weight lifting.
9. Skill lessons of Weight lifting.
10. Coaching lessons of Weight lifting.
11. Advance coaching and training of Weight lifting(try for certification of coaching from district/state/national federation/online).

12. Officiating of Weight lifting (Try for certification from concerned district/state/national federation for self employment)

## SEMESTER- VI

**BPES601**

**Credit 4**

### Common sports injuries prevention and cure

#### Unit-I

1. Sports injuries and its types:

a. Acute injuries

b. Overuse injuries

2. Common sport injuries:

a. Sprain	b. Strain	c. Fracture	d. Dislocations	e. Abrasion	f.
Contusion	g. Bruise	h. Blisters	i. Corn	j. Athletes foot	k.
Tennis elbow	l. Footballers Knee	m. Footballers Ankle			

3. Preventive measures for common sports injuries

4. Treatment for common sports injuries

#### Unit-II

1. Meaning, aim and objectives of first aid

2. First aid box and its articles

3. Types of bandages and splinters

4. Qualities and functions of a first aider

5. Principles of first aid

6. Causes of sports injuries

7. First aid for the common sports injuries

8. Concept of PRICE.

#### Unit-III

1. Emergency treatment for common accidents:

- |              |                    |                            |               |                   |
|--------------|--------------------|----------------------------|---------------|-------------------|
| a. Drowning  | b. Burning         | c. Insect stings & bitings | d. Snake bite | e. Dog bite       |
| f. Poisoning | g. Unconsciousness | h.                         |               |                   |
| Fainting     | i. Hysteria        | j. Sunstroke               | k. Shock      | l. Electric shock |
| m. Acid burn |                    |                            |               |                   |

2. Ergogenic aids in sports and their ill effects :

a. Anabolic agents b. Stimulants c. Beta blockers d. Narcotic analgesics e. Diuretics f. Blood doping  
Unit-IV 1. Rehabilitory exercises for sports injuries

2. Rehabilitation procedures of sports injuries : a. Cold Therapy b. Heat Therapy c. Hydrotherapy d. Electron radiotherapy e. Ionization Therapy f. Exercise Therapy g. Massage

### **Reference Books:**

1. Armstrong and Tuckler; "Injuries in sport", London, Staples press, 1964.
2. Bolan J.P., "Treatment and prevention of athletic injuries".
3. More house, L.E. and Resch, P.J., "Sports medicine for Trainers, Philadelphia".
4. Ryans Allan; "Medical Care of the Athlete", McGraw Hill.
5. Evans, A. William; "Everyday safety", Chicago: Iyan and Chamaha.
6. Singh Ajmer et.al, "Essentials of Physical Education", Kalyani Publishers, Ludhiana, Second revised addition 2008.

**BPES602**

**Credit 4**

### **Counselling in sports**

#### **Unit-I** Counselling in Physical Education and Sports

1. Meaning, definition and scope of Counselling in sports.
2. Aims and Objective of Counselling in sports.
3. Principles of Counselling
4. Need and importance of Counselling.

#### **Unit-II** Stress & Anxiety in Sports

1. Meaning and definition of stress and anxiety.

2. Types of stress and anxiety.
3. Symptoms and effects of stress, anxiety and competition anxiety.
4. Management of stress and anxiety.

### **Unit-III** Motivation and Sports Performance

1. Meaning and definition of Motivation.
2. Types and techniques of motivation
3. Principles and Importance of motivation
4. Role of coach / teacher /government in motivation

### **Unit-IV** Counselling to Athletes

1. Counselling on injuries and rehabilitation.
2. Counselling on handling success and failure in sports.
3. Counselling on drugs in sports.
4. Counselling on job opportunities and life after retirement from sports.

### **Reference Books:**

1. Recharad Nelson-Jones, Basic Counselling Skills, Sage Publication, New Delhi.
2. Dr. M L Kamlesh, Psychology in Physical Education and Sports, Educational Publishers and Distributors.
3. An Introduction to Counselling- McGraw-Hill Education.
4. Understanding Psychology- McGraw Hill Book.

