VIDYASAGAR UNIVERSITY

BACHELOR OF PHYSICAL EDUCATION AND SPORTS (BPES)

THREE YEAR UNDERGRADUATE PROGRAMME

(UNDER CBCS)

(w.e.f. Academic Year 2022-2023)

Vidyasagar University

Paschim Midnapore 721102, West Bengal

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Learning Outcomes-Based Curriculum Framework for BPES Programme

A. Introduction

The graduate level course in Physical Education and Sports contains subjects varying from foundation of Physical Education to Anatomy, Physiology, Kinesiology, Officiating & coaching, Test & Measurement, Nutrition, Rehabilitation, Psychology, Sports Training, Sports Biomechanics, Methods of Teachings etc. which are aimed to give thorough knowledge and skills to the students. Students perusing physical education courses are fit to join the jobs as physical trainers, coaches, game officials, referees, umpires, curators, gym trainers, life guards, personal trainers etc. During their course of education the students also develops the expertise to establish their own business as entrepreneurs in the field of sports, fitness, recreation, adventure sports, camping, event management etc.

B. Nature and extent of the BPES degree programme

Physical Education is normally referred to as the science that aims to develop all-inclusive aspects of human personality through physical and sports activities. Physical education is a multidisciplinary subject that cannot be studied in seclusion under the scope of one or two subjects. The scope of Physical Education as a subject is very broad. It caters to the need for developing capability of the students on physical, mental and social aspects. Physical education also aims to develop activity as an alternate and prophylactic medicine. The key areas of study within the Physical Education are '*Exercise Physiology, Sports Psychology, Sports Sociology, Sports Management, Sports Journalism, Kinesiology- Biomechanics, Sports Training, Sports Medicine, Kinanthropometry etc*.

Degree program in Physical Education covers topics that overlap with the areas outlined above and that address the interfaces of Physical Education with other subjects such as Physiology, BioChemistry, Physics, Physiotherapy, Psychology, Management, Sociology along with training pedagogy employed for enhancing the functional status of individuals with varied needs. As a part of the effort, to enhance the employability of graduates of Physical Education, programs include learning experiences that offer opportunities in various spheres of human existence.

C. Program learning outcomes of BPES programme in Physical Education are listed below

This would lead the students to understand historical concept of physical education and relationship between Philosophy, Education and Physical Education. The student would further understand the theoretical implications of philosophies of physical education with modern development and social aspects of Physical Education.

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1. The curriculum would enable the pass out to select the inherited talented children for various sports activities.
2. The pass out shall be able to orient children in schools with the fundamental skills of selected sports as per their inherited potential.
3. The pass out shall be able to devise training program for athletes engaged in different sports activities 4. The curriculum shall enable them to officiate, supervise various sports tournaments and orient them in organizing sports events at all levels.
4. The curriculum would enable the pass out students to be entrepreneur (to start their own fitness center, gym, spa etc) and device appropriate fitness program for different genders and age groups of people.
5. The curriculum would enable the pass out to devise training program for physically challenged peoples.

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REGULATIONS

1. Title and Commencement:

1.1 These Regulations shall be called The Academic Regulations for '**BACHELOR OF PHYSICAL EDUCATION AND SPORTS (BPES)** 3-YEAR UNDERGRADUATE DEGREE PROGRAMME UNDER VIDYASAGAR UNIVERSITY' for obtaining Bachelor Degree in Physical Education & Sports under Choice based Credit System (CBCS).

1.2 These Regulations shall apply to the students admitted in **BPES** from the Academic Year **2022 – 2023** onwards.

2. Degree Nomenclature:

Bachelor of Physical Education and Sports (BPES)

3. Duration of the Degree Programme

3.1 The duration of the Programme is **SIX (06)** consecutive **SEMESTERS** of six months each *i. e.,* **THREE (03) YEARS**.

3.2 A candidate shall have to clear all Semesters maximum within **FIVE YEARS** from the academic year of his/her first admission and registration to the BPES Programme under Vidyasagar University failing which enrolment of the candidate shall stand cancelled.

3. Choice based Credit System

Under the design of "Choice Based Credit System (CBCS)" the curriculum has been framed with following types of courses to be offered:

i. Core Course (CC): The Core Course should be compulsorily be studied by a candidate as core requirement. In BPES degree programme there 14 core courses are to be studied.

ii. Elective Course: Elective Course can be chosen from a pool of courses which may be very specific or specialized or advanced or supportive to the discipline or which provides an extended scope to enhance the proficiency/ skill is called elective Course.

iii. Discipline Specific Elective (DSE) course: Elective courses which may be offered by the main discipline / subjects of study is referred to as Discipline Specific Elective (DSE). For BPES four (4) DSE courses are to taken out of a pool given for the different semester courses.

iv. Generic Elective (GE) Course: An elective course chosen generally from other discipline / subjects, with an intention to seek exposure is called a Generic Elective. For BPES programme

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four (4) Generic Elective papers which contemplate course of other discipline / subject are to be chosen from the given choices.

v. Ability Enhancement Course (AEC): The Ability Enhancement Course (AEC) may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Course (SEC).

Ability Enhancement Compulsory Course (AECC): English /MIL, and Environmental Studies, these are two mandatory AECC for BPES programme. These courses will generally be of 2 credits except environmental studies which is of 4 credits.

Skill Enhancement Course (SEC): These courses may be chosen from a pool of courses designed to provide value based and/or skill - based knowledge. For BPES two (2) SEC courses are to be taken from the given choices in the respective Semester.

4. Admission

4.1 The admission to undergraduate degree programmes in BPES will be governed by the guidelines of the Vidyasagar University and that of the Department of Higher Education, Govt. of West Bengal as laid down from time to time.

4.2 A candidate in the following cases is eligible to take admission in BPES programme under Vidyasagar University

a) Passed H.S. or equivalent examination with minimum 45% marks in aggregate with District level participation in any Games & Sports (by State approved body)
b) Passed H.S. or equivalent examination with 50% marks in Physical Education
c) Passed H.S. or equivalent examination with 45% marks in Biological Science/ Nutrition in H.S. with participation in National Cadets Corps (A/B/C Certificates)

4.3 The selection of students for admission will be done as per the merit list. The merit list will be prepared according rules/regulations as laid down by Vidyasagar University from time to time. Students with sports background shall be given preference for BPES admission.

5. Attendance

5.1 A student having at least 75% attendance of scheduled theory and practical classes separately shall be allowed to sit for the concerned Semester Examination subject to the fulfillment of other conditions as laid down in the regulations.

5.2 Relaxation in attendance for participation in Sports, NCC, NSS and Co-curricular activities is admissible as per University regulations subject to prior approval of College Authority.

6. Course & Curriculum

6.1 Credit requirement: The total credit requirement for the BPES undergraduate degree programme shall be 142, to be covered in Six Semester. Total marks shall be 2450.

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6.2 The details of the Syllabus is framed in concurrence with the recommendations UGC and shall be prescribed by the University from time to time.

7. Examination

7.1 Date of Examination:

Exact dates and the schedule of examination shall be notified by the Controller of Examinations, Vidyasagar University. In the event of any unforeseen exigency the Controller of Examinations shall be competent for any adjustment in the prescribed schedule.

7.2 Schedule of Examination:

The schedule of examinations of BPES consists of Internal and End Semester Examinations. End Semester Examination (External) shall be conducted at the end of the academic activities of the respective Semester. There shall be one Midterm (Internal) examination to be conducted by the Colleges offering the course after completing 60% of the course in a Semester.

7.3 Distribution of Marks:

The details of examination are given below:

Course with both theory and practical:		***Total marks: 100***
(i)	End Semester Theory Examination	= 50 marks
(ii)	End Semester Practical Examination	= 30 marks
(iii)	Internal Assessment	= 20 marks

Course with only theory:		***Total marks: 100***
(i)	End Semester Theory Examination:	= 80 marks
(ii)	Internal Assessment:	= 20 marks

Course with only Practical:		***Total marks: 100***
(i)	End Semester Practical Examination	= 80 marks
(ii)	Internal Assessment	= 20 marks

7.4 Eligibility criteria of examination and types of assessment:

A candidate shall be eligible for appearing at any of the semester of examination fulfilling the following essential condition:

1. A student must have at least 75% class attendance (theory and practical separately).
2. Unless a student appears for the Internal Examination, the student should not be permitted to appear for the Semester Final Theory examinations in the course concerned.
3. Student shall have to fill-up the examination form of the University paying the required fees as stipulated by the Vidyasagar University from time to time.
4. Registration is mandatory prior to form fill-up for the 1st Semester Examination.

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5. Admit card shall be issued by the Controller of Examinations before the End Semester Examination and is mandatory for appearing at the examination.

7.5 Practical Examination:

Practical examination shall be conducted by the respective College offering BPES programme in presence of expert/ evaluator nominated by the Vidyasagar University. The Principal/ Officer In-charge of the respective college shall be responsible for conducting examination with intimation to the University and providing the marks to the Controller of the Exanimation, Vidyasagar University maintaining the confidentiality of the examination. The modalities of such assessment be recorded and documents will be preserved by the respective college and those must be placed before any committee or team constituted by the university for verification.

8. Evaluation System and Result:

Examination, evaluation / assessment, result processing, publication of results and issues related to the same shall be governed by the existing **CBCS Regulation of Vidyasagar University** as laid down from time to time.

