

# WEST BENGAL STATE UNIVERSITY



## **Department of Physical Education** **DRAFT OF THE SEMESTER-WISE COURSE STRUCTURES**

### **Final Draft Syllabus** **B.A. (General) Course in Physical Education**

**UNDER THE CHOICE BASED CREDIT SYSTEM ( CBCS )**  
**Recommended by the University Grants Commission (UGC)**

**[To be implemented from the Academic Session 2018-19]**

## **Introduction**

The University Grants Commission (UGC) has taken various measures by means of formulating regulations and guidelines and updating them, in order to improve the higher education system and maintain minimum standards and quality across the Higher Educational Institutions in India. The various steps that the UGC has initiated are all targeted towards bringing equity, efficiency and excellence in the Higher Education System of country. These steps include introduction of innovation and improvements in curriculum structure and content, the teaching-learning process, the examination and evaluation systems, along with governance and other matters. The introduction of Choice Based Credit System is one such attempt towards improvement and bringing in uniformity of system with diversity of courses across all higher education institutes in the country. The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising of core, elective, skill enhancement or ability enhancement courses. The courses shall be evaluated following the grading system, is considered to be better than conventional marks system. This will make it possible for the students to move across institutions within India to begin with and across countries for studying courses of their choice. The uniform grading system shall also prove to be helpful in assessment of the performance of the candidates in the context of employment.

## **Outline of the Choice Based Credit System being introduced**

**1. Core Course (CC):** A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.

**2. Elective Course:** Generally a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/domain or nurtures the student's proficiency/skill is termed as an Elective Course.

**Discipline Specific Elective Course (DSEC):** Elective courses that are offered by the main discipline/subject of study is referred to as Discipline Specific Elective. The University/Institute may also offer discipline related Elective courses of interdisciplinary nature (to be offered by main discipline/subject of study).

**Generic Elective Course (GEC):** An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective.

### **3. Ability Enhancement Courses/ Skill Enhancement Courses**

**Ability Enhancement Compulsory Course (AECC):** Ability enhancement courses are the courses based upon the content that leads to Knowledge enhancement. They (i) Environmental Science, (ii) English Communication) are mandatory for all disciplines.

**Skill Enhancement Course (SEC):** These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based instruction.

**Three year B.A. General Course in Physical Education  
Structure of Syllabus under Semester System with CBCS  
to be effective from the Academic Session 2018-19**

**Year 1: Semester 1**

COURSE CODE	COURSE TITLE	COURSE TYPE	CREDIT (L -T- P )	L-T-P HOURS	TOTAL MARKS	INTERNAL MARKS	EXTERNAL MARKS
PEDGCOR01P	Part-A: Foundation & History of Physical Education	Core Course	L = 4	4X15=60	50	0	50
	Part-B: Marching, Callisthenics, Aerobics	Core Course	P= 2	2X30=60	25	15	10
PEDGCOR02T	Discipline-2 (core-1) other than Physical Education	Core Course	6		75		
ENGLCoR01T	English – 1	Core Course	6		75		
ENVSAEC01T	Environmental Studies	AECC-1	2		25		
<b>SEMESTER TOTAL</b>			<b>20</b>		<b>250</b>		

**Year 1: Semester 2**

COURSE CODE	COURSE TITLE	COURSE TYPE	CREDIT (L -T- P )	L-T-P HOURS	TOTAL MARKS	INTERNAL MARKS	EXTERNAL MARKS
PEDGCOR03P	Part-A: Management of Physical Education	Core Course	L = 4	4X15=60	50	0	50
	Part-B: Layout of Play Fields	Core Course	P= 2	2X30=60	25	15	10
PEDGCOR04T	Discipline-2 (core-2) other than Physical Education	Core Course	6		75		
ENGLCoR02T	English – 1	Core Course	6		75		
ENGSAEC01M	English / Modern Indian Language	AECC-2	2		25		
<b>SEMESTER TOTAL</b>			<b>20</b>		<b>250</b>		

**Year 2: Semester 3**

COURSE CODE	COURSE TITLE	COURSE TYPE	CREDIT (L -T- P )	L-T-P HOURS	TOTAL MARKS	INTERNAL MARKS	EXTERNAL MARKS
PEDGCOR05P	Part-A: Anatomy, Physiology & Exercise Physiology	Core Course	L = 4	4X15=60	50	0	50
	Part-B: Laboratory Practical	Core Course	P= 2	2X30=60	25	15	10
PEDGCOR06T	Discipline-2 (Core-3) other than Physical Education	Core Course	6		75		
	To be selected from other Arts Departments	Core Course	6		75		
PEDSSEC01M	Track & Field or Kasrate	SEC	P=2	2X30=60	25	25	0
<b>SEMESTER TOTAL</b>			<b>20</b>		<b>250</b>		

**Year 2: Semester 4**

COURSE CODE	COURSE TITLE	COURSE TYPE	CREDIT (L -T- P )	L-T-P HOURS	TOTAL MARKS	INTERNAL MARKS	EXTERNAL MARKS
PEDGCOR07P	Part-A: Health Education, Test, Measurement & Evaluation in Physical Education	Core Course	L = 4	4X15=60	50	0	50
	Part-B: Fitness Test	Core Course	P= 2	2X30=60	25	15	10
PEDGCOR08T	Discipline-2 (core-4) other than Physical Education	Core Course	6		75		
	To be selected from other Arts Departments	Core Course	6		75		
PEDSSECo2M	Gymnastics & Yoga	SEC	P=2	2X30=60	25	25	0
<b>SEMESTER TOTAL</b>			<b>20</b>		<b>250</b>		

**Year 3: Semester 5**

COURSE CODE	COURSE TITLE	COURSE TYPE	CREDIT (L -T- P )	L-T-P HOURS	TOTAL MARKS	INTERNAL MARKS	EXTERNAL MARKS
PEDGDSE01T	Any One- 1. Sports Training & Mechanics 2. Therapeutic Aspect of Physical Activities & Lifestyle	DSE	6		75		
	Any One- 1. Other than Physical Education 2. Other than Physical Education	DSE	6		75		
		GE	6		75	25	50
		SEC	2		25		
<b>SEMESTER TOTAL</b>			<b>20</b>		<b>250</b>		