**BPES603**

**Credit 4**

### **Exercise Prescription / Therapeutic Exercise**

#### **Unit-I** Exercises and their Types

1. Meaning and definition of exercise
2. Types of exercises- Aerobics, Anaerobic and Conditioning
3. Importance of warming up, cooling down and stretching

4. Therapeutic exercises and their principles.

#### **Unit-II** Weight management & Gym Exercises

1. Understanding body weight, components of body weight and ideal weight.
2. Fat burning exercises and their variations.
3. Gym training exercises for weight loss and strengthening
4. Dance, Aerobics, cycling and swimming for weight loss.

#### **Unit-III** Exercises and Elderly People

1. Understanding aging and characteristics
2. Need and importance of exercises in aged people.
3. Principles and precautions while giving exercises to elderly people.
4. Type of exercises and recreational activities for elderly people.

#### **Unit-IV** Exercises for special needs

1. Exercises for rehabilitations after injuries.
2. Exercise for diabetics, Exercises during & after Pregnancy
3. Exercises for casuals and weekenders.
4. Exercises for recreations and kids.

#### **Reference Books :-**

1. Robert A. Robergs, Steven J. Keteyian (2003), Fundamentals of Exercise Physiology: For Fitness, Performance, and Health, Volume 1- McGraw-Hill
2. Dympna Pearson (2012), Weight Management: A Practitioner's Guide, ISBN-1405185597
3. ASCM and Arnold Schwarzenegger (2003), ASCM Fitness Book
4. David Nordmark (2015), Workout Routines- Exercise workout routines.
5. Frederic Delavier (2010), Strength Training Anatomy
6. Jenny Allan (2013), The Ultimate Body building Diet, Nutrition and Workout Plan for Men and Women.

7. Joseph Kandel and Chritine A Adamec (2003), The Encyclopaedia of Senior Health and Wellbeing.

## **BPES604**

**Credit 4**

### **Sport First Aid and Emergencies**

#### **Unit-I**

Introduction to Sports First Aid, Athletic Health Care Team, Sport First Aid Game Plan, First Aid Equipment and Kit, Basic Life Support System: Recovery Position, Head to toe- survey, Artificial Ventilation; Basic Sport First Aid Skills: Anatomy and Sport Injury Terminology, Emergency Action Steps, Physical Assessment and First Aid Techniques, Moving Injured or Sick Athletes.

#### **Unit-II**

Sport First Aid for Specific Injuries: Unconsciousness: ABC, CPR, AED, Respiratory Emergencies and Illnesses, Shock, Wounds and Bleeding, Head, Spine and Nerve Injuries, Internal Organ Injuries, Upper Body and Lower Body Musculoskeletal Injuries, Facial and Scalp Injuries, Skin Problems.

#### **Unit-III**

Disaster Preparedness and Management: Weather-Related Problems, Environmental Emergencies: Animal Bites and Stings, Allergies, First Aid Protocols, Practical Skills in using: Triangular Bandages, Broad fold, Thin fold, Slings, Collars, Cardiac Emergencies.

### **Reference Books:**

Sport First Aid-5th Edition by Melinda Flegel, Human Kinetics, 2014.

Practical First Aid: British Red Cross in Association with Donning Kinder Sley.

John Morris: First Aid Training Manual, Everyday learning Pvt. Ltd.

Authorized Manual of St. John Ambulance (India): First Aid. Bradley R.A. Wilson. Timothy E.

Glaros : Managing Health Promotion Programs Human Kinetics Publishers.

## **BPES605**

**Credit 4**

**Practical****Power Lifting (OR) Physique Training**

## Power Lifting

1. History and Development of the power lifting.
2. Power lifting for competition purpose and general purpose.
3. Fundamental principles and procedure for power lifting.
4. Team selection and coaching in gymnastics.
5. Gym management and maintenance of equipment.
6. Officiating & Referee / Umpire /scorer for self-employment.
7. Starting own gym for self-employment.