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VIDYASAGAR UNIVERSITY

BACHELOR OF PHYSICAL EDUCATION AND SPORTS (BPES)
(Choice Based Credit System)

Year	Semester	Course Type	Course Code	Course Title	Credit	L-T-P	Marks		
							CA	ESE	TOTAL
I	I	**SEMESTER-I**							
		Core-1	BPESCC1T	Foundation and History of Physical Education and Sports	6	6-0-0	20	80	100
		Core-2	BPESCC2P	Athletics (Track Events), Callisthenics, Aerobics and Apparatus Drills	6	0-0-12	20	80	100
		AECC-1	BPESAECC	Communicative English	2	2-0-0	10	40	50
		GE-1	BPESGE1T	Basics of Drill and Marching	6	6-0-0	20	80	100
				Semester-I Total	20				350
	II	**SEMESTER-II**							
		Core-3	BPESCC3T	Anatomy, Physiology and Exercise Physiology	6	6-0-0	20	80	100
		Core-4	BPESCC4P	Athletics (Field Events), Racket Sports: Badminton/Table Tennis.	6	0-0-12	20	80	100
		AECC-2	BPES ENVS	Environmental Studies	4	4-0-0	20	80	100
		GE-2	BPESGE2T BPESGE2P	Human Physiology Human Physiology Lab	6	4-0-4	20	80	100
				Semester-II Total	22				400
II	III	**SEMESTER-III**							
		Core-5	BPESCC5T	Health Education, First-aid and Physical Fitness	6	6-0-0	20	80	100
		Core-6	BPESCC6P	Gymnastics and Indian Games: Kho-kho and Kabaddi	6	0-0-12	20	80	100
		Core-7	BPESCC7P	Yoga and Team Games: Football and Cricket.	6	0-0-12	20	80	100
		GE-3	BPESGE3T BPESGE3P	Food Science and Nutrition Food Science and Nutrition Lab	6	4-0-4	20	80	100
		SEC-1	BPESSEC1.1P BPESSEC1.2P	Layout knowledge, Officiating ability, Assessment of Body Composition, Physiological Parameters and First-aid. **OR** Preparation & Maintenance of Pitches & Application of Electrical Gadgets	2	0-0-4	10	40	50
				Semester-III Total	26				450

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				SEMESTER-IV					
II	**IV**	**Core-8**	**BPESCC8T**	Test, Measurement and Evaluation in Physical Education & Sports	**6**	**6-0-0**	**20**	**80**	**100**
		Core-9	**BPESCC9T**	Management of Physical Education and Sports	**6**	**6-0-0**	**20**	**80**	**100**
		Core-10	**BPESCC10P**	Team Games: Volleyball, Basketball, Folk Dance and Recreational Games.	**6**	**0-0-12**	**20**	**80**	**100**
		GE-4	**BPESGE4T**	Sports Medicine, Physiotherapy and Athletic Care	**6**	**6-0-0**	**20**	**80**	**100**
		SEC-2	**BPESSEC2.1P** **OR** **BPESSEC2.2P**	Layout knowledge, Officiating ability, Assessment of Body Type, Somatotype and Fitness Test **OR** Participation in Seminar / Conference	**2**	**0-0-4**	**10**	**40**	**50**
				Semester-IV Total	**26**				**450**
				SEMESTER-V					
III	**V**	**Core-11**	**BPESCC11T**	Science of Sports Training	**6**	**6-0-0**	**20**	**80**	**100**
		Core-12	**BPESCC12P**	Team Game: Handball; Leadership Camp and Self Defense Activity: (Karate/Judo)	**6**	**0-0-12**	**20**	**80**	**100**
		DSE- 1	**BPESDSE1.1T** **OR** **BPESDSE1.2T**	Statistics in Physical Education and Sports & Sports for all **OR** Sports Journalism and Stress Management	**6**	**6-0-0**	**20**	**80**	**100**
		DSE- 2	**BPESDSE2T**	Computer Application in Physical Education and Sports	**6**	**6-0-0**	**20**	**80**	**100**
				Semester-V Total	**24**				**400**
				SEMESTER-VI					
	VI	**Core-13**	**BPESCC13T**	Posture, Wellness and Weight Management.	**6**	**6-0-0**	**20**	**80**	**100**
		Core-14	**BPESCC14P**	Games Specialization and Officiating	**6**	**0-0-12**	**20**	**80**	**100**
		DSE- 3	**BPESDSE3.1T** **OR** **BPESDSE3.2T**	Applied Kinesiology and Biomechanics in Physical Education & Sports and Yogic Sciences **OR** Sports Psychology & Education Technology	**6**	**6-0-0**	**20**	**80**	**100**
		DSE- 4	**BPESDSE4P**	Project Work	**6**	**0-0-12**	**20**	**80**	**100**
				Semester-VI Total	**24**				**400**

Total Credits: 142 **Total Marks: 2450**

CC = Core Course , AECC = Ability Enhancement Compulsory Course , GE = Generic Elective , SEC = Skill Enhancement Course , DSE = Discipline Specific Elective , CA= Continuous Assessment , ESE= End Semester Examination , T = Theory, P= Practical, L = Lecture, T = Tutorial , MIL = Modern Indian Language , ENVS = Environmental Studies

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List of Core courses (CC) and Electives

Core Course (CC)

BPESCC1T: Foundation and History of Physical Education and Sports.

BPESCC2P: Athletics (Track Events), Callisthenics, Aerobics and Apparatus Drills.

BPESCC3T: Anatomy, Physiology and Exercise Physiology.

BPESCC4P: Athletics (Field Events), Racket Sports: Badminton/Table Tennis.

BPESCC5T: Health Education, First-aid and Physical Fitness.

BPESCC6P: Gymnastics and Indian Games: Kho-kho and Kabaddi.

BPESCC7P: Yoga and Team Games: Football and Cricket.

BPESCC8T: Test, Measurement and Evaluation in Physical Education & Sports.

BPESCC9T: Management of Physical Education and Sports.

BPESCC10P: Team Games: Volleyball, Basketball; Folk Dance and Recreational Games.

BPESCC11T: Science of Sports Training.

BPESCC12P: Team Games: Handball; Leadership Camp and Self Defense Activity. (Karate/Judo)

BPESCC13T: Posture, Wellness and Weight Management.

BPESCC14P: Games Specialization and Officiating.

Discipline Specific Electives (DSE)

BPESDSE1.1T: Statistics in Physical Education and Sports & Sports for all.

Or

BPESDSE1.2T: Sports Journalism and Stress Management.

BPESDSE2T: Computer Application in Physical Education and Sports.

BPESDSE3.1T: Applied Kinesiology and Biomechanics in Physical Education & Sports and Yogic Sciences.

Or

BPESDSE3.2T: Sports Psychology and Educational Technology

BPESDSE4P: Project Work.

Skill Enhancement Course (SEC)

BPESSEC1.1P: Layout knowledge, Officiating ability, Assessment of Body Composition, Physiological Parameters and First-aid.

Or

BPESSEC1.2P: Preparation & Maintenance of Pitches & Application of Electrical Gadgets

BPESSEC2.1P: Layout knowledge, Officiating ability, Assessment of Body Type, Somatotype and Fitness Test.

Or

BPESSEC2.2P Participation in Seminar / Conference

Generic Electives (GE)

BPESGE1P: Basics of Drill and Marching

BPESGE2T: Human Physiology

BPESGE2P: Human Physiology Lab

BPESGE3T: Food Science and Nutrition

BPESGE3P: Food Science and Nutrition Lab

BPESGE4T: Sports Medicine, Physiotherapy and Athletic Care

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Core Courses (CC)

BPESCC1T: Foundation and History of Physical Education and Sports. Credits: 6

Course Contents:

Unit-I: Introduction to the Concept of Physical Education and Sports

1.1. Meaning, definitions and scope of Physical Education and Sports. Aim and objectives of Physical Education and Sports.

1.2. Misconceptions and modern concepts of Physical Education and Sports.

1.3. Contribution of Physical Education to Education. Physical Education as an Art and Science.

1.4. Needs and importance of Physical Education and Sports in modern society.

UNIT-II: Biological, Psychological and Sociological Foundation of Physical Education & Sports

2.1. Biological Foundation -Meaning and definition of growth and development. Factors affecting growth and development. Differences of growth and development. Principles of growth and development. Body types: Sheldon and Heath-Carter Somatotype. Somatotype and Sports.

2.2. Psychological Foundation - Introduction, Learning process and theories. Laws of Learning. Age: Chronological age,anatomical age, physiological age and mental age.

2.3. Sociological Foundation- Physical Activity - A Social experience. Social values of Physical Education and Sports. Sports Ethics.

2.4. Role of games and sports in National and International integration.

Unit-III: Historical Development of Physical Education and Sports

3.1. Historical development of Physical Education and Sports in India: Pre-Independence period and Post-Independence period. Olympic Movement- Ancient and Modern Olympic Games. Historical achievements of Indian athletes in Olympic Games.

3.2. Brief historical background of Asian Games and Commonwealth Games.

3.3. Teacher Training Institutions in West Bengal: Institutional history, nature and course offering.

3.4. Professional preparation in Physical Education and Sports: YMCA, LNIPE, IGIPESS, SAI, NSNIS, National and State Sports Awards.

Unit-IV: Yoga Education

4.1. Meaning and definitions of the term Yoga, types, aims, objectives and importance of Yoga in Physical Education and other fields.

4.2. History of Yoga. Ayush.

4.3. Eight Limbs of Yoga- Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi .

4.4. Hatha Yoga.

SUGGESTED READINGS

1. Kayal, R. Sarir Siksha Buniad O Itihas. Clasique Books. Kolkata.
2. Sahu, D.P. Sarir Shikka Disari. Tapati Publishers. Kolkata.
3. Debnath M (2007), Basic Core Fitness Through Yoga And Naturopathy. Sports Publication.
4. Sahu, D.P. A Critical Review on Modern Trend of Yoga Asana, Classique Books. Kolkata.
5. Sharma JP and Ganesh S (2007), Yog Kala Ek Prichya. Friends Publication. New Delhi.
6. Sharma JP (2007). Manav jeevan evam yoga, Friends Publication. New Delhi.
7. Kar, S. Mahavidyalayastare Sarirsiksha. Clasique Books. Kolkata.
8. Kayal, R. Yog Siksha. Clasique Books. Kolkata.
9. Kar, S. & B. A.K. Sishoy Sarirshiksha. Clasique Books. Kolkata.

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BPESCC2P: Athletics (Track Events), Callisthenics, Aerobics and Apparatus Drills.

Credits: 06

PRACTICAL

I. Athletics (Track Events):

a) Starting Techniques: Standing start and Crouch start (its variations) use of Starting Block.
b) Acceleration with proper running techniques.
c) Finishing Technique: Run Through, Forward Lunging and Shoulder Shrug.
d) Relay Race: Starting, Baton Holding/Carrying. Baton Exchange in between Zone and Finishing.
e) Learning and demonstration the process of Scoring and Recording in Competition results.

II. Callisthenics: Atleast 06 exercises with 16 counts.
III. Aerobics: Atleast any 06 exercises.
IV. Apparatus Drills: Alleast any 02.

N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.