**Year 3: Semester 6**

COURSE CODE	COURSE TITLE	COURSE TYPE	CREDIT (L -T- P )	L-T-P HOURS	TOTAL MARKS	INTERNAL MARKS	EXTERNAL MARKS
	Any One- 1. Psychology in Physical Education & Sports 2. Project Work	DSE	6		75		
	Any One- 1. Other than Physical Education 2. Other than Physical Education	DSE	6		75		
		GE	6		75	25	50
		SEC	2		25	25	0
<b>SEMESTER TOTAL</b>			<b>20</b>		<b>250</b>		

## **Year 1: Semester 1**

### **FOUNDATION AND HISTORY OF PHYSICAL EDUCATION**

#### **Paper 1: Semester 1**

**Subject Code : PEDGCOR01P**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [120 Hours]**

**TOTAL CLASS HOURS : 120 [LECTURE HOURS 60 & PRACTICAL HOURS 60]**

#### **PART – A [THEORY]**

##### **Unit- 1: Introduction**

**[15 L]\***

Meaning and definition of Physical Education, Aim and objectives of Physical Education, Modern concept and changing concepts of Physical Education, Importance, Nature and scope of Physical Education.

##### **Unit- 2: Biological, Sociological and Philosophical Foundations of Physical Education**

Biological Foundation- Meaning and definition of growth and development. Factors affecting growth and development. Differences of growth and development. Principles of growth and development, Age- Chronological age, anatomical age, physiological age and mental age. Sociological Foundation- Meaning and definition of Sociology, Society and Socialization. Role of games and sports in National and International integration, Introduction of philosophies – naturalism, pragmatism, realism, idealism.

**[20 L]**

##### **Unit- 3: History of Physical Education**

**[15 L]**

Historical development of Physical Education and Sports in India- Pre-Independence period and Post-Independence period, Olympic Movement- Ancient Olympic Games and Modern Olympic Games, Brief historical background of Asian Games and Commonwealth Games, Modern and Ancient Historical perspectives: USA, UK, Greece, Rome, and India.

##### **Unit- 4: Yoga Education**

**[10 L]**

Meaning and definition of the term Yoga, types, aim, objectives and important of Yoga, History of Yoga, Astanga Yoga, Hatha Yoga.

#### **PART – B [PRACTICAL]**

### **MARCHING, CALLISTHENICS, AEROBICS**

- 1. Development of physical fitness through Marching [25 L]**
- 2. Callisthenics [15 L]**
- 3. Development of physical fitness and co-ordination through Aerobics. [20 L]**

#### **Suggested Readings**

- ❖ Graham, G. (2001) Teaching Children Physical Education: Becoming a Master Teacher. Human Kinetics, Champaign, Illinois, USA.
- ❖ Kamlesh, M.L. & Singh, M.K. (2006) Physical Education (Naveen Publication).
- ❖ Lau, S.K. (1999) Great Indian Players, New Delhi, Sports.
- ❖ Lumpkin, A. (2007) Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, USA.
- ❖ Siedentop, D. (2004) Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
- ❖ Shaffer, D.R. (2002) Development Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
- ❖ Shukla, (2000) Mother on Education, National Council of Teacher Education, New Delhi.
- ❖ Singh, A. et al. (2000) Essential of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
- ❖ Wuest, D.A. & C.A. Bucher (2006) Foundation of Physical Education, Exercise Science, and Sports. McGraw Hill Companies Inc.; New York, USA.

\* L = 1 Hour.

## **Year 1: Semester 2**

### **MANAGEMENT OF PHYSICAL EDUCATION AND SPORTS**

**Paper 1: Semester 2**

**Subject Code : PEDGCOR03P**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [120 Hours]**

**TOTAL CLASS HOURS : 120 [LECTURE HOURS 60 & PRACTICAL HOURS 60]**

#### **PART – A [THEORY]**

##### **Unit- 1: Introduction**

**[10 L]\***

Concept and definition of Sports Management, Important of Sports Management, Purpose of Sports Management, Principles of Sports Management.

##### **Unit- 2: Tournaments**

**[20 L]**

Tournaments: Meaning and definition and types of tournaments (Knock-out, League, Combination, Challenge), Procedure of drawing fixture (Knock-out, League, Combination), Method of organising Annual Athletic Meet and Play Day, Method of organising of Intramural and Extramural competition.

##### **Unit- 3: Facilities and Equipment's**

**[20 L]**

Method of calculation of Standard Athletic Track and Field marking, Care and maintenance of Playground and gymnasium, Importance, care and maintenance of sports equipment, Lay- out of Play-Field and Basic Rules: Football, Kabaddi, Kho-Kho, Badminton and Volleyball.

##### **Unit- 4: Leadership**

**[10 L]**

Meaning and definition of leadership, Qualities of good leader in Physical Education, Principles of leadership activities, Hierarchy of Leadership in School, College and University level, Time Table: Meaning, importance and factors affecting Time Table.

#### **PART – B [PRACTICAL]**

### **LAY OUT KNOWLEDGE AND OFFICIATING ABILITY**

**1. Track and Field events.**

**[30 L]**

**2. Games: Football, Kabaddi, Kho-Kho, Badminton and Volleyball (any two).**

**[30 L]**

#### **Suggested Readings**

- ❖ Broyles, F. J. & Rober, H. D. (1979). Administration of sports, Athletic programme: A Managerial Approach. New York: Prentice hall Inc.
- ❖ Bucher, C. A. (1983). Administration of Physical Education and Athletic programme, St. Lolis: The C.V. Hosby Co.
- ❖ Kozman, H.C. Cassidy, R. & Jackson, C. (1960). Methods in Physical Education. London: W.B. Saunders Co.
- ❖ Pandey, L.K. (1977). Methods in Physical Education, Delhe: Metropolitan Book Depo.
- ❖ Sharma, V.M. & Tiwari, R.H.: (1979). Teaching Methods in Physical Education. Amaravati: Shakti Publication.
- ❖ Thomas, J. P. (1967). Organization & administration of Physical Education. Madras: Gyanodayal Press.
- ❖ Tirunarayanan, C. & Hariharan, S. (1969). Methods in Physical Education, Karaikudi: South India Press.
- ❖ 8. Voltmer, E. F. & Esslinger, A. A. (1979). The organization and administration of Physical Education. New York: Prentice Hall Inc.
- ❖ 9. Singh, A. et al. (2010) Essential of Physical Education. Kalyayani Publishers.