OR

**Physique Training**

1. Skill Practice of the power lifting and Physique.
2. Skill lessons of power lifting and Physique.
3. Coaching lessons of power lifting and Physique.
4. Advance coaching and training of power lifting and Physique (try for certification of coaching from district/state/national federation/online).
5. Officiating of power lifting and Physique (Try for certification from concerned district/state/national federation for self employment)

**BPES606****Credit 2****Yoga in Sports****Unit-I**

1. Importance of Yoga and Fitness
2. Types and Principles of Asanas
3. Fitness Components
4. General and Specific Conditioning and its importance
5. Specific Exercises for Strength, Flexibility, Speed, Agility, & Coordinative abilities
6. Yoga, Fitness and Personality
7. Nutrition for Fitness

**Unit-I**

1. Meaning of Yoga, history and development of yoga in India,
2. Ashtanga yoga
3. Precautionary measures to be taken before, during and after practicing yoga, Suryanamaskar, Asanas, Pranayama, Meditation and Mudras.
4. Effect of Asanas on different systems- Circulatory system, Respiratory system, Digestive system, Nervous system, Excretory system

**List of practicals**

1. Yoga Stretchings
2. General and Specific warm up
3. Asanas
4. Recreation for Fitness

**Reference Books:**

1. Ajith 'Yoga pravesha'' Rashtrotana parishad Bangalore
2. B K S Iyengar 'Light on Yoga' Rashtrotana parishad Bangalore
3. B.K.S.Iyengar 'Yoga the path to holistic Health', Dorling Kindersley Delhi 2001
4. Leslie Kaminoff, Amy Matthews 'Yoga Anatomy' Human Kinetics U.S.A. 2007
5. Muller, J. P. (2000). Health, Exercise and Fitness. Delhi: Sports
6. Swami Sachidananda 'the yoga sutras of Pathanjali Integral yoga Publications 2012.

**SEMESTER-VII****BPES701****Credit 4****Sports Entrepreneurship****Unit-I**

1. Meaning and Definition of Entrepreneurship
2. Concept and characteristics Entrepreneurship.

3. Need and Importance of entrepreneurship in sports
4. Understanding Sports Business industry.

### **Unit-II**

1. Understanding the entrepreneurial process.
2. Types of Entrepreneurs.
3. Risk and Rewards in entrepreneurship.
4. Leading sports companies and media channels.

### **Unit-III**

1. Identifying the areas of business.
2. Understanding financial aspects of the business.
3. Government and private Organizations supporting entrepreneurships in India
4. Generating / arranging funds for the business.

### **Unit-IV**

1. Entrepreneurship in the sports Goods / Equipment.
2. Entrepreneurship in Sports wears.
3. Entrepreneurship in Sports management / Event management.
4. Entrepreneurship in Sports software/fitness / Nutrition.

### **Reference Books:-**

1. Peter Thiel, Zero to One: Notes on Start Ups, or How to Build the Future, 0804139296 (ISBN13: 9780804139298)
2. Guy Kawasaki (2004), The Art of the Start: The Time-Tested, Battle-Hardened Guide for Anyone Starting Anything, 1591840562 (ISBN13: 9781591840565)
3. Roger Cowdrey, Creating an Entrepreneurial Mindset-Failure IS an Option!

**BPES702**

**Credit 4**

### **Test & Measurement**

**Unit-I** Introduction to Test & Measurement & Evaluation

1. Meaning of Test, Measurement & Evaluation in Physical Education.
2. Importance of Test, Measurement & Evaluation in Physical Education.
3. Criteria of selecting an appropriate test.
4. Type and classification of test

#### **Unit-II** Construction and Administration of Test

1. Administration of testing programme.
2. Construction of Physical Fitness / Efficiency Test
3. General types of sports skill test items
4. Construction of sports skill test

#### **Unit-III** Physical Fitness Tests

1. Youth Physical Fitness Test.
2. Tuttle Pulse Ratio Test
3. Newton Motor Ability Test
4. Phillips JCR Test

#### **Unit-IV** Sports Skill Tests

1. Lockhart and McPherson Badminton test
2. Johnson Basketball test
3. McDonald soccer test
4. S.A.I Hockey test

#### **References:**

1. Bangsbo, J. (1994). Fitness training in football: A scientific approach. Bagsvaerd, Denmark:Ho+Storm.
2. Barron, H. M., &Mchee, R. (1997). A practical approach to measurement in physical education.Philadelphia: Lea and Febiger.
3. Barron, H.M. &Mchee, R. (1997). A Practical approach to measurement in physical education.Philadelphia: Lea and Febiger.
4. Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi:D.V.S. Publications.