SUGGESTED READINGS

1. Sil, P. Track and Field, Clisique Books, Kolkata.
2. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
3. Bandopadhyay, K. Sarir Siksha Parichay, Classique Publishers, Kolkata.
4. Petipus, et al. Athlete's Guide to Career Planning, Human Kinetics.
5. Dharma, P.N. Fundamentals of Track and Field, Khel Sahitya Kendra, New Delhi.

BPESCC3T: Anatomy, Physiology and Exercise Physiology. Credits: 6

Course Contents:

Unit-I: Introduction of Human Body

1.1. Anatomy, Physiology and Exercise Physiology: Meaning, Definition, Scope and Importance.
1.2. Cell: Definition, Structure and Functions of human Cell.
1.3. Tissue: Definition, Types and Functions.
1.4. System: Definition, Types and Functions in human body. Role of Anatomy, Physiology and Exercise Physiology in the field of Physical Education and Sports.

UNIT-II; Musculo-skeletal System

2.1. Skeletal System: Bones of the human Body: Axial and Appendicular skeleton. Classification and description of Bones and Joints. Anatomical differences between male and female.
2.2. Muscular System: Types, Location, Structure and Functions of Skeletal Muscle. Major muscles of shoulder, hip, knee, ankle, abdomen, wrist joints. Fuel for muscular work.
2.3. Muscular Contraction: Meaning, Types, Definition and Characteristics.
2.4. Effect of exercise and training on muscular system.

Unit-III: Circulatory System

3.1. Blood: Definition, Composition and Functions.
3.2. Heart: Definition, Structure, Location and Functions. Cardiac cycle, Blood group, Blood coagulation, Blood and immunity. Blood circulation mechanism within human heart.
3.3. Meaning and Definition of terms: Heart Rate, Pulse Rate, Stroke Volume, Cardiac Output.
Blood Pressure: Definition, Classification, Measurement procedure. Athletic heart and Bradycardia.
3.4. Effect of exercise and training on circulatory system.

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Unit-IV: Respiratory System, Endocrine System and Nervous System

4.1. Respiratory System: Organs of respiration. Internal and external respiration, Structure and functions of human respiratory organs. Respiration mechanism.

4.2. Meaning, definition and importance of terms: Respiratory Rate, Tidal Volume, Residual Volume, IRV, ERV, Vital Capacity, O_2 Debt, Second Wind, Spo_2. Effect of exercise and training on Respiratory System.

4.3. Endocrine System: Location, secretion and functions of different endocrine glands.

4.4. Nervous System: Central nervous system- Brain, Spinal cord; Autonomic nervous system. Concept of nerve, Muscle physiology: Neuromuscular junction and transmission.

SUGGESTED READINGS

1. Sil, P. Sarirsiskhay Sarirbidya, Clasique Books, Kolkata.
2. Kar, S. & B. A.K. Sishoy Sarirshiksha. Clasique Books. Kolkata.
3. Sahu, D.P. Sarir Shikka Disari. Tapati Publishers. Kolkata.
4. Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
5. David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics.
6. Fox, E.L... and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.
7. Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co. Richard, W. Bowers. (1989). Sports Physiology. WMC: Brown Publishers.
8. Sandhya Tiwaji. (1999). Exercise Physiology. Sports Publishers.
9. Shaver, L. (1981). Essentials of Exercise Physiology. New Delhi: Publications.
10. William, D. Me Aradle. (1996). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams and Wilkins Company.

BPESCC4P: Athletics (Field Events), Racket Sports: Badminton/Table Tennis. Credits: 6

PRACTICAL

I Field Events:

a) Long Jump: Approach Run, Take-off, Flight in the Air (Hang Style/Hitch Kick) and Landing.
b) High Jump: Approach Run, Take-off, Bar Clearance/Flight (Straddle Roll) and Landing. Fosbary Flop.
c) Shot Put: Holding the Shot, Placement, Initial Stance, Glide, Delivery Stance and Recovery (Perry O'Brien Technique).
d) Discus Throw: Holding the Discus, Initial Stance, Primary Swing, Turn, Release and Recovery (Rotation in the Circle).
e) Javelin Throw: Grip, Carry, Release and Recovery (3/5 Impulse stride).
f) Learning and demonstration process of Scoring and Recording in Competition results.

N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.

SUGGESTED READINGS

1. Sil, P. Track and Field, Clisique Books, Kolkata.
2. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
3. Bandopadhyay, K. Sarir Siksha Parichay, Clisique Books, Kolkata.
4. Petipus, et al. Athlete's Guide to Career Planning, Human Kinetics.
5. Dharma, P.N. Fundamentals of Track and Field, Khel Sahitya Kendra, New Delhi.

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II. Racket Sports

BADMINTON

a) Basic Knowledge: Various parts of the Racket and Grip-hand-shake grip, figure pointing grip.
b) Basic foot work and court coverage.
c) Basic Stance: Defensive, attacking, net stance.
d) Service: Short service, Long service, Long-high service.
e) Shots: Fore Hand, Back Hand, Clearing, Lobbing, Over-Head Shot, Defensive Clear Shot, Attacking Clear Shot, Drop Shot, Net Shot, Smash.
f) Game practice with application of Rules and Regulations.
g) Rules and their interpretations and duties of the officials.
h) Conduct skill related test (s).
i) Major National and International tournaments.

SUGGESTED READINGS

1. Ashok Kumar, Badminton, Discovery Publishing House, New Delhi.
2. Narang, P. Play and Learn Badminton, Khel Sahitya Kendra, New Delhi.
3. Bandopadhyay, K. Sarir Sikaba Parichay, Classique Books, Kolkata.

TABLE TENNIS

a) Basic Knowledge: Various parts of the racket and grip (shake hand & pen hold grip), back hand fore hand grip.
b) Stance: Alternate and Parallel.
c) Service: Backhand and Forehand high toss service, spin, top spin, back spin, side spin.
d) Chop: Backhand and Forehand.
e) Receive return and receiving: Push, Chop, Drive Loop and Flick with both Backhand & Forehand.
f) Game practice with application of Rules and Regulations.
g) Rules and their interpretations and duties of the officials.
h) Conduct skill related test (s).
i) Major National and International tournaments.

SUGGESTED READINGS

1. Ashok Kumar, Table Tennis, Discovery Publishing House, New Delhi.
2. Narang, P. Play and Learn Table Tennis, Khel Sahitya Kendra, New Delhi.
3. David Fairholm. The Pocket Guide to Table Tennis Tactics, Bell & Heyman, London.

BPESCC5T: Health Education, First-aid and Physical Fitness. Credits: 6

Unit-I

1.1. Health: Meaning, Definition, Dimensions and Factors.
1.2. Health Education: Meaning, Definition, Aim, Objectives and Principles.
1.3. School Health Programme: Health Service, Health Instruction, Health Supervision, Health Appraisal and Health Record. Personal Hygiene: Care of Eyes, Ear, Nose, Skin, Mouth and Teeth.
1.4. Aim, Objectives and Functions: National Institute of Health & Family Welfare (NIHFW), World Health Organization (WHO), United Nations Educational Scientific & Cultural Organization (UNESCO), United Nations International Children's Emergency Fund (UNICEF), Red Cross.

UNIT-II

2.1. Communicable Disease: Meaning, Definition and Types, Causes; Prevention and Control of Malaria, Dengue, Chicken Pox, Diarrhea and Covid 19.

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2.2. Hypokinetic Disorders: Meaning, Definition and Causes; Management of Obesity, Diabetes, Asthma and Cardiovascular disorders.
2.3. Nutrition: Nutrients and their Functions and Daily Requirements. Balanced Diet. Balanced Diet Principles for Growing ups, Adults, Elderly and Athletes of both genders and mothers. Health disorders for deficiency of Protein, Vitamins and Minerals.
2.4. Posture: Meaning and Definition. Types of Postural Deformities; Causes and Corrective Exercises for Kyphosis, Lordosis, Scoliosis, Bow-Legs, Knock Knees and Flat Foot. Importance of Good Posture.

Unit-III

3.1. First-aid: Meaning. Definition, Need and Importance; Golden Rules of First-aid.
3.2. Common Sports Injuries (Strain, Spain, Frozen Shoulder, Lower Back Pain, Tennis and Golfer's Elbow, Runner's Knee, Shin Pain, Blister, Abrasion, Laceration Hematoma, Fracture, Dislocation).
3.3 Therapeutic Modalities: Therapy Meaning and Definition; Principles and Sports Injury Management procedure of Cryo-therapy and Thermo-therapy.
3.4 Sports Injury Management: Classification of Massage. Principles and methods of Sports Injury Management through Exercise and Massage.

Unit-IV

4.1. Fitness: Concept, Types
4.2 Physical Fitness: Meaning, Definition, Need and Importance of Physical Fitness.
4.3 Physical Fitness Components: Meaning, Definition and Usefulness of Health-related and Sports Performance-related Physical Fitness.
4.4 Ageing: Meaning and Definition; Aging Phenomenon: Role of Exercise in Aging.
4.5. Contemporary health problems of college youth- Alcohol, Drugs, Tobacco (chewing, sniffing, smoking) their harmful effects substance abuse management.

SUGGESTED READINGS

1. Bucher, Charles A. "Administration of Health and Physical Education Programme".
2. Sahu, D.P. Sharir Shikka o Shastha Shikkha, Classique Books. Kolkata.
3. Ghosh, B.N. "Treaties of Hygiene and Public Health".
4. Bandopadhyay, K. and Dutta, B.K. Prakcharjar Abhimukh, Classique Publishers, Kolkata.
5. Kar, S. & B. A.K. Sishoy Sarirshiksha. Clasique Books. Kolkata.

BPESCC6P: Gymnastics and Indian Games: Kho-kho and Kabaddi. **Credits: 6**

PRACTICAL

GYMNASTICS: Compulsory

a) Forward Roll,
b) T-Balance,
c) Forward Roll with Split leg,
d) Backward Roll,
e) Cart-Wheel.

GYMNASTICS: Optional

a) Dive and Forward Roll,
b) Hand Spring,
c) Head Spring,
d) Neck Spring,
e) Hand Stand and Forward Roll,
f) Somersault.

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SUGGESTED READINGS

1. Bandopadhyay, K. Sarir Siksha Parichay, Classique Books, Kolkata.
2. Tyagi Arun Kumar, Gymnastics: Skills and Rules, Khel Sahitya Kendra, New Delhi.
3. Dubey, H.C. Gymnastics, Discovery Publishing House, New Delhi.
4. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.