\* L = 1 Hour.

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**Year 2: Semester 3**

**ANATOMY, PHYSIOLOGY AND EXERCISE PHYSIOLOGY**

**Paper 1: Semester 3**

**Subject Code : PEDGCOR05P**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [120 Hours]**

**TOTAL CLASS HOURS : 120 [LECTURE HOURS 60 & PRACTICAL HOURS 60]**

**PART – A [THEORY]**

**Unit- 1: Introduction**

**[10 L]\***

Meaning and definition of Anatomy, Physiology and Exercise Physiology, Importance of Anatomy, Physiology and Exercise Physiology in Physical Education, Human Cell- Structure and function, Tissue- Types and functions.

**Unit- 2: Musculo-skeletal System**

**[16 L]**

Skeletal System- Structure of Skeletal System. Classification and location of bones and joints. Anatomical differences between male and female, Muscular System- Type, location, function and structure of muscle, Types of muscular contraction, Effect of exercise on muscular system.

**Unit- 3: Circulatory and Respiratory System**

**[24 L]**

Blood- Composition and function, Heart- Structure and functions. Mechanism of blood circulation through heart. Blood Pressure, Athletic Heart and Bradycardia, Effect of exercise on circulatory system, Structure and function of Respiratory organs, Mechanism of Respiration, Vital Capacity, O<sub>2</sub> Debt and Second Wind, Effect of exercise on respiratory system.

**Unit- 4: Nervous and Endocrine System**

**[10 L]**

Meaning of Nervous System, Parts of Nervous System, system-structure of brain, spinal cord, Neuron, reflex action, Reciprocal Innervations. Meaning of Endocrine Gland, Function and Location of pituitary, Thyroid and Adrenal Glands.

**PART – B [LABORATORY PRACTICAL]**

1. Assessment of, BMI, Heart rate, Blood Pressure, Respiratory Rate, Pick Flow Rate and Vital Capacity. **[30 L]**
2. Anthropometric measurement (Length, wide and circumference of bones) , Body fat%. **[30 L]**

**Suggested Readings**

- ❖ Amrit Kumar, R, Moses. (1995). Introduction to Exercise Physiology. Madras: Poompugar Pathipagam.
- ❖ Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
- ❖ David, L Costill. (2004). Physiology of Sports and Exercise, Human Kinetics.
- ❖ Fox, E.L., and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.
- ❖ Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co. Richard, W. Bowers. (1989). Sports Physiology, WMC: Brown Publishers.
- ❖ SandhyaTiwaji. (1999). Exercise Physiology, Sports Publishers.
- ❖ Shaver, L. (1981). Essentials of Exercise Physiology. New Delhi: Subject Publications.
- ❖ Vincent, T. Murche. (2007). Elementary Physiology. Hyderabad: Sports Publication.
- ❖ William, D. McAradle. (1996). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams and Wilkins Company

\* L = 1 Hour.

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**TRACK & FIELD**

**Paper 2:**

**Semester 3**

**Subject Code :**

**PEDSSECo1M**

**Full Marks: 25**

**[Internal assessment/Practical – 15**

**Marks] Total Credits : 2**

**[60 Hours]**

**TOTAL CLASS HOURS : 60 [PRACTICAL HOURS 60]**

**Unit-1 : Track Events**

**[15**

**L]\***

Starting Techniques: Standing start and Crouch start (its variations) use of Block, Acceleration with proper running techniques, Finishing technique: Run Through, Forward Lunging and Shoulder Shrug, Relay Race: Starting, Baton Holding, Carrying, Baton Exchange in between zone, and Finishing.

**Unit-2 : Field events (any two)**

**[45**

**L]**

1. Long Jump: Approach Run, Take-off, Flight in the air (Hang Style/Hitch Kick) and Landing.
2. High jump: Approach Run, Take-off, Bar Clearance (Straddle) and Landing.
3. Shot put: Holding the Shot, Placement, Initial Stance, Glide, Delivery Stance and Recovery (Perry O'Brien Technique).
4. Discus Throw: Holding the Discus, Initial Stance, Primary Swing, Turn, Release and Recovery (Rotation in the circle).
5. Javelin Throw: Grip, Carry, Release and Recovery (3/5 Impulse stride).

**\* L = 1 Hour.**

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**KARATE (MARSHAL ART)**

**Paper 2:**

**Semester 3 Subject**

**Code : PEDSSECo1M**

**or**

**Full Marks: 25**

**[Internal assessment/Practical – 15**

**Marks] Total Credits : 2**

**[60 Hours]**

**TOTAL CLASS HOURS : 60 [PRACTICAL HOURS 60]**

**Unit-1 : Fundamental Skills**

**[15 L]\***

1. **Arm Techniques (any ten):** Punch, Strike, Rising punch, Hook punch, Mountain punch, Two handed punch, Parallel punch, Scissors punch, Flowing punch, Bent wrist strike, Eagle hand, Open hand, Straight punch, Upper punch, Back fist strike, Round hook punch, Jab punch, Reverse punch.