**BPES703****Credit 4****Talent Identification****Unit-I** Introduction, Meaning, Concept and scope of talent identification in sports

1. Need and Importance of talent identification.
2. Principles of talent identification.
3. Scope of Talent identification.
4. Role of Physical Education teacher / coach in talent identification.

**Unit-II** Understanding Human Body

1. Genetics and Environment and their role in sports performance.
2. Body types and their relation to sports.
3. Basic Anthropometry
4. Anthropometric assessment and data recording.

**Unit-III** Fitness Tests

1. AAPHER youth fitness test
2. JCR test
3. Coopers 12 minute run/walk test
4. Harvard Step test.

**Unit-IV** Skill Tests for talent identification

1. Skill tests for Ball games
2. Skill test for Racket games.
3. Skill test for Athletic abilities
4. Psychological tests related to sports abilities.

**Reference Books:-**

1. Russell K. Athletic talent: from detection to perfection. *Sci Period Res Technol Sport* 1989; 9 (1): 1–6Google Scholar
2. Williams AM, Reilly T. Talent identification and development in soccer. *J Sport Sci* 2000; 18 (9): 657–67
3. Bartmus U, Neumann E, de Marées H. The talent problem in sports. *Int J Sports Med* 1987; 8 (6): 415–6
4. Barron, H.M. & Mchee, R. (1997). *A Practical approach to measurement in physical education*. Philadelphia: Lea and Febiger.
5. Kansal, D.K. (1996). *Test and measurement in sports and physical education*. New Delhi: D.V.S. Publications

## **BPES704**

## **Credit 4**

**Specialization (kho-kho/basketball/boxing/table tennis/ cricket / handball / wrestling /weightlifting/ football/high jump/hammer throw/javelin/competitive walking) kho-kho: KHO KHO**

### **Unit-I**

1. Origin and brief history of Kho-Kho.
2. Development of Kho-Kho in India and worldwide.
3. Establishment of national and international federations/associations of Kho-Kho.
4. Major tournaments of Kho-Kho.
5. Awards associated with Kho-Kho.

### **Unit-II**

1. Measurements and marking of Kho-Kho playfield.
2. Preparation and maintenance of Kho-Kho playfield.
3. Officials, no. of officials and duties of officials in the game of Kho-Kho.
4. Technical equipments for officiating.

### **Unit-III**

1. Fundamental skills of Kho-Kho : a. Offensive skills : i. Giving Kho ii. Covering iii. Tapping iv. Diving b. Defensive skills : i. Running ii. Chain iii. Ring

2. Lead-up games.
3. Scott Motor Ability Test.

#### **Unit-IV**

1. Major rules and regulations of Kho-Kho.
2. Important Signals in Kho-Kho.
3. Knowledge of score sheet.
4. Related sports terminologies.
5. Eminent sports personalities associated with Kho-Kho.

#### **Reference Books:**

1. “Training Manual of Kho-Kho”, NSNIS, Patiala.
2. Chakaraborty, G.(2002), “Kho-Kho Avlokan”, Khel Sahitya Kendra, New Delhi.
3. Pandey, L. (1982), “Kho-Kho Sarvaswa”, Metropolis, New Delhi.
4. “Official Rule Book of Kho-Kho”, International Kho-Kho Federation.

#### **BASKETBALL:**

##### **Unit-I**

1. Origin and brief history of BasketBall.
2. Development of BasketBall in India and worldwide.
3. Establishment of national and international federations/associations of BasketBall.
4. Major tournaments of BasketBall.
5. Awards associated with BasketBall.