INDIAN GAMES:

KHO-KHO

Fundamental skills:

a) Chasing Skills: Sitting on the box-Parallel and Bullet toe method; Getting up from the box Proximal and Distal foot method; Giving Kho- Simple, Early, Late and Judgment Kho; Pole Turn, Pole Diving, Tapping, Hammering, Rectification of foul.
b) Running Skills: Chain Play, Ring play and Chain, Ring mixed play, Avoiding and Dodging.
c) Game practice with application of Rules and Regulations.
d) Rules and their interpretations and duties of the officials.
e) Conduct skill related test (s).
f) Major National and International tournaments.

SUGGESTED READINGS

a) Roy Pranab, Bharatiyo Khela Kho-Kho, Classique Books, Kolkata.
b) Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
c) Bandopadhyay, K. Sarir Siksha Parichay, Classic Books, Kolkata.

KABADDI

Fundamental skills:

a) Raiding Skills: Cant, Touching with hands, Use of leg-toe touch, squat leg thrust, side kick, mule kick, arrow flying kick, roll back; crossing of baulk line; Crossing of Bonus line.
b) Holding skills: Ankle, Knee, Thigh, Wrist, Crocodile and Washer man hold.
c) Formation during holding: Various formations, catching from particular position.
d) Additional Raiding skills: Escaping from various holds, techniques of escaping from chain formation, offense and defense.
e) Game practice with application of Rules and Regulations.
f) Rules and their interpretations and duties of the officials.
g) Conduct skill related test (s).
h) Major National and International tournaments.

N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.

SUGGESTED READINGS

1. Biswas, Abhay, Kabaddi K Jante Holay. Sobha proknsani, Chakdah, Nadia.
2. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
3. Bandopadhyay, K. Sarir Siksha Parichay, Classique Books, Kolkata.
4. Das, K.K. Jatiya Khela Kabaddi. Classique Book, Kolkata.

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BPESCC7P: Yoga and Team Games: Football and Cricket. **Credits: 6**

PRACTICAL

I. YOGA:

1.1. Asanas: Standing Posture

1.1.1. Ardhachandrasana
1.1.2. Brikshasana
1.1.3. Padahastasana

1.2. Sitting Posture

1.2.1. Ardhakurmasana
1.2.2. Paschimottanasana
1.2.3. Gomukhasana

1.3. Supine Posture

1.3.1. Setubandhasana
1.3.2. Halasana
1.3.3. Matsyasana

1.4. Prone Posture

1.4.1. Bhujangasana
1.4.2. Salvasanal
1.4.3. Dhanurasana

II. Suryanamaskara: As per AIU Norm.

III. Pranayama

3.1. Anulam Vilom
3.2. Bhramari
3.3. Bhastika

IV. Kriya

4.1. Kapalbhati

N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.

SUGGESTED READINGS

1. Bandopadhyay, K. Sarir Siksha Parichay, Classique Books, Kolkata.
2. Tyagi Arun Kumar, Gymnastics: Skills and Rules, Khel Sahitya Kendra, New Delhi.
3. Dubey, H.C. Gymnastics, Discovery Publishing House, New Delhi.
4. Swami Satyananda Saraswati, Asana Pranayama Mudra Bandha. Yoga Publications Trust, Munger.
5. Swami Satyananda Saraswati, Suranamaskara. Yoga Publications Trust, Munger.
6. Yoga-The Science of Holistic Living, Vivekananda Kendra Prakashan Trust, Chennai.
7. Major National and International tournaments.

TEAM GAMES:

FOOTBALL

Fundamental Skills:

a) 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.
b) Trapping: Trapping- the Rolling ball, and the Bouncing ball with Sole of the foot, Thigh and Chest Trapping.

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c) Dribbling: Dribbling the ball with Instep of the foot, Dribbling the ball with Inner and Outer Instep of the foot.
d) Heading: In standing, running and jumping conditions.
e) Throw-in: Standing throw-in and Running throw-in.
f) Feinting: With the lower limb and upper part of the body.
g) Tackling: Simple Tackling, Slide Tackling.
h) Goal Keeping: Collection of Ball, Ball clearance-kicking, throwing and deflecting.
i) Rules and their interpretation and duties of officials.
j) Conduct skill related test (s).

SUGGESTED READINGS

1. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
2. Bandopadhyay, K. Sarir Siksha Parichay, Classique Books, Kolkata.
3. Sahu, D.P. Fitness in Women Soccer. Rubicon Publications. Londan.
4. Dave Smith, Football Skills and Tactics, Chancellor Press.
5. Norman Barrett, Super Soccer Skills, Dragon Grand Publishers, Glasgow.
6. Major National and International tournaments.

CRICKET

Fundamental Skills:

a) Batting - Forward Defense, Backward Defense, Off Drive, On Drive, Straight Drive, Cover Drive, Square Cut. Hook, Pull, etc.
b) Bowling - Out-swing, In-swing, Off Break, Leg Break.
c) Fielding: Catching- The High Catch, The Low and Flat Catch, The Close Catch and throwing at the stumps from different angles, Long Barrier Throw, Short Throw, Long Throw.
d) Wicket Keeping.
e) Rules and their interpretation and duties of officials.
f) Score sheet preparation.

SUGGESTED READINGS

1. Jain, R. Play and Learn Cricket, Khel Sahitya Kendra, New Delhi.
2. Vivek Thani, Coaching Cricket, Khel Sahitya Kendra, New Delhi.
3. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
4. Bandopadhyay, K. Sarir Siksha Parichay, Classique Books, Kolkata.
5. Dutta, J. Bayes Gaje Cricket. Classique Books, Kolkata.
6. Major National and International tournaments.

BPESCC8T: Test, Measurement and Evaluation in Physical Education & Sports. Credits: 6

Unit-I: Introduction

1.1. Concept of test, measurement and evaluation.
1.2. Criteria of a good test.
1.3. Principles of evaluation.
1.4. Importance of test, measurement and evaluation in Physical Education and Sports.

UNIT-II: Measurement of Body Composition and Somatotype

2.1. Body Mass Index (BMI) – Concept, importance and method of measurement.
2.2. Body Fat – Concept, method of measurement and relationship with sports.
2.3. Lean Body Mass (LBM) - Concept and method of measurement.
2.4. Somatotype - Concept and method of measurement.

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Unit-III: Fitness Test

3.1. Kraus-Weber Muscular Strength Test,
3.2. AAHPER Youth Fitness Test and BEEP Test.
3.3. Queens College Step Test,
3.4. Harvard Step Test and Cooper's Test.

Unit-IV; Sports Skill Test

4.1. Lockhart and McPherson Badminton Skill Test
4.2. Johnson Basketball Test Battery and McDonald Soccer Test,
4.3. Brady Volleyball Test and Cornish Handball Test,
4.4. SAI Hockey Test.

SUGGESTED READINGS

1. 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. Cureton 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. Kansal D.K. (1996): "Test and Measurement in Sports and Physical Education, New Delhi: DVS Publications.
6. Krishnamurthy (2007): Evaluation in Physical Education & Sports, New Delhi; DVS Publication.
7. Wilmore JH and Costill DL. (2005): Physiology of Sport and Exercise: 3rd Edition. Champaigm IL: Human Kinetics.
8. Yobu, A (2010): Test, Measurement and Evaluation in Physical Education in Physical Education and Sports. New Delhi; Friends Publications.
9. Kar, S. & B. A.K. Sishoy Sarirshiksha. Clasique Books. Kolkata.

BPESCC9T: Management of Physical Education and Sports. Credits: 6

Unit-I

1.1. Sports Management: Meaning, Definition, Aim and objectives, Nature and Scope.
1.2. History and importance of Sports Management.
1.3. Principles and practices of Sports Management.
1.4. Qualities, Duties and responsibilities of Sports Manager.
1.5. Leadership: Definition, Types and Principles. Qualities of a Good Leader in Physical Education.

UNIT-II

2.1. Tournaments: Meaning, Definition and Types-Knock-out, League, Combination, Challenge.
2.2. Organisation: Fixture Drawing Procedure of Knock-out, League, Combination Tournaments.
2.3. Annual Programme: Athletic Meet and Play Day Organisation and Management.
2.4. Year-round Programme: Intramural and Extramural Competition Organisation.

Unit-III

3.1. Structure and Functions of University Sports Council and AIU.
3.2. Care and Maintenance: Meaning, Methods, Need and Importance of Sports Equipment Field; Playground and Gymnasium, Swimming Pool.
3.3. Documentation: Meaning. Methods, Need and Importance. Time Table: Meaning, Definition, Importance and Factors.

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3.4. Purchase: List of Consumable and Non-consumable sports goods and equipments in the department of Physical Education, Procedure to purchase sports goods and equipments in the department of Physical Education, stock entry, storing and distribution.

Unit-IV

4.1. Financial Management: Meaning, Definition, Need and Importance.
4.2. Budget: Meaning, Definition, Criteria, Principles; Steps for Preparing a good Budget.
4.3. Sponsorship: Meaning, Trends, Process, Aim and Objectives.
4.4 Sports Promotion: Meaning, Means and Methods; Funding Agencies -Types, Procedure of Communication with the Agencies.

SUGGESTED READINGS

1. Broyles, F. J. & Robert, H. D. Administration of Sports, Athletic Programme: A Managerial Approach. New York: Prentice Hall Inc.
2. Bucher, C. A. Administration of Physical Education and Athletic Programme. St. Louis: The C.V. Mosby Co.
3. Thomas, J. P. Organization & Administration of Physical Education. Madras: Gyanodayal Press.
4. Sahu, D.P. Sharir Shikka Shikkan Rita Publications, Kolkata.
5. Nanda, S.M. Sports Management, Friend Publications, New Delhi.
6. Paul, A. Sarirsikshay Management, Classic Publishers, Kolkata.
7. Bucher, C. A. Administration of Physical Education and Athletis Programme St. Louis The C.V. Mosby Co.
8. Thomas, J. P. Organization & Administration of Physical Education. Madrai: Gyanodiyal Press.
9. Kar, S. & B. A.K. Sishoy Sarirshiksha. Clasique Books. Kolkata.

BPESCC10P: Team Games: Volleyball, Basketball; Folk Dance and Recreational Games.