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2. **Foot Techniques (any five):** Front kick (snap & thrust), Stomping joint kick, Knee kick, Double front kick, Jump kick, Swing kick, Side kick (snap & thrust), Round kick, Back kick, Foot sweep, Heel drop, Stomp (strike).
  3. **Foot Movements (any five):** Sliding step, Shuffling step, Natural stepping, Dragging step, Kicking foot, Moving, Landing, One foot length.
  4. **Stances (any five):** Closed foot stance, Parallel stance, Natural stance, straddle leg stance, horse riding stance, Hourglass stance, Front stance, Half front stance, Free stance, Back stance, Cat stance, "L" stance, Dide facing straddle stance, Squat stance.
  5. **Blocking Techniques (any ten):** Block, Rising block (Head), Inside circular block, Sweeping block, Side block, Two hand scoop block, Palm heel sweeping block, Palm heel descending block, Bow & Arrow block, Back hand circling press block, Circular elbow block, Back-hand hook block, Middle level inward pulling block, Cross block, Hook block, Arm wedge, Downward block, Grasping block, Knife hand block, Palm heel block, inside forearm block, Wrist block, Back hand block, Elbow block, Knee block, Double handed block.
  6. Game practice with application of Rules and Regulations.
- A. Rules and their interpretation and duties of officials. (45L)**

\*L = 1 Hour.

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**Year 2: Semester 4**

**HEALTH EDUCATION, TEST, MEASUREMENT & EVALUATION IN PHYSICAL EDUCATION**

**Paper 1:**

**Semester 4**

**Subject Code :**

**PEDGCOR07P**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [120 Hours]**

**TOTAL CLASS HOURS : 120 [LECTURE HOURS 60 & PRACTICAL HOURS 60]**

**PART – A [THEORY]**

**Unit- 1: Introduction**

**[18**

**L]\***

Concept, definition and dimension of Health, Definition, aim, objectives and principles of Health Education, School Health Program- Health Service, Health Instruction, Health Supervision, Health appraisal and Health Record, Communicable Diseases & Non-communicable Diseases (Malaria, Cholera, Influenza and Chicken Pox, Obesity, Diabetes), Basic Nutrients: - Protein, Carbohydrates, Fat, Vitamins, Minerals and Water, Balance Diet, Athletic Diet, Standard Diet

**Unit- 2: Health and First-aid Management**

**[18 L] First aid- M**

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School, College, Play-ground, Streets, Postural deformities- Causes and corrective  
exercise of Kyphosis, Lordosis, Scoliosis, Knock Knees and Flat Foot.

**Unit-3: Introduction Test, measurement & Evaluation** [12 L]

Concept of test, measurement & Evaluation, Criteria of good test, Principles of Evaluation, Importance of Test, Measurement and Evaluation in Physical Education and Sports.

**Unit- 4: Measurements of Body Compositions and Somatotype Assessment** [18 L]

Body Mass Index (BMI)- Concept and method of measurement, Body Fat- Concept and method of measurement, Lean Body Mass (LBM)- Concept and method of measurement, Somatotype- Concept and method of measurement.

**PART – B [ PRACTICAL]**  
**FITNESS TEST**

**Unit-1: Fitness Test** [30 L]

- 1 Kraus-Weber Muscular Strength Test
- 2 AAHPER Youth Fitness Test
- 3 Queens College Step Test
- 4 Harvard Step Test
- 5 Assessment of% body fat

**Sports Skill Test** [30 L]

- 1 4.1 Lockhart and McPherson Badminton Skill Test
- 2 4.2 Johnson Basketball Test Battery
- 3 4.3 McDonald Soccer Test
- 4 4.4 Brady Volleyball Test

**Suggested Readings**

- ❖ Bucher, Charles A. "Administration of Health and Physical Education Programme".
- ❖ Delbert, Oberteuffer, et. al." The School Health Education".
- ❖ Ghosh, B.N. "Treaties of Hygiene and Public Health".
- ❖ Hanlon, John J. "Principles of Public Health Administration" 2003.
- ❖ Turner, C.E. "The School Health and Health Education".
- ❖ Moss et. al. "Health Education" (National Education Association of U.T.A.).
- ❖ Nemir A. "The School Health Education" (Harber and Brothers, New York).
- ❖ Nutrition Encyclopedia, edited by Delores C.S. James, The Gale Group, Inc.
- ❖ Boyd-Eaton S. et al (1989) The Stone Age Health Programme: Diet and Exercise as Nature Intended. Angus and Rober tson.
- ❖ Terras S. (1994) Stress, How Your Diet can Help: The Practical Guide to Positive Health Using Diet, Vitamins, Minerals, Herbs and Amino Acids, Thorons .
- ❖ Authors Guide (2013) ACSM's Health Related Physical Fitness Assessment Manual, USA: ACSM Publications.
- ❖ 2. Collins, R.D., & Hodges P.B. (2001) A Comprehensive Guide to Sports Skills Tests and Measurement (2nd edition) Lanham: Scarecrow Press.
- ❖ 3. Cure ton T.K. (1947) Physical Fitness Appraisal and Guidance, St. Louis: The C. Mosby Company.
- ❖ 4. Getchell B (1979) Physical Fitness A Way of Life, 2nd Edition New York.
- ❖ 5. John Wiley and Sons, Inc Jenson, Clayne R and Cynt ha, C. Hirst (1980) Measurement in Physical Education and Athletics, New York, Macmillan Publising Co. Inc.
- ❖ 6. Kansal D.K. (1996), "Test and Measurement in Sports and Physical Education, New Delhi: DVS Publications.
- ❖ 7. Krishnamurthy (2007) Evaluation in Physical Education and Sports, New Delhi; Ajay Verma Publication.
- ❖ 8. Vivian H. Heyward (2005) Advance Fitness Assessment and Exercise Prescription, 3rd Edition, Dallas TX: The Cooper Institute for Aerobics Research.
- ❖ 9. Wilmore JH and Costill DL. (2005) Physiology of Sport and Exercise: 3rd Edition. Champaign IL: Human Kinetics.
- ❖ 10. Yobu, A (2010), Test, Measurement and Evaluation in Physical Education in Physical Education and Sports. New Delhi; Friends Publications

\* L = 1 Hour.