##### **Unit-II**

1. Measurements and marking of BasketBall court.
2. Specifications of Basketball.
3. Preparation and maintenance of BasketBall court.
4. Officials, no. of officials and duties of officials in the game of BasketBall.

5. Technical equipments for officiating.

### **Unit-III**

1. Fundamental skills of Basketball : a. Dribbling b. Passing c. Shooting d. Defense
2. Lead-up games.
3. Scott Motor Ability Test.

### **Unit-IV**

1. Major rules and regulations of Basketball.
2. Important Signals in Basketball.
3. Knowledge of score sheet.
4. Related sports terminologies.
5. Eminent sports personalities associated with Basketball.

### **Reference Books:**

1. "Training Manual of Basketball", NSNIS, Patiala.
2. Drewelt, J. (2007), "How to improve Basketball", Crabtree Publishing Co., USA.
3. Sharma, O.P. (2003), "Basketball Skills and Rules", Khel Sahitya Kendra, New Delhi.
4. Thani, Lokesh (1995), "Skills and Tactics of Basketball", Sports Publication, New Delhi.
5. "Official Rule Book of Basketball", International Basketball Federation.

## **BOXING:**

### **Unit-I**

1. Origin and brief history of Boxing.
2. Development of Boxing in India and worldwide.
3. Establishment of national and international federations/associations of Boxing.
4. Major tournaments of Boxing.
5. Awards associated with Boxing.

### **Unit-II**

1. Measurements of Boxing Arena/Ring.
2. Specifications of equipments related to Boxing.
3. Preparation and maintenance of Boxing Arena/Ring.
4. Officials, no. of officials and duties of officials in the game of Boxing.
5. Technical equipments for officiating.

### **Unit-III**

1. Fundamental skills of Boxing : a. Shot Ring Boxing b. Middle Ring Boxing c. Long Ring Boxing
2. Lead-up games.
3. Scott Motor Ability Test.

### **Unit-IV**

1. Major rules and regulations of Boxing.
2. Important Signals in Boxing.
3. Knowledge of score sheet.
4. Related sports terminologies.
5. Eminent sports personalities associated with Boxing.

### **Reference Books:**

1. "Training Manual of Boxing", NSNIS, Patiala.
2. Gotay, A.L.(2008), "Boxing Basics", Outskirts Press, USA.
3. "Official Rule Book of Basketball", International Basketball Federation.

### **TABLE TENNIS:**

#### **Unit-I**

1. Origin and brief history of Table Tennis.
2. Development of Table Tennis in India and worldwide.

3. Establishment of national and international federations/associations of Table Tennis.
4. Major tournaments of Table Tennis.
5. Awards associated with Table Tennis.

### **Unit-II**

1. Measurements of T-T Table.
2. Specifications of equipments related to Table Tennis.
3. Preparation and maintenance of T-T Table.
4. Officials, no. of officials and duties of officials in the game of Table Tennis.
5. Technical equipments for officiating.

### **Unit-III**

1. Fundamental skills of Table Tennis : a. Service b. Drive (Forehand and Backhand) c. Shot (Forehand and Backhand) d. Loop
2. Lead-up games. 3. Scott Motor Ability Test.

### **Unit-IV**

1. Major rules and regulations of Table Tennis.
2. Important Signals in Table Tennis.
3. Knowledge of score sheet.
4. Related sports terminologies.
5. Eminent sports personalities associated with Table Tennis.

### **Reference Books:**

1. "Training Manual of Table Tennis", NSNIS, Patiala.
2. Heton, J. (2009), "Table Tennis : Skills, Techniques and Tactics", Crowood Press, USA.
3. Macfee, R.(2009), "Table Tennis : Steps to Success", Human Kinetics, USA.
4. Phillisco, R.R.(2009), "Superior Table Tennis : The Science and Art" , Create space Publishers,USA.
5. "Official Rule Book of Table Tennis", International Table Tennis Federation.

**BPES705****Credit 4****Research Methodology****Unit-I**

Definition of Research and its characteristics. Evidence based practice. Types of Research. Criteria for good research. Research problem. Review of literature. Meaning of research designs. Significance of research designs. Features of good research design. Important concept relating to research design. Variables and its types.