Credits: 6

TEAM GAMES:

VOLLEYBALL

Fundamental skills:

a) Service: Underhand service, Side arm service; Over-head service, Tennis service, Standing floating service, Jumping floating service, Jump Service.
b) Passing: Fore arm passing, Over-head passing.
c) Setting: Front set, Back set and Long set.
d) Spiking: Short ball, Medium ball and High ball (approach, arm and foot movement, and landing).
e) Blocking: Offensive and Defensive with one or more than one blockers (approach, arm and foot movement, and landing).
f) Service reception and Court coverage.
g) Rotation of front court and back court players.
h) Libero positions and change.
i) Game practice with application of Rules and Regulations and duties of officials.
j) Conduct skill related test (s).
k) Major National and International tournaments.

SUGGESTED READINGS

1. Renu Jain, Play and Learn Basketball, Khel Sahitya Kendra, New Delhi.
2. Sally Kus, Coaching Volleyball Successfully, Human Kinetics.
3. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
4. Bandopadhyay, K. Sarir Siksha Parichay, Classique Books, Kolkata.

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BASKETBALL

Fundamental skills:

a) Passing: Two hand Chest Pass, Two-hand Bounce Pass, One hand Baseball Pass, Side arm Pass, Overhead Pass, Hook Pass.
b) Receiving: Two hand receiving, One hand receiving, Receiving in stationary position, Receiving while Jumping and Receiving while Running.
c) Dribbling: How to start dribble, drop dribble, High Dribble, Low Dribble, Reverse Dribble, Rolling Dribble.
d) Shooting: Lay-up shot and its variations, One hand set shot, Two hands jump shot, Hook shot, Free Throw.
e) Rebounding: Defensive rebound and Offensive rebound.
f) Individual Defense: Guarding the player with the ball and without the ball, Pivoting.
g) Game practice with application of Rules and Regulations and duties of officials.
h) Conduct skill related test (s).
i) Major National and International tournaments.

N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.

FOLK DANCE: Any three folk dances

RECREATIONAL GAMES: Any ten recreational games

SUGGESTED READINGS

1. Naveen Jain, Play and Learn Basketball, Khel Sahitya Kendra, New Delhi.
2. Dubey, H. C. Basketball, Discovery Publishing House, New Delhi.
3. Rachana Jain, Teach Yourself Basketball, Sports Publication.
4. Jack Nagle, Power Pattern Offences for Winning Basketball, Parker Publishing Co., New York.

BPESCC11T: Science of Sports Training — Credits: 6

Unit-I

1.1 Sports Training: Meaning. Definition and Scope.
1.2. Aim, Objectives and Characteristics of Sports Training.
1.3. Principles of Sports Training.
1.4. Need and Importance of Sports Training.

UNIT-II

2.1. Warming-up and Cooling-down: Meaning, Definition and Methods.
2.2. Conditioning: Meaning, Definition and Principles.
2.3. Training Methods: Principles and Characteristics of Circuit Training, Interval Training, Weight Training and Plyometric Training.
2.4. Periodization: Meaning, Definition, Types, Composition and formation of different phages.

Unit-III

3.1. Training Load: Meaning, Definition, Types and Factors.
3.2. Training Load Components: Volume, Intensity, Repetition and Duration.
3.3. Over Load: Meaning, Causes, Symptoms and Overcoming Over-Load.
3.4. Load Adaptation: Meaning and Conditions of Adaptation; Super-compensation.

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Unit-IV

4.1. Strength - Means, Types and Methods of Strength Development.
4.2. Speed - Means, Types and Methods of Speed Development.
4.3. Endurance - Means, Types and Methods of Endurance Development.
4.4. Flexibility - Means, Types and Methods of Flexibility Development.

SUGGESTED READINGS

1. Bunn, J.N. (1998) Scientific Principles of Coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.
2. Cart, E. Klafs &Daniel, D. Arnheim (1999) Modern Principles of Athletic Training St. Louis C. V. Mosphy Company.
3. Daniel, D. Arnheim (1991) Principles of Athletic Training. St. Luis, Mosby Year Book.
4. Gary, T. Moran (1997) - Cross Training for Sports, Canada: Human Kinetics Hardayal.
5. Singh (1991) Science of Sports Training, New Delhi, DVS Publications.
6. Jensen, C.R. & Fisher A.G. (2000) Scientific Basic of Athletic Conditioning. Philadelphia.
7. Yograj Thani (2003), Sports Training, Delhi: Sports Publications.
8. Uppal, A.K. Principles of Sports Training, Friends Publications, New Delhi.
9. Kar, S. & B. A.K. Sishoy Sarirshiksha. Clasique Books. Kolkata.

BPESCC12P: Team Games- Handball; Leadership Camp; Self Defense Activity- Karate/Judo

Credits: 6

TEAM GAMES:

HANDBALL

Fundamental skills:

a) Catching, Throwing and Ball control.
b) Goal Throws: Jump shot, Center shot, Dive shot, Reverse shot.
c) Dribbling: High and low.
d) Attack and counter attack, simple counter attack, counter attack from two wings and center.
e) Blocking, Goalkeeping and Defensive skills.
f) Game practice with application of Rules and Regulations and duties of officials.
g) Major National and International tournaments.

[N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.]

SUGGESTED READINGS

1. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani.
2. Bandopadhyay, K. Sarir Siksha Parichay, Classique Books, Kolkata.
3. Dutta, S. Handball Khala o Neyamkanun. Ciasique Books, Kolkata.

LEADERSHIP CAMP

Organise any one Leadership Camp outside the College Campus and write a report in detail with Geo Tagged Photographs.

KARATE

Fundamental skills:

Stances, Punches, Blocks, and Kicks.
The Basics about Karate Stances:

a) Kneeling Stance – Seiza
b) Standing Stance – Musubi Dachi

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c) Ready Stance – Heisoku Dachi
d) Parallel Stance – Heiko Dachi
e) Front Stance – Zenkutsu Dachi
f) Fighting Stance – Han Zenkutsu Dachi
g) Back Stance – Kokutsu Dachi
h) Horse Stance – Kiba Dachi
i) Sumo Stance – Shiko Dachi
j) Immovable Stance – Fudo Dachi
k) Cat Stance – Neko Ashi Dachi
l) Crane Stance – Tsuru Ashi Dachi
m) Cross Stance – Kosa Dachi
n) Three Battle Stance – Sanchin Dachi
o) Make a Fist
p) The Straight Punch: Choku Zuki
q) The Front Lunch Punch: Oi Zuki
r) The Front Kick: Mae Geri
s) The Side Kick: Yoko Geri
t) The Roundhouse Kick: Mawashi Geri
u) Upper Rising Block: Age Uke
v) Middle Block: Soto Uke/Uchi Uke
w) Downward Block: Gedan Barai

[N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.]

SUGGESTED READINGS

https://wayofmartialarts.com/what-are-the-basic-steps-moves-of-karate/
https://www.realbuzz.com/articles-interests/sports-activities/article/basic-karate-techniques/
https://thekarateblog.com/karate-moves/
Major National and International tournaments.

OR

JUDO

Fundamental skills:

a) Rej (Salutation)
b) Ritsurei (Salutation in standing position)
c) Zarai (Salutation in the sitting position)
d) How to wear Judo costume
e) Kumi Kata (Methods of holding Judo costume)
f) Shisei (Posture in Judo)
g) Kuzushi (Act of disturbing the opponent posture)
h) Tsukuri and Kake (Preparatory action for attack)
i) Ukemi (Break fall)
j) Urhiro Ukemi (Rear break fall)
k) Yoko Ukemi (Side break fall)
l) Mae Ukemi (Front break fall)
m) Mae mawari Ukemi (Front rolling break fall)
n) Suri-ashi (Gliding foot)
o) Tsugi-ashi (Following footsteps)
p) Ayumi-ashi (Walking footsteps)
q) Nage-waze (Throwing Techniques)

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r) Hiza Guruma (knee wheel)
s) Sesae Tsurikomi-ashi (Drawing ankle throw)
t) O Goshi (Major loin)
u) Katama waze (Grappling Techniques)
v) Kesa gatame (Scaff hold)
w) Kata-gatame (Shoulder hold)
x) Kami-shiho gatama (Locking of upper quarters).
y) Method of escaping from each hold.

[N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.]

SUGGESTED READINGS

https://judoinfo.com/judo-basics-beginners/
http://kodokanjudoinstitute.org/en/waza/list/
https://www.wikihow.com/Do-Judo

BPESCC13T: Posture, Wellness and Weight Management. Credits: 6

Unit-I

1.1. Posture: Concept, Significance and Benefits, Characteristics.
1.2. Bad Posture: Sitting, Standing, Walking. Lying down, Effects of Bad Posture on the Body.
1.3. Postural Deformities: Types and Causes of Kyphosis, Scoliosis, Lordosis, Knock Knees, Bow Legs, Flat Foot and respective corrective exercises.
1.4. Illnesses due to Improper Posture-Back Pain, Neck Pain and their Corrective Exercises.

UNIT-II

2.1. Wellness - Concept, Definition, Components, Significance with reference to Positive Lifestyle.
2.2. Concepts of Quality of Life and Body Image.
2.3. Factors affecting Wellness.
2.4. Wellness programmes with special references with Physical Education Programme.

Unit-III

3.1. Concept of Body Weight and Importance of Ideal Body Weight.
3.2. Assessment of Body Weight - Visual Inspection, Height-weight Chart, Body Mass Index (BMI), Waist-Hip Ratio (WHR); Procedure for Measuring Body Weight, Height, Calculation of Body Mass Index (BMI) and Waist-Hip Ratio (WHR).
3.3. Health Problems caused by life style disorders: Diabetes Mellitus (Type II), Atherosclerosis, Coronary Heart Disease, Anorexia Nervosa, Bulimia Nervosa, Anemia, and Osteoporosis.

Unit-IV

4.1. Concept of Nutrition, Nutrients, Balance Diet, Dietary Aids and Gimmicks.
4.2. Concept of Activity, Energy Balance Equations, Caloric Intake and Expenditure.
4.3. Concept and Causes of Malnutrition. Ways and Means for Weight Management - Losing, Gaining and Maintaining Body Mass.
4.4. Weight Management and Obesity - Concept, Causes, Assessment, Management; Obesity Related Health Problems.