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## GYMNASTICS AND YOGA

Paper 2: Semester 4

Subject Code : PEDSSEC02M

Full Marks: 25

[Internal assessment/Practical – 15 Marks]

Total Credits : 2 [60 Hours]

TOTAL CLASS HOURS : 60 [PRACTICAL HOURS 60]

### Unit-1: GYMNASTICS

[20 L]\*

#### 1. Compulsory

- ❖ Forward Roll
- ❖ T-Balance
- ❖ Forward Roll with Split leg
- ❖ Backward Roll
- ❖ Cart-Wheel

#### 2. Optional (any two)

- ❖ Dive and Forward Roll
- ❖ Hand Spring
- ❖ Head Spring
- ❖ Neck Spring
- ❖ Hand Stand and Forward Roll
- ❖ Summersault

### Unit-2: YOGA

[40 L]

#### 3. Asanas

- ❖ **Standing Position** (Ardhachandrasana, Brikshasana, Padahasthasana)
- ❖ **Sitting Position** (Ardhakurmasana, Paschimottanasana, Gomukhasana)
- ❖ **Supine Position** (Setubandhasana, Halasana, Matsyasana)
- ❖ **Prone Position** (Bhujangasana, Salvasana, Dhanurasana)
- ❖ **Inverted Position** (Sarbangasana, Shirsasana, Bhagrasana)

#### 4. Pranayama (any two) [Kapalbhati, Bhramri, Anulam, Vilom].

\* L = 1 Hour.

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## Year 3 : Semester 5

### SPORTS TRAINING & MECHANICS

Paper 1: Semester 5

Subject Code : PEDGDSE01T

Full Marks: 75

[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]

Total Credits : 6 [90 Hours]

TOTAL CLASS HOURS : 90 [LECTURE HOURS 75 & TUTORIAL HOURS 15]

### Unit- 1: Introduction

[20 L]\*

Meaning, definition, Aim and characteristics of Sports Training. Principles and Importance of Sports Training, Warming up, cooling down and Conditioning -Meaning, types, methods and principles, Training Methods- Circuit Training, Interval Training, Weight Training, Fartlek Training

**Unit- 2: Training Techniques** [20 L]

Strength- Means and methods of strength development, Speed- Means and methods of speed development, Endurance- Means and methods of endurance development, Flexibility- Means and methods of flexibility development.

**Unit- 3: Training Load and Adaptation** [30 L]

Training Load- Meaning, definition, types and factors of training load, Over Load- Meaning, causes, symptoms and tackling of over load, Adaptation- Meaning and conditions of adaptation, Components of training load, 3.4 Periodization- Meaning, types, aim and contents of different periods.

**Unit- 4: Mechanical Principles Applied to Sports** [20 L]

Law of Motion, Equilibrium - its type and Law, Centre of Gravity, Force and its types, Lever and its Types.

**Suggested Readings**

- ❖ Baechle T R & Earle R W (2000). Essentials of strength training and conditioning. Human Kinetics. USA.
- ❖ Bompa. T.O. (1994). Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.). Kandwall Hunt Publication Co.
- ❖ Bompa. T.O. and G. Gregory Hett. (2009) Periodization: Theory and Methodology of Training.
- ❖ Dick FW (1999). Sport training Principles. A and C Black. London.
- ❖ Knopf K (2008). Total Sports Conditioning for Athletes 50 + Ulysses Press. Berkeley. California. USA.
- ❖ Newton H (2006). Explosive lifting for sports. Human Kinetics. US.
- ❖ Philipp A Joan and Wilkerson Jerry D (Joan A. Philipp & Jerry D. Wilkerson.
- ❖ Singh Hardayal (1991). Science of Sport Training. D.V.S Pub. Delhi.
- ❖ Thomas R. Baechle and Roger W. Earle, (2000).
- ❖ Singh MK (2008). Comprehensive Badminton (Scientific Training). Friends Publication.
- ❖ Beer, Johnson and Dewolf, Mechanics of Materials, Tata McGraw-Hill Education
- ❖ H.J.Shah and S.B. Junnarkar, Mechanics of Structures Vol.1, Charotar Publishing House Pvt Limited
- ❖ Brendan Burket, Sport Mechanics for Coaches-3rd Edition, ISBN-13: 9780736083591

\* L = 1 Hour.

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**OR**

**THERAPEUTIC ASPECT OF PHYSICAL ACTIVITIES AND LIFESTYLE**

**Paper 1: Semester 5**

**Subject Code : PEDGDSE01T**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [90 Hours]**

**TOTAL CLASS HOURS : 90 [LECTURE HOURS 75 & TUTORIAL HOURS 15]**

**Unit- 1: Introduction** [20 L]\*

Meaning, definition, Aim and Scope of Therapy. Types of Therapy, Definition and Terms of Physiotherapy- Electrotherapy, Exercise-therapy, Massage-therapy, Ergonomics, Rehabilitation, Physical modalities used in Physiotherapy, Exercise Therapy: Corrective, Isotonic, Isometric and Resistance Exercise,

**Unit-2: Therapeutic Aspects of Physical Activities** [20 L]

Exercise of chronic diseases: Osteoporosis, Obesity, Hypertension, Diabetes, Cardiovascular diseases, Basic Principal of Rehabilitation- modalities and Relaxation Techniques, Definition of Massage, Aim and Types of Massage, Physiological effects of Massage, Therapeutic uses of Massage, Rules & direction of Massage, Concept of Yoga Therapy, Principles of Yoga Therapy, Qualities of Yoga Therapist, Yoga Therapy For chronic diseases (Obesity, Hypertension and Diabetes).

**Unit-3: Methods of Physiotherapy** [20 L]

Electro Therapy: meaning, use, principles and Technique and Safety precautions in Electrotherapy, Hydrotherapy: meaning, use, Type, Technique and Safety precautions in Hydrotherapy, Cry Therapy: meaning, use, Type, Physiological effects, Methods of application, and Safety precautions Cry Therapy, Thermo Therapy: meaning, use, Benefits, Methods of application, and Safety precautions Thermo Therapy.

**Unit-4: Physical Activities and Lifestyle** [30 L]

Physical Activities, Health and Wellness- Meaning, definition and Importance of Physical Fitness, Relationship between Physical activities and Wellness, Health and Fitness Active Lifestyle. Health and Performance related Physical Fitness, Physical Activity for different age and Women- Puberty, Adolescent, Post- Adolescent periods, Ageing, Pregnancy, House Wife, Limitation of Female in Athletics, Physical activity for the Disable: Types of Disability, Programme for the disabled.