Research hypothesis, definition, formulation and types. Experimental and non-experimental hypothesis testing research. Experimental and control groups. Treatments. Experiment. Experimental units. Types of Research design: advantages and disadvantages. Meta analyses.

**Unit-II**

Importance of ethics in research, ethical issues in human subjects research, ethical principles that govern research with human subjects. Components of an ethically valid informed consent for research. Plagiarism and its guidelines.

Introduction to Biostatistics, Frequency Distribution, Variable and Attribute, Line-diagram, Bar-diagram, Pie chart, Histogram, Mean, Median and Mode.

Variance, Standard deviation; Standard error of mean, Null hypothesis, Level of significance and Probability; Regression and correlation.

**Unit-III**

Student's t-test, Fisher's t-test, Chi-square test, Analysis of Variance (ANOVA), ANCOVA. Introduction and Application of Statistical Softwares

**Reference Books:**

1. A Text book of Biostatistics, by A.K.Sharma, Discovery publishing house
2. Introduction to Biostatistics, By Dr. Pranab Kumar Banerjee, S. Chand Publishers
3. Research Methodology: Methods and Techniques Book by C. R. Kothari
4. Dutta N.K. Fundamentals of Bio-Statistics. 2002; Kanishka Publishers, New Delhi.
5. Gupta S.P. Statistical Methods. 2004; S. Chand & Sons, New Delhi

6. Ruud H. Koning and James H. Albert ( 2008) Statistical thinking in sports. Chapman & Hall/CRC

## **BPES706**

**Credit 2**

### **Strength and Conditioning**

#### **Unit-I**

Cardiovascular Adaptations to Endurance and Strength Training, Hypertrophy and

Cardiomyopathy in Young and Older Athletes, Heart rate training zone, Effects Of High Altitude, Sudden Cardiac Death and Exercise in Healthy Adults. Modes of testing Muscular strength, endurance and flexibility, Body composition and Anthropometry, Balance, Agility, Coordination, Reaction time and Anaerobic power, Physical Fitness Batteries.

#### **Unit-II**

Respiratory System Adaptations to Endurance and Strength Training, Ventilatory response to exercise and its use in sports, Ventilatory threshold, Effects Of Exercise, response to steady-state exercise, Exercise-Induced Bronchoconstriction, Control of Breathing during exercise; The Respiratory System under Stress, respiratory systems adaptation to long-term exercise, Adaptations to systematic Training, Effects Of High Altitude

#### **Unit-III**

Muscular Mechanisms in Aerobic Endurance Training; Neural Mechanisms in Aerobic Endurance Training, Muscle Molecular Mechanisms in Strength Training, Muscle Property Changes in Strength Training, Neural Mechanisms in Strength Training.

Initial responses of the neuromuscular systems to exercise; Training Adaptation of the Neuromuscular System

### **Practicals**

Submaximal Exercise Testing: Submaximal Bench Step Test, Submaximal Treadmill Test, Submaximal Cycle Ergometer Test

Pulmonary Function Testing: Lung Volumes and Capacities, Pulmonary Function MMT for Major Muscle Groups of the body

**Reference Books:**

1. Roy J. Shephard and Henry S. Miller, Jr. (1999) Exercise and the Heart in Health and Disease.
2. Shephard, R.J. and Astrand, P.-O. (1992) Endurance in sport. Blackwell Science Ltd, USA.
3. McArdle, W.D., Katch, F.I., Katch, V.L. (2006) Essentials of Exercise Physiology. Lippincott Williams and Wilkins, USA.
4. Victor F. Froelicher, Jonathan Myers (2006) Exercise and the heart. Elsevier Inc.
5. Christopher B. Cooper and Thomas W. Storer (2004) Exercise testing and interpretation- A practical approach. Cambridge University Press.
6. Christopher Bell. Cardiovascular Physiology in Exercise and Sport. 1st Edition. 2008; Churchill Livingstone

**SEMESTER VIII****Credit 22****BPES 801 Thesis**  
**BPES802 Internship****12 credit**  
**10 credit**