SUGGESTED READINGS

1. ACSM'S (2001), ACSM Fitness Book (U.K Human Kinetics).
2. Brown, J.E. (2005) Nutrition Now Thomson-Wadsworth.

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3. Corbin, C. B. G. J. Welk. W. R Corbin, K. A. Welk (2006) Concepts of Physical Fitness: for Wellness. McGraw Hill, New York, USA.
4. Sahu, D.P. Health and Physical Education Status in Tribal Schools. Weser Books. Germany.
5. Fahey, T.D., M.P. Insel and W.T. Rath (2006), Fit & Well: Core Concepts and Labs in Physical Fitness, McGraw Hill, New York.
6. Hoeger, W.W.& S Hoeger (2007) Fitness and Wellness. 7Ed. Thomson Wadsworth, Boston,USA.
7. Kamlesh, M. L. & Singh, M. K. (2006) Physical Education (Naveen Publications).
8. Kansal, D.K. (2008) Textbook of Applied Measurement, Evaluation & Sports Selection. Sports & Spiritual Science Publications, New Delhi.
9. Sharkey, B. J. (2002), Fitness and Health 5th ed. (U.K., Human Kinetics).
10. Uppal, A.K. (2004), Fitness and Health 5th ed. (U.K., Human Kinetics).

BPESCC14P: Games Specialization and Officiating. **Credits: 6**

Any one game from the following to be taken as per facility available in the college:

1. Football
2. Volleyball
3. Kho-kho
4. Kabaddi
5. Basketball
6. Handball
7. Badminton
8. Table Tennis

Discipline Specific Electives (DSE)

BPESDSE1.1T: Statistics in Physical Education and Sports & Sports for all. **Credits: 6**

Unit-I

1.1. Meaning, Definition and Nature of Statistics.
1.2. Need and Importance of Statistics, Types of Statistics.
1.3. Data- Quantitative data and Qualitative data.
1.4. Frequency and Frequency Distribution, Construction of Frequency Distribution.

UNIT-II

2.1. Measure of Central Tendency, Mean, Median and Mode.
2.2. Computation of mean, median and mode from the ungrouped and discrete data.
2.3. Specific characteristics and measure of central tendency.
2.4. Graphical Presentation of Data: Histogram, Frequency Polygon, Frequency Curve.

Unit-III

3.1. Meaning and definition of Sports, Play, Games, Recreation, Pleasure, Happiness, Comforts;
3.2. Motivation towards Sports; Introduction to Sports for fitness, fun and, competitions.
3.3. Sports for Fitness: Meaning and definition; Components of health related Physical Fitness. Measurement of Health Related Physical Fitness (HRPF); Development and Maintenance of Health Related Fitness.
3.4. Sports for Fun: Meaning & Definition of fun, Minor games, Games Festival; Organization and guidelines for Games Festival; Games Festival Facility: Sports Clubs.

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3.5. Sports for Competitions; Meaning & Definition of Competition; Sports Selections; Sports participation and sports competitions.

Unit-IV

4.1. Sports for Health: Meaning and Definition of Health, Preventive health measures and sports.

4.2. Sports for Otherwise equally abled: Introduction, Meaning and definitions of different challenged populations: Visually Challenged, Auditory Challenged, Physical Challenged. Modified Sports for above categories of challenged populations.

4.3. Sports for Physique and appearance Figure and Personality: Meaning, concept and definition of Figure, general appearance, Personality measures; exercise and Sports.

SUGGESTED READINGS

1. Gupta, Sp., Advanced Practical Statistics, New Delhi: S. Chand & Co., 1982.
2. Iks, S.S., Elementary Statically Analysis, Deford & I, IBH publishing Co., Calcutta, 1984.
3. Verma, J.P. A Text book on sports statistics. Gwalior: Venus Publications.
4. Bhatnagar DP. SK Verma and R. Mokha, Human Growth. Exercise Science Publications Society. Department of Sports Sciences, Punjabi University. Patiala-147002, Punjab 1999.
5. Gopalan GB Sastri VR and. Balasubramanian SC (2004). Nutritive Value of Indian Foods. National Institute of Nutrition (ICMR). Hyderabad-500 007.
6. Jensen C. and Naylor J. (2005). Opportunities in Recreation and Leisure Sports. McGraw Hill. Publishers. New York.U.S.A.
7. Kansal DK (2008). Text book of Applied Measurement, Evaluation & Sports Selection, Sports & Spiritual Science Publications, New Delhi.
8. Singh S.P.S. and Malhotra P (2003). Anthropometry. Human Biology Department. Punjabi University. Patiala-147 002 (India).

OR

BPESDSE1.2T: Sports Journalism and Stress Management. Credits: 6

Unit-I

1.1. Ethics of Journalism and sports Bulletins.

1.2. Canons of Journalism - News, Information and Ideas -Journalism and sports Education.

1.3. Structure of sports Bulletin - Compiling a bulletin. Types of Bulletin - Hourly bulletin and special bulletin - External bulletins.

1.4. Sports organization and Sports Journalism.

Unit-II

2.1. General news reporting and Sports reporting.

2.2. Brief review of Olympic Games, Asian Games, Common Wealth Games and Indian Traditional Games.

2.3. Mass Media in Journalism - Radio and T.V Commentary - Running Commentary on the radio - Sports expert's comments.

2.4. Sports analysis for the Radio and T.V.

Unit-III

3.1. Definition of stress and emotion, Causes and effects of stress and anger, two main emotions of stress-fear and anger, Daily life stressors, Process of stress and anger- Psycho-Physiology of stress.

3.2. Adaptation to stress-Reframing of habitual stress resistance,

3.3. Types of stress-personal and social stress Occupational stress, Peer stress/Students stress, Family stress, Stress & elderly and Stress & drug abuse.

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3.4. Stress related diseases- i) Sleep disorder, ii) Eating disorder, iii) Sexual and emotional disorder, iv) Other stress related diseases, v) Stress & Spirituality.

Unit-IV

4.1. Self-awareness and Stress management, Muscular tension reduction, Emotional tension reduction.
4.2. Stress management through physical activity,
4.3. Stress management through recreation.
4.4. Relaxation technique- i) Diaphragmatic breathing, ii) Meditation, iii) Progressive muscle relaxation iv) Yoga v) Mental imagery, vi) Muscle therapy, vii) Massage therapy.

SUGGESTED READINGS

1. Ahiya, B.N. Theory and practice of Journalism, Set to Indian context Ed. 3, Delhi, Subject publications, 1998.
2. Ahiya, B.N. and Choabra, S.S.A Concise course in Reporting Etc, Delhi, Subject publications 1990.
3. Bhaft, S.C. Broadcast Journalism Basic Principles, New Delhi, Har Anand Publications, 1993.
4. Parthasarathy, R. Journalism in India from the Earliest Time to the President day II road, Sterling Publication Pvt., Ltd. 1991.
5. Varma, A.K. Advanced Journalism, Har Anand Publications, New Delhi, 1993.
6. Adrain F & Hemrick E and Sharp P (1998) Anger Management Routledge Publishing Florence Kentucky U.S.A.
7. Allen E (2008) Stress Management for Dummies. For Dummies Publishers, U.S.A.
8. Davis M. et al (2008). The Relation and Stress Reduction workbook Harbinger Publications, USA.
9. Greenberg 1.S. (2008) Comprehensive stress management. McGraw Hill, USA.
10. Hipp E. (2008) Fighting Invisible Tigers: Strew Management for Teens. Free Spirit Publishing, USA.
11. Mac W. (2007), Anger and Stress Management. God's Way Calvary Press, USA. 7. P F (2006) Anger Management Pentagon Press, New York, U.S.A.
12. Swane Y B (2009), Anger Management Sage Publication, New Delhi.

BPESDSE2T: Computer Application in Physical Education and Sports. Credits: 6

Unit-I: Introduction to Computer Application

1.1. Computer and its accessories, Function of various accessories. Concept of Hardware, Software, Operating System and Anti Virus.
1.2. Function of Key Board - Ctrl Key, Shift Key, Cap Lock, Enter, Delete. Backspace, Arrow Key, Esc Key.
1.3. Function of Mouse-Right Click, Left Chick, Single Click, Double Click, Scrolling.
1.4.New File Create, File save, File Open, File Rename, File Delete, Copy, Paste, Cut, Clipart, Insert table & Image.

Unit-II: Word

2.1. Introduction to word
2.2 Creating, saving and opening a document
2.3 Formatting & editing features, drawing table and graphs, page setup, paragraph alignment, spelling and grammar check, bullets and numbering, page number, header and footer, footnote and endnotes, mail merge, printing option and hyperlink.
2.4 Preparation of word document.

Unit-III: Excel

3.1 Introduction to Excel.
3.2 Creating, saving and opening spreadsheet.

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3.3 Format and editing features, adjusting columns width and row height, Creating formulas, short and filter, inserting graph and pictures, printing option.
3.4 Preparation of Excel worksheet**.** Create new e-mail account.

Unit-IV: Power Point
4.1. MS Power Point:
4.2. New Slide Creating, saving and opening a ppt file, Slide deleting.
4.3. Format and editing features, slide show, design, inserting slide number, picture, graph, table, hyperlink and graphics
4.4. Preparation of Power Point Presentation.

SUGGESTED READINGS

1. Integov, D. (2004). Operating system deals, Firewall Media.
2. Marilyn, M.& Roberta, B.(nd) Computers in your future. 2nd edition, India: Prentice Hall.
3. Milke, M. (2007). Adde eger & guide to computer basics. Pearson Education Asia.
4. Sinha, P.K. Sinba, P. (n.d.).Computer fundamentals. 4th edition, BPB Publication.

BPESDSE3.1T: Applied Kinesiology and Biomechanics in Physical Education & Sports and Yogic Sciences. Credits: 6

Unit-I
1.1. Definition & Meaning of Kinesiology & Biomechanics. Scope, Need and importance of Kinesiology and Biomechanics.
1.2. Historical development of Kinesiology and Biomechanics. Concept of Axis, Plane and Movements.
1.3. Involvement of various muscles during different fundamental and auxiliary movements of hip, knee, shoulder, elbow joint, shoulder girdle and trunk region.
1.4. Origin, insertion and action of the muscles with special reference to the following muscles: Pectoralis M,ajor–Deltoid-Biceps-Sartorius- Quadriceps.