**Suggested Readings**

- ❖ Jeffrey. Bland “The Disease Delusion: Conquering the Causes of Chronic Illness for a Healthier, Longer, and Happier Life”, Published May 6th 2014 by Harper Wave (first published April 22nd 2014)
- ❖ Wilding, C. (2010). Teach Yourself Cognitive Behavioural Therapy. Teach Yourself Books: London.
- ❖ Branch, R., Wilson, R. (2010). Cognitive Behavioural Therapy For Dummies. John Wiley and Sons: New York.
- ❖ Magee DJ. Orthopedic physical assessment, Philadelphia, W.B. Saunders, 5th edition, 2007
- ❖ Brukner P and Sydney KK. Clinical sports medicine, McGraw-Hill Co., 2011
- ❖ Warwick DJ, Solomon L and Nayagam S. Apley's System of Orthopedics and Fractures, Arnold, 9th edition, 2010.
- ❖ Hoppenfeld S. and VasanthaL.M. Treatment and rehabilitation of fractures, 1st edition, Philadelphia, Lippincott Williams & Wilkins, 2000.
- ❖ Petty NJ and Moore AP. Neuromusculoskeletal examination and assessment: a handbook for therapies. Foreword by GD Maitland Edinburgh, Churchill Livingstone, 4th edition 2011.
- ❖ Kauffman TL. The geriatric rehabilitation manual, Churchill-Livingstone Elsevier, PA, USA, 2007
- ❖ Fox J and Sharp T. Practical Electrotherapy: A Guide to Safe Application. Churchill Livingstone, 2007.

\* L = 1 Hour.

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**MODERN TRENDS AND PRACTICES IN PHYSICAL  
EDUCATION EXERCISE SCIENCES  
(FOR THE STUDENTS OTHER THAN PHYSICAL EDUCATION)**

**Paper 2: Semester 5**

**Subject Code : PEDGGEC01T**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [90 Hours]**

**TOTAL CLASS HOURS : 90 [LECTURE HOURS 75 & TUTORIAL HOURS 15]**

**Unit- 1: Introduction** [12 L]

Meaning, definition and importance of physical Education and Sports, Aims, objectives and scope of Physical Education, Types of sports and their utility in physical education, Meaning, definition and importance of Physical fitness and Motor fitness. Difference between physical fitness and motor fitness. Components of Physical fitness.

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**Unit- 2: Biological, Psychological and Sociological Foundations of Physical Education**

Biological Foundation- Meaning and definition of growth and development. Factors affecting growth and development, Differences of growth and development, Principles of growth and development, Meaning and definition of Psychology. Importance of Psychology in Physical Education, Qualities of good leader in Physical Education, Principles of leadership activities, Sociological Foundation- Meaning and definition of Sociology. Social values and their Importance. Socialization through Sports, Role of games and sports in National and International integration.

[18 L]

**Unit- 3: History of Physical Education**

[12 L]

Historical development of Physical Education and Sports in India- Pre-Independence period and Post-Independence period, Ancient Olympic Games, Modern Olympic Games, Asian Games.

**Unit- 4: Exercise Sciences**

LH - 18

Meaning, definition and importance Exercise and Exercise Physiology, Effects of short and long term exercise on Muscular systems, Effects of short and long term exercise on Circulatory System, Effects of short and long term exercise on Respiratory System.

**Suggested Readings**

- ❖ Kamlesh, M.L. & Singh, M.K. (2006) Physical Education (Naveen Publication).
- ❖ Lumpkin, A. (2007) Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, USA.
- ❖ Siedentop, D. (2004) Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
- ❖ Shaffer, D.R. (2002) Development Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
- ❖ Shukla, (2000) Mother on Education, National Council of Teacher Education, New Delhi.
- ❖ Singh, A. et al. (2000) Essential of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
- ❖ Wuest, D.A. & C.A. Bucher (2006) Foundation of Physical Education, Exercise Science, and Sports. McGraw Hill Companies Inc.; New York, USA.
- ❖ Fahey, T.D., M.P. Insel and W.T. Rath (2006) Fit & Well: Core Concepts and Labs in Physical Fitness, McGraw Hill, New York.
- ❖ Kansal, D.K. (2012) A Practical Approach to Test Measurement and Evaluation Sports and Spiritual Science Publication, New Delhi.
- ❖ Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
- ❖ David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics.
- ❖ Fox, E.L., and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.

\* L = 1 Hour.

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**INDIAN GAMES AND RACKET SPORTS**

**Paper 3: Semester 5**

**Subject Code : PEDSSEC03M**

**Full Marks: 25**

**[Internal assessment/Practical – 15 Marks]**

**Total Credits : 2 [60 Hours]**

**TOTAL CLASS HOURS : 60 [PRACTICAL HOURS 60]**

**Unit-1: KABADDI**

[30 L]\*

**A. Fundamental skills**

1. Skills in Raiding: Touching with hands, Use of leg-toe touch, squat leg thrust, side kick, mule kick, arrow fly kick, crossing of baulk line. Crossing of Bonus line.
2. Skills of holding the raider: Various formations, catching from particular position, different catches, catching formation and techniques.
3. Additional skills in raiding: Escaping from various holds, techniques of escaping from chain formation, offense and defence.

4. Game practice with application of Rules and Regulations.  
**B. Rules and their interpretations and duties of the officials.**

OR

**KHO-KHO**

[30 L]

**A. Fundamental skills**

1. Skills in Chasing: Sit on the box (Parallel & Bullet toe method), Get up from the box (Proximal & Distal foot method), Give Kho (Simple, Early, Late & Judgment), Pole Turn, Pole Dive, Tapping, Hammering, Rectification of foul.
2. Skills in running: Chain Play, Ring play and Chain & Ring mixed play.
3. Game practice with application of Rules and Regulations.