Unit-II
2.1. Definition & meaning: Distance, displacement, speed, velocity, acceleration due to gravity, inertia, mass, force, weight, momentum.
2.2. Newton's laws of motion- Law of Inertia, Law of acceleration, Law of action and reaction. Forms of motion - Linear, Angular and General motion.
2.3. Definitions & meaning - angular distance, angular displacement, angular velocity, angular acceleration. Levers - Types of levers, Advantages of levers in sports movement. Definition of Centre of gravity and its importance in sports.
2.4. Force - Definition of forces, types of forces, internal and external forces, centripetal, centrifugal force. Mechanical analysis of walking, running, jumping and throwing.

Unit-III
3.1. Origin of yoga, definition and scope of yoga, limitations and misconceptions of Yoga. Importance of yoga in Physical Education and Sports.
3.2. Philosophical aspects of yoga-Pre-Vedic, Vedic period; Buddhism. Upanishad period, Jainism & Tantra. Yoga asana competition at: State, National, International, SGFI, AIU etc.
3.3. Duties responsibilities of technical official, Scoring system and judgment criteria.
3.4. Protocols for Referees, Judges and Officials.

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Unit-IV

Meaning, Techniques, Precautions & Effects of the following:

4.1. Asanas: padmasana, vajrasana, sidhasana, paschimottanasa, halasana, sarvangasana, shalabhasana, ardhmatsyendrasana, bhujangasana, tadasana, vrikshasana, matsyasana, gomukhasana, ushtrasana, shavasana, makarasana, vrishchikasana, dhanurasana; purna matsyendrasana, chakrasana, ek pad sikandasana, bakasana, mayurasana, shirshasana.

4.2. Pranayama: Anulom-vilom, Bhastrika, Suryabhedhen Pranayama, Sheetali, Sheetkari, Bhramari, Ujjayi Shatkarma: Neti, Dhauti, Nauli, Basti, Kunjal, Kapal Bhati, Shankh Prakshalana.

4.3. Bandhas: Jalandhar, Uddyana, Mool Bandha

4.4. Disease wise treatment through Yoga therapy- Asthma, High & low B.P, Diabetes, Obesity, Heart Disease, Insomania, Arthritis, Backache.

SUGGESTED READINGS

1. Ghosh, S.S. Tatik Jib BalaVidya. Clasique publications, Kolkata.
2. Sahu. D.P. Yogic Management and Common Diseases. Weser Books. Germany.
3. Khatun, A. Yoga and Common Dideases. Rubicon Publications. Londan.
4. Shaw, Dhananjoy., (1998). Pedagogic Kinesiology, Delhi: Sports publication. 7. Susan, J., Hall. (2004). Basic Biomechanics. New York: McGraw Hill Education.
5. Anand Omprarkash (2001). Yog Dawra Kaya Kalp, Kanpur. Sewasth Sahitya Perkashan..
6. Sharma JP and Ganesh S(2007). Yog Kala Ek Prichya. Friends Publication. New Delhi.
7. Sharma J. P. (2007). Manav jeevan evam yoga. Friends Publication. New Delhi.
8. Sharma Jai Prakash and Sehgal Madhu (2006). Yog-Shiksha. Friends Publication. Delhi.
9. Mukerji, A.P. (2010). The Doctorine and Practice of Yoga, General Books, LLC, New Delhi.
10. Sarin N (2003). Yoga Dawara Rogoon Ka Upchhar. Khel Sahitya Kendra.

OR

BPESDSE3.2T: Sports Psychology and Educational Technology. Credits: 6

Unit-I

1.1. Meaning, Definition and Scope of Sports Psychology, Importance of Sports Psychology.

1.2. Types of Psychology, Motor learning - factors that effect on motor learning, Stages of Learning theories, Role of perception in Physical Education and Sports.

1.3. Definition and Meaning of Anxiety, Nature of Anxiety Types of Anxiety,

1.4. Definition and Meaning of Stress - Nature of stress, Types of stress. Anxiety, Arousal and their effects on sports performance.

Unit-II

2.1. Meaning and definition of personality, Assessment of personality, Personality and Sports performance.

2.2. Definition of Motivation, Types of Motivation, Factors influencing Motivation.

2.3. Motivational techniques and its impact on sports performance.

2.4. Mental Preparation Strategies: Preparatory Arousal, Attention focus, Self-talk, Relaxation, Aggression and Sports.

Unit-III

3.1. Education and education technology: Meaning and definitions. Types of education: Formal, Informal and non-formal education.

3.2. Importance of device and methods of teaching and class management.

3.3. Teaching Techniques: Lecture Method, Command Method, Demonstration Method, Imitation Method, Project Method etc.

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3.4. Teaching procedure: Whole method, Whole -part- whole method, Part- whole method.

Unit-IV

4.1. Presentation technique -personal and technical preparation and presentation.

4.2. Verbal Non-verbal communication technique. Details of three fundamental methods: Meaning, Types and Its uses in different situations.

4.3. Teaching Aids: Meaning, Importance and Its criteria for selecting teaching aids. Community Aids, Co-curricular Aids.

4.4. Type of Teaching Aids: Audio aids, Visual Aids, Audio-visual Aids. Meaning, Principles and Advantages of team teaching.

SUGGESTED READINGS

1. Alderman, R.S. (1974). Psychological behavior in Sports, Philadelphia: Saunders Company.
2. Cratty, Bryant. J. (1975). Psychology of Contempory Sports. Englewood Cliffs, N, J. prentice Hall Inc.
3. Butt, Doras Susan, (1989), Psychology of Sports, New York: Van. Nostrand Reinhold Co.
4. Cratty, Bryant, J. (1975). Movement Behaviour and Motor Learning. Philadelphia: Lea & Fogger.
5. Kamlesh. M.L. (1998). Psychology in Physical Education and Sport. New Delhi:
6. Mathew, Gita (1997). Sports Psychology, Karaikudi: Shaju and Shiju Brother Publication.
7. Bhardwaj, A. (2003). New media of Educational Planning. New Delhi: Sarup of sons.
8. Bhatia & Bhatia, (1959). The Principle and Methods of Teaching. New Delhi: Doaba House.
9. Kochar, SK. (1982). Methods and Technique of Teaching. New Delhi: Sterling Publisher Pvt. Ltd
10. Wlia, J.S. (1999). Priciples and Methods of Education. Jullandhar: Paul Publishers.

BPESDSE4P: Project Work **Credits: 6**

Assessment and Comparison/Effect of Physical Education Programme on Body Type, Body Composition, Physical, Physiological, Physical Fitness Components, Sports Skill Tests among Odd/Even Semester Physical Education Students.

Outline of the Project Work:

1. Introduction,
2. Procedure,
3. Result,
4. Academic and Professional Values/Social Values
5. Conclusion,
6. Recommendation.

Body Composition Components:

1. Body Type,
2. Height,
3. Weight,
4. Body Mass Index (BMI),
5. Fat %,
6. Lean Body Mass (LBM).
7. WHR.

Physical and Physiological Components:

1. Age
2. Height
3. Weight,

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4. Grip Strength
5. Back Strength
6. Leg Strength
7. Blood Pressure
8. VC,
9. PFR,
10. RR,
11. HR.

AAHPER Youth Fitness Components:
1. Pull Ups (for boy) / Flexed Arm Hang (for girls),
2. Sit Ups,
3. 50 Yard Dash,
4. Standing Broad Jump,
5. Shuttle Run,
6. 600 Yard Run & Walk

Instructions:
1. Number of sample size consisted of minimum twelve (12).
2. Methodology of every test items should be written with Objective(s), Equipments, Test Administration Procedure and Scoring.
3. Geo Tagged photograph should be given in every test items.
6. Only mean value and preferable T-test/F-test should be given.
7. Data should be presented on tabular form of each test item.
8. Separate comparison table of all test items should be reflected on the Project,
9. Declaration and acknowledgement also be inside the Project.

[N.B.: Specification of equipment and apparatuses are to be required for particular games and Sports.]

Skill Enhancement Course (SEC)

BPESSEC1.1P: Layout knowledge, Officiating ability, Assessment of Body Composition, Physiological Parameters and First-aid. **Credits: 2**

1. Layout knowledge and Officiating ability of Track and Field.
2. Assessment of WHR, BP, VC, PFR, RR, HR.
3. First-aid practical

OR

BPESSEC1.2P: Preparation & Maintenance of Pitches & Application of Gadgets. **Credits: 2**

1. Fundamental concept/Preparation and Maintenance of Cricket Pitch and Basketball Court.
2. Application of different equipment/electronic gadgets uses in the field of Physical Education and Sports.

BPESSEC2.1P: Layout knowledge, Officiating ability, Assessment of Body Type, Somatotype and Fitness Test. **Credits: 2**

a) Layout knowledge and Officiating ability of Games & Sports (All games under Syllabus).

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b) Assessment of Body Type, Somatotype,
c) AAHPER Youth Fitness Test,
d) PEI.

OR

BPESSEC2.2P: Participation in Seminar / Conference **Credits: 2**

a) Atleast three state level officiating courses for students.
b) Atleast two (02) seminar participation

Generic Electives (GE)

BPESGE1P: Basic of Drill and Marching **Credits: 6**

Unit-I Marching:
Command, Fall in Line, Stand at Ease, Stand Easy, Attention, By the Right Number, Right Dress and Front Dress, Fall Out, Dismiss.

Unit-II Turning:
Right Turn, Left Turn, About Turn, Half Right Turn/Right Incline, Half Left Turn/Left Incline. Fall-in a Single Line, Fall-in Three Ranks. Line to file and file to line formation.

Unit-III
Mark Time, Open Order March, Close Order March, Forward March/Quick March, Right Turn at the March, Left Turn at the March, About Turn at the March, Slow March, Saluting to the Front, Salute to the Right, Eye Right & Eye Front. Assessment of DST (Drill Squad Test) of every individual.

Unit-IV Band: Big Drum, Cattle, Uses of Big Drum and Cattle. Band Marches. Different methods of tying the Flag Knot, Protocols of Flag hosting and Flag downing and Flag hand over.

SUGGESTED READINGS
1. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani, India.
2. Bandopadhyay, K. Sarir Siksha Parichay, Clisique Books, Kolkata.
3. Kayal, R. Sarir Siksha Buniad O Itihas. Clasique Books. Kolkata.

BPESGE2: Human Physiology **Credits: 6**

BPESGE2T: Human Physiology **Credits: 4**

1. **Cell and Tissue**: Structure and functions of cell with special emphasis to Plasma membrane (Fluid Mosaic Model) and all cell organelle.
2. **Musculoskeletal System:** Structure and functions of muscles and bones; Mechanism of muscle contraction, isometric and isotonic muscle contraction. Bone deformities in brief.
3. **Blood, Cardiovascular system and Lymphatic System:** Blood- its composition and function, formed elements, Plasma proteins, Haemoglobin, Mechanism of blood coagulation, Anaemia, Blood groups, Introduction to immune system. Structure and functions of heart, Cardiac cycle, Cardiac output, Blood pressure and its regulation**,** Hypertension, Coronary circulation, Effect of exercise on cardiovascular system. Lymph glands and its function, Lymphatic circulation. Spleen-Structure and functions.

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4. **Respiratory System**: Structure and functions of different respiratory organs, Lungs volume and capacities, Gaseous exchange (oxygen and carbon dioxide transport), Mechanism of respiration, Regulation of respiration.
5. **Gastrointestinal System**: Structure and functions of G.I. tract, Process of digestion and absorption of carbohydrate, protein and fat, Structure and functions of liver, gallbladder and pancreas.
6. **Excretory System**: Excretory organs- their structure and functions, Nephron-microscopic structure and function, formation of urine, Micturition. Structure and function of skin, regulation of body temperature.
7. **Endocrinology:** Hypothalamic hormones, Structure and functions of pituitary, thyroid, parathyroid and adrenal gland, Pancreatic hormones and blood sugar regulation; Diseases due to hypo- and hyper secretion of hormones.
8. **Reproductive System**: Structure and functions of male and female reproductive organs, Puberty, Menstrual cycle, Brief idea of pregnancy, parturition, lactation and menopause. Brief concept on spermatogenesis and Oogenesis process.
9. **Nervous system and Special senses:** Structure of neurone; Synapse and synaptic transmission; Neuro-muscular junction, Degeneration and regeneration of nerve. Brief anatomy and functions of cerebral cortex, brain stem, cerebellum and hypothalamus. Structure and functions of Spinal cord; Reflex action. Autonomic nervous system: Sympathetic and Parasympathetic division. Basic physiology of vision, audition, olfaction and gustation.

BPESGE2P: Human Physiology Lab **Credits: 2**

1. Measurement of heart rate at resting condition and after exercise (30 beats/10 beats method)
2. Determination of blood pressure by Sphygmomanometer (Auscultatory method).
3. Determination of Physical fitness index (PFI) by Harvard Step Test and VO_2 max by Queen's College Test
4. Measurement of body temperature (oral, axial and skin) at pre- and post-exercise.
5. Estimation of Haemoglobin percentage (Sahli`s or Drabkinmethod)
6. Determination of Bleeding Time (BT) and Clotting Time (CT)
7. Determination of Blood group (Slide method)
8. Demonstration on the measurement of steady state and endurance time
9. Demonstration on preparation of blood film, staining and identification of WBC, Differential count and total count of RBC and WBC
10. Demonstration of Identification of Histological section of (a) Lungs, (b) Supra Renal Gland, (c) Thyroid, (d) Pituitary (e) Testis, (f) Ovary, (g) Kidney, (h) Liver, (i) Pancreas, G) Small Intestine, (k) Large Intestine, (1) Spinal cord, (m) Cerebellum with proper characteristics

BPESGE3: Food Science and Nutrition **Credits: 6**

BPESGE3T: Food Science and Nutrition **Credits: 4**

1. **Basic concept on Food**, Proximate and protective principles of food, Nutrition and Nutrients.
2. **Carbohydrates** - Definition, Classification, Sources, Functions, Daily requirements; Monosaccharides - glucose, fructose, galactose; Disaccharides - Maltose, lactose, sucrose; Polysaccharides - Dextrin, starch, glycogen, resistant starch; Digestion and absorption of carbohydrate.
3. **Proteins**- Definition, Classification, Sources, Functions, Daily requirements; Amino acids- Classification, types, functions; Digestion & absorption. Assessment of Protein quality (BV, PER, NPU); Effect of too high - too low proteins on health.

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4. **Lipids** -Definition, Classification, Sources, Functions, Daily requirements; Fatty acids-composition, types; Digestion and Absorption of Lipids; Role and nutritional significances of PUFA, MUFA, Omega-3 fatty acid.
5. **Vitamins** –Water and fat soluble vitamins, Sources, Deficiency and excess, Functions, Requirements.
6. **Minerals and Trace Elements**- Physiological Role, Sources, Requirements, deficiency and excess (Calcium, Sodium, Potassium Phosphorus, Iron, Fluoride, Zinc, Selenium, Iodine, Chromium)
7. **Water & Dietary fibers** - Functions, Daily requirements of water, Water balance. Dietary fibers-Classification, sources, composition, properties and nutritional significance.
8. **Nutritional aspects of food commodities**- Cereals and Millets; Pulses and Legumes; Milk and Milk-products; Eggs; Meat, Fish and Poultry; Vegetables and Fruits; Sugar and Sugar products; Fats and Oils; Raising and Leavening agents; Food Adjuncts; Convenience Foods; Salt; Beverages; Preserved Products. Fast food, junk food, GM food. Food Standards. Food, preservation, food processing, food adulteration and food storage.
9. **Energy in Human Nutrition**- Energy and its unit, Energy Balance, Assessment of Energy Requirements—deficiency and excess, Determination of Energy in food, B.M.R. and its regulation, S.D.A.
10. **Nutritional Requirement and RDA**- formulation of RDA and Dietary Guidelines, Reference Man and Reference Woman, Adult consumption unit. Nutrition During Pregnancy, Lactation, Infancy (Breast feeding- its importance), preschool, school going children-and adolescents and old age
11. **Growth, its monitoring and promotion**- Importance of Nutrition for ensuring adequate growth; Use of growth charts and standards, Prevention of growth faltering; Malnutrition and Health; Nutritional intervention programmes to combat malnutrition.
12. **Nutritional assessment and Diet survey**- Nutritional anthropometry; Clinical assessment; Need and importance, methods of dietary survey

BPESGE3P: Food Science and Nutrition Lab **Credits: 2**

1. Identification of Carbohydrates, bile salt, acetone, Proteins, glycerol by systematic analysis
2. Determination of calcium, iron, and Vitamin C content in foods
3. Estimation of acid value, iodine value, Saponification value of fats
4. Detection (adulteration test) of urea in puffed rice, Vanaspati in Ghee/Butter, Khesari flour in besan, Metanil yellow in turmeric/coloured sweet products, Argemone oil in edible oil, Artificial colour / foreign matter in tea (dust/leaves).
5. Planning and preparation of adequate meal for different age groups with special reference to different physiological conditions: infants, pre-schooler, school children, adolescents, adults, pregnancy, lactation and old age
6. Planning and preparation of Diets for the following diseases:
   i) Obesity and Underweight
   ii) Diabetes mellitus
   iii) Hypertension and Atherosclerosis
   iv) Acute and chronic glomerulonephritis
7. Different methods of Food preservation – Drying, Freezing, Frying, canning, bottling etc.
8. Formulation and preparation of low cost and medium cost nutritious/ supplementary recipe.

SUGGESTED READINGS

1. Campbell BI. (2014). Sports Nutrition: Enhancing Athletic Performance, CRC Press, Taylor& Francis,
2. Haff GG. (2008). Essentials of Sports Nutrition Study Guide, Humana Press

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3. Dunford M and Doyle JA. (2008). Nutrition for Sport and Exercise, Thomson Wadsworth
4. Srilakshmi B. (2018). Dietetics, New Delhi: New Age International.

BPESGE4T: Sports Medicine, Physiotherapy and Athletic Care. **Credits: 6**

Unit-I

1.1. Meaning, Definition, Nature and aim and objectives of Sports Medicine.
1.2. Importance of Sports Medicine in Physical Education and Sports. Classification of injuries in Sports, Causes of injuries in Sports.
1.3. Development of Sports Medicine as discipline. Aspect of Sports Medicine. General and specific preventive measures to minimize sports injuries.
1.4. Common Regional Injuries and their management: Shoulder, Elbow, Wrist Knee and Ankle. Signs, Symptoms and Diagnosis of injuries.

Unit-II

2.1. Dope: History, Definition, Classification, Testing Procedure.
2.2. Doping: Effect on Sports performance and effects on Health and Sports.
2.3. Role of NADA and WADA. Role of Managers and Coaches in controlling the dope related issues.
2.4. Sports Hygiene: Bodily Cleanliness, Personal Belongings, Health Hazards in Sports.

Unit-III

3.1. Brief introduction of Physiotherapy
3.2. Need and importance of Physiotherapy
3.3. Different types of Therapeutic Modalities (Cryotherapy, Superficial thermotherapy, Penetrating thermotherapy, Electrical stimulation).
3.4. Guiding principles of therapeutic modalities.

Unit-IV

4.1. Prevention of athletic injuries: Steps of prevention- Pre-participation evaluation, Warm up and Conditioning.
4.2. Emergency care in athletics and First aid management: Meaning and principles. First aid care for
a) Loss of consciousness b) Control of building c) Drowning and basic life support.
4.3 Massage: Meaning, Definition, Classification, General principles, Indication and contraindication.
4.4. Rehabilitation: Concept and Goal. Principle of Therapeutic Exercises. Classification and uses of passive movement and active movements. Mobility exercise..

SUGGESTED READINGS

1. Prentice Williams, E., Therapeutic Modalities Sports Medicine: ST. Louis, 1990.
2. Sundararajan/Sports Medical Lectures: Rosan Publication, Chennai.
3. Edward Donald, Physiotherapy Occupations Therapy and gymnastics, London.
4. St. John Ambulance, etc., First Aid Manual: St. John Ambulance, London, 1997.
5. Pande P.K. and LC, Gupta, Outline of Sports Medicine: Jaypee Brothers, New Delhi, 1987.
6. Christine, M. D., (1999). Physiology of sports and exercise. USA: Human Kinetics.
7. David, R. M. (2005). Drugs in sports, (4th Ed). Routledge Taylor and Francis Group.
8. Hunter, M. D. (1979). A dictionary for physical educators. In H. M. Borrow & R. McGee, (Eds.), A Practical approach to measurement in Physical Education (pp. 573-74). Philadelphia: Lea & Febiger.

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