**B. Rules and their interpretations and duties of the officials.**

**Unit-2: BADMINTON**

[30 L]

**A. Fundamental skills**

1. Basic Knowledge: Various parts of the Racket and Grip.
2. Service: Short service, Long service, Long-high service.
3. Shots: Overhead shot, Defensive clear shot, Attacking clear shot, Drop shot, Net shot, Smash.
4. Game practice with application of Rules and Regulations.

**B. Rules and their interpretations and duties of the officials.**

OR

**TABLE TENNIS**

[30 L]

**A. Fundamental skills**

1. Basic Knowledge: Various parts of the Racket and Grip (Shake Hand & Pen Hold Grip).
2. Stance: Alternate & Parallel.
3. Push and Service: Backhand & Forehand.
4. Chop: Backhand & Forehand.
5. Receive: Push and Chop with both Backhand & Forehand.
6. Game practice with application of Rules and Regulations.

**B. Rules and their interpretations and duties of the officials.**

\* L = 1 Hour.

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**Year 3 : Semester 6**

**PSYCHOLOGY IN PHYSICAL EDUCATION AND SPORTS**

**Paper 1: Semester 6**

**Subject Code : PEDGDSE03T**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [90 Hours]**

**TOTAL CLASS HOURS : 90 [LECTURE HOURS 75 & TUTORIAL HOURS 15]**

**Unit- 1: Introduction**

[20 L]

Meaning and definition Psychology, Importance and scope of Psychology, Meaning and definition Sports Psychology, Need for knowledge of Sports Psychology in the field of Physical Education.

**Unit- 2: Learning**

[20 L]

Meaning and definition of learning, Theories of learning and Laws of learning, Learning curve: Meaning and Types, Transfer of learning- Meaning, definition type and factors affecting transfer of learning.

**Unit- 3: Psychological Factors**

[30 L]



Motivation- Meaning, definition, type and importance of Motivation in Physical Education and Sports, Emotion- Meaning, definition, type and importance of Emotion in Physical Education and Sports. Personality- Meaning, definition and type Personality traits, Role of physical activities in the development of personality.

**Unit- 4: Stress and Anxiety**

[20 L]

Stress- Meaning, definition and types of Stress, Causes of Stress. Effect of Stress on Sports Performance, Anxiety- Meaning, definition and types of Anxiety. . Effect of Anxiety on Sports Performance, Management of Stress and Anxiety through physical activity and sports.

**Suggested Readings**

- ❖ Authors Guide (2013) National Library of Educational and Psychological Test (NLEPT) Catalogue of Tests, New Delhi: National Council of Educational Research and Training Publication.
- ❖ Jain. (2002), Sports Sociology, Heal Sahety Kendre Publishers.
- ❖ Jay Coakley. (2001) Sports in Society – Issues and Controversies in International Education, Mc-Craw Seventh Ed.
- ❖ John D Lauther (2000) Psychology of Coaching. NerJersy: Prentice Hall Inc.
- ❖ John D. Lauther (1998) Sports Psychology. Englewood, Prentice Hall Inc.
- ❖ Miroslaw Vauks & Bryant Cratty (1999).Psychology and the Superior Athlete. London: The Macmillan Co.
- ❖ Richard, J. Crisp. (2000). Essential Social Psychology. Sage Publications.
- ❖ Robert N. Singer (2001). Motor Learning and Human Performance. New York: The Macmillan Co.
- ❖ Robert N. Singer. (1989) The Psychology Domain Movement Behaviour. Philadelphia: Lea and Febiger.
- ❖ Thelma Horn. (2002). Advances in Sports Psychology. Human Kinetic.
- ❖ Whiting, K, Karman., Hendry L.B& Jones M.G. (1999) Personality and Performance in Physical Education and Sports. London: Hendry Kimpton Publishers.

\* L = 1 Hour.

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**OR**

**PROJECTWORK**

**Paper 1: Semester 6**

**Subject Code : PEDGDSE03T**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [90 Hours]**

**TOTAL CLASS HOURS : 90 [LECTURE HOURS 75 & TUTORIAL HOURS 15]**

**Unit-1: Record Book:** Physical Fitness Components, Body composition and Somatotype, Rules of Games and Sports, Non-communicable diseases, First-aid Management

**Unit-2: Dissertation / Project Report**

The candidate is required to select a topic of his/her choice for the Dissertation and project. The Steps for Dissertation/Project Report that should be followed are given below

1. Analysing the problem or topic.
2. Conducting extensive research.
3. Summarizing findings from the research investigation.
4. Recommending additional research on the topic.
5. Drawing conclusions and making recommendations.
6. Documenting the results of the research.
7. Defending conclusions and recommendations.

**THE ORIGINAL AND COPIES OF THE THESIS MUST INCLUDE THE FOLLOWING ITEMS IN THE ORDER LISTED:**

1. Title Page.
2. Acknowledgment

3. Abstract
4. Table of Contents.
5. Introduction
6. Review of Related Literature
7. Procedure and methodology
8. Results and findings
9. Discussions, summary and conclusions.

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**HEALTH EDUCATION AND TESTS & MEASUREMENTS IN  
PHYSICAL EDUCATION  
(FOR THE STUDENTS OTHER THAN PHYSICAL EDUCATION)**

**Paper 2: Semester 6**

**Subject Code : PEDGGECO2T**

**Full Marks: 75**

**[Internal assessment – 25 Marks ; Semester-end Examination – 50 Marks]**

**Total Credits : 6 [90 Hours]**

**Unit- 1: Introduction**

**[30 L]\***

Concept, definition and dimension of Health, Definition, aim, objectives and principles of Health Education, Health Agencies- World Health Organization (WHO), United Nations Educational Scientific and Cultural Organization (UNESCO), Nutrition- Nutritional requirements for daily living. Balance Diet. Health disorders due to deficiencies of Vitamins and Minerals.

**Unit- 2: Health and First-aid Managements**

**[30 L]**

First aid- Meaning, definition, importance and golden rules of First-aid, Concept of sports injuries- Sprain, Strain, Fracture and Dislocation, Postural deformities- Causes and corrective exercise of Kyphosis, Lordosis, Scoliosis, Knock Knees and Flat Foot, Hypokinetic Diseases and Physical Activities- Obesity and Diabetes.

**Unit- 3: Measurement of Body Compositions and Somatotype Assessment [20 L]**

Body Mass Index (BMI)- Concept and method of measurement, Body Fat- Concept and method of measurement, Lean Body Mass (LBM)- Concept and method of measurement, Somatotype- Concept and method of Assessment.

**Unit- IV: Fitness Test**

**[10 L]**

Kraus-Weber Muscular Strength Test, AAHPER Youth Fitness Test, Queens College Step Test, Harvard Step Test.

**Suggested Readings**

- ❖ Bucher, Charles A. "Administration of Health and Physical Education Programme".
- ❖ Hanlon, John J. "Principles of Public Health Administration" 2003.
- ❖ Turner, C.E. "The School Health and Health Education".
- ❖ Nutrition Encyclopaedia, edited by Delores C.S. James, The Gale Group, Inc.
- ❖ Boyd-Eaton S. et al (1989) The Stone Age Health Programme: Diet and Exercise as Nature Intended. Angus and Robertson.
- ❖ Terras S. (1994) Stress, How Your Diet can Help: The Practical Guide to Positive Health Using Diet, Vitamins, Minerals, Herbs and Amino Acids, Thorons.
- ❖ Collins, R.D., & Hodges P.B. (2001) A Comprehensive Guide to Sports Skills Tests and Measurement (2nd edition) Lanham: Scarecrow Press.
- ❖ John Wiley and Sons, Inc Jenson, Clayne R and Cynt ha, C. Hirst (1980) Measurement in Physical Education and Athletics, New York, Macmillan Publishing Co. Inc.
- ❖ Kansal D.K. (1996), "Test and Measurement in Sports and Physical Education, New Delhi: DVS Publications.
- ❖ Krishnamurthy (2007) Evaluation in Physical Education and Sports, New Delhi; Ajay Verma Publication.
- ❖ Vivian H. Heyward (2005) Advance Fitness Assessment and Exercise Prescription, 3rd Edition, Dallas TX: The Cooper Institute for Aerobics Research.

- ❖ Wilmore JH and Costill DL. (2005) Physiology of Sport and Exercise: 3rd Edition. Champaign IL: Human Kinetics.
- ❖ Yobu, A (2010), Test, Measurement and Evaluation in Physical Education in Physical Education and Sports. New Delhi; Friends Publications

\* L = 1 Hour.

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## **BALL GAMES (Any two)**

**Paper 3: Semester 6**

**Subject Code : PEDSSECo4M**

**Full Marks: 25**

**[Internal assessment/Practical – 15 Marks]**

**Total Credits : 2 [60 Hours]**

**TOTAL CLASS HOURS : 60 [PRACTICAL HOURS 60]**

### **FOOTBALL**

#### **A. Fundamental Skills**

1. Kicking: Kicking the ball with inside of the foot, Kicking the ball with Full Instep of the foot, Kicking the ball with Inner Instep of the foot, Kicking the ball with Outer Instep of the foot and Lofted Kick.
2. Trapping: Trapping- the Rolling ball, and the Bouncing ball with sole of the foot.
3. Dribbling: Dribbling the ball with Instep of the foot, Dribbling the ball with Inner and Outer Instep of the foot.
4. Heading: In standing, running and jumping condition.
5. Throw-in: Standing throw-in and Running throw-in.
6. Feinting: With the lower limb and upper part of the body.
7. Tackling: Simple Tackling, Slide Tackling.
8. Goal Keeping: Collection of Ball, Ball clearance- kicking, throwing and deflecting.
9. Game practice with application of Rules and Regulations.

#### **B. Rules and their interpretation and duties of officials.**

### **HANDBALL**

#### **A. Fundamental Skills**

1. Catching, Throwing and Ball control,
2. Goal Throws: Jump shot, Center shot, Dive shot, Reverse shot.
3. Dribbling: High and low.
4. Attack and counter attack, simple counter attack, counter attack from two wings and center.
5. Blocking, GoalKeeping and Defensive skills.
6. Game practice with application of Rules and Regulations.

#### **B. Rules and their interpretation and duties of officials.**

### **CRICKET**

#### **A. Fundamental Skills**

1. Batting Skill: Block, Cut, Drive, Hook, Leg Glance, Paddle Sweep, Pull, Sweep
2. Bowling Skill: Seam Bowling, Swing Bowling, Bouncer, In swinger, Leg Cutter, Off Cutter, Reverse.
3. Fielding Skill:

#### **B. Rules and their interpretation and duties of officials.**

### **VOLLEYBALL**

#### **A. Fundamental skills**

1. Service: Under arm service, Side arm service, Tennis service, Floating service.

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2. Pass: Under arm pass, Overheadpass.
  3. Spiking and Blocking.
  4. Game practice with application of Rules and Regulations.
- B. Rules and their interpretation and duties of officials.**

### **NETBALL**

#### **A. Fundamental skills**

1. Catching: one handed, two handed, with feet grounded and in flight.
2. Throwing (Different passes and their uses): One hand passes (shoulder, high shoulder, underarm, bounce, lob), two hand passes (Push, overhead and bounce).
3. Footwork: Landing on one foot, landing on two feet, Pivot, Running pass.
4. Shooting: One hand, forward step shot, and backward step shot.
5. Techniques of free dodge and sprint, sudden sprint, sprint and stop, sprinting with change at speed.
6. Defending: Marking the player, marking the ball, blocking, inside the circle, outside the circle, Intercepting: Pass and shot.
7. Game practice with application of Rules and Regulations.

#### **B. Rules and their interpretation and duties of officials.**

### **THROW BALL**

#### **A. Fundamental skills**

Overhand service, Side arm service, two hand catching, one hand overhead return, side arm return.

#### **B. Rules and their interpretations and duties of officials.**

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*Recommended by UG BOS in Commerce & Management  
At its meeting held on 03.05.2018..*

*Sd/-  
Dr. Pranam Dhar  
Chairperson.*

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