

**CURRICULUM FRAME WORK:  
TWO-YEARS B.P.ED. PROGRAMME**

**Revised Curriculum as per the NCTE New Regulations 2014 for the two years B.P.Ed. Programme as adopted in the Board of Studies, Department of Physical Education and Sports Science, Panskura Banamali College (Autonomous), Purba Medinipur, West Bengal.**

*“Physical Fitness is not only one of the most important keys to a healthy body; it is the basis of dynamic and creative intellectual activity” John F. Kennedy*

# **GUIDELINES OF REGULATIONS AND MODEL SYLLABUS STRUCTURE FOR B.P.ED. TWO YEARS PROGRAMME (FOUR SEMESTERS) (CBCS)**

*The syllabus has been formulated following Choice Based Credit System, (CBCS) as approved and Circulated by the UGC, the credit hours given in the following curriculum frame work is considered along with the hours of teaching mentioned for each paper / activity / course)*

**Preamble:** Bachelor of Physical Education (B.P.Ed.) two years (Four Semesters Choice Based Credit System) programme is a professional programme meant for preparing teachers of physical education in classes VI to X and for conducting physical education and sports activities in classes XI and XII.

B.P.Ed. programme is designed to integrate the study of childhood, social context of Physical Education, subject knowledge, pedagogical knowledge, aim of Physical Education and communication skills. The programme comprises of compulsory and optional theory as well as practical courses and compulsory school internship.

## **B.P.Ed. 1. Eligibility**

Intake, eligibility and admission procedure as per the NCTE norms and standards.

## **B.P.Ed. 2. Duration**

The B.P.Ed. programme shall be of duration of two academic years, that is, four semesters. However, the students shall be permitted to complete the programme requirements within a maximum of three years from the date of admission to the programme.

## **B.P.Ed. 3. The CBCS System:**

All programs shall run on Choice Based Credit System (CBCS). It is an instructional package developed to suit the needs of students, to keep pace with the developments in higher education and the quality assurance expected of it in the light of liberalization and globalization in higher education.

## **B.P.Ed. 4. Course:**

The term course usually referred to as 'papers' is a component to a programme. All courses need not carry the same weight. The courses should define learning objectives and learning out comes. A course may be designed to comprise Lectures / tutorials / laboratory work / field work / outreach activities / project work / vocational training / viva / seminars / term papers / assignments / presentations / self-study etc. or a combination of some of these.

## **B.P.Ed. 5. Courses of Programme:**

The B.P.Ed. programme consists of a number of courses, the term 'Course' applied to indicate a logical part of subject matter of the programme and is invariably equivalent to the subject matter of a "paper" in the conventional sense. The following are the various categories of

courses suggested for the B.P.Ed. Programme.

Theory:

**Core Course: Elective Course:**

**Practicum: Teaching Practices:**

### **B.P.Ed. 6. Semesters:**

An academic year is divided into two semesters. Each semester will consist of 20-23 weeks of academic work equivalent to 100 actual teaching days. The odd semester may be scheduled from July to December and even semester from January to June. The institution shall work for a minimum of 40 working hours in a week (six days a week).

### **B.P.Ed. 7. Working days:**

There shall be at least 200 working days per year exclusive of admission and examination processes etc.

### **B.P.Ed. 8. Credits:**

The term 'Credit' refers to a unit by which the programme is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or one and half / two hours of practical work / field work per week. The term 'Credit' refers to the weight given to a course, usually in relation to the instructional hours assigned to it. The total minimum credits, required for completing a B.P.Ed. programme is 128 credits and for each semester 32 credits.

### **Provision of Bonus Credits Maximum 06 Credits in each Semester**

<b>Sr. No.</b>	<b>Special Credits for Extra Co-curricular Activities</b>	<b>Credit</b>
1	Sports achievement at State level Competition (Medal Winner) Sports Achievement National level Competition (Medal Winner) Sports participation International level	1 2 4
2	Inter University Participation (Any one game)	2
3	Inter College Participation (min. two game)	1
4	National Cadet Corps / National Service Scheme	2
5	Blood donation / Clean lines drive / Community services	2
6	Mountaineering –Basic Camp, Advance Camp /Adventure Activities	2
7	Organization / Officiating –State / National level in any two games	2
8	News Reposting /Article Writing /book writing / progress report writing	1
9	Research Project	4

Students can earn maximum 06 Bonus credits in each semester by his / her participation in the above – mentioned activities duly certified by the Head of the institution / Department. This Bonus credit will be used only to compensate loss of credits in academic activities.

**B.P.Ed. 9. Examinations:**

- i. There shall be examinations at the end of each semester, for first semester in the month of November / December: for second semester in the month of May / June. A candidate who does not pass the examination in any course(s) shall be permitted to appear in such failed course(s) in the subsequent examinations to be held in November / December or May / June.
- ii. A candidate should get enrolled / registered for the first semester examination. If enrollment / registration is not possible owing to shortage of attendance beyond condone limit / rules prescribed OR belated joining OR on medical grounds, such candidates are not permitted to proceed to the next semester. Such candidates shall redo the semester in the subsequent term of that semester as a regular student; however, a student of first semester shall be admitted in the second semester, if he / she has successfully kept the term in first semester.

**B.P.Ed. 10. Condonation:**

Student must have 75% of attendance in each course for appearing the examination. Students who have 74% to 65% of attendance shall apply for condonation in the prescribed form with the prescribed fee. Students who have 64% to 50% of attendance shall apply for condonation in prescribed form with the prescribed fee along with the Medical Certificate. Students who have below 50% of attendance are not eligible to appear for the examination.

**B.P.Ed. 11. Pattern of Question Papers:**

Question Papers shall have five questions corresponding to four units of each theory course.

**B.P.Ed.: Format of Question Paper for 4 Units.**

Each question paper shall have five questions. The pattern will be as follows:

Question No.	Description	Marks
1	Answer in detail (Long Question) Or Answer in detail (Long Question) (From Unit 1)	15
2	Answer in detail (Long Question) Or Answer in detail (Long Question) (From Unit 2)	15
3	Answer in detail (Long Question) Or Answer in detail (Long Question) (From Unit 3)	15
4	Write short notes: any two out of four (From Unit 4)	15
5	M.C.Q. Type Questions (10 out of 12 Questions) (3 Questions. From each unit)	10
<b>Total</b>		<b>70</b>

**B.P.Ed.12. Evaluation:**

The performance of a student in each course is evaluated in terms of percentage of marks with a provision for conversion to grade point. Evaluation for each course shall be done by a continuous internal assessment (CIA) by the concerned course teacher as well as by end semester examination and will be consolidated at the end of course. The components for continuous internal assessment are;

One Test	15Marks
Seminar/Quiz	5Marks
Assignments	5Marks
Attendance	5Marks
Total	30Marks

Attendance shall be taken as a component of continuous assessment, although the students should have minimum 75% attendance in each course. In addition to continuous evaluation component, the end semester examination, which will be written type examination of at least 3 hours duration, would also form an integral component of the evaluation. The ratio of marks to be allotted to continuous internal assessment and to end semester examination is 30:70. The evaluation of practical work, whatever applicable, will also be based on continuous internal assessment and on an end- semester practical examination.

**B.P.Ed. 13. Minimum Passing Standard:**

The minimum passing standard for CIA (Continuous Internal Assessment) and External Examinations shall be 40%, i.e. 12 marks out of 30 marks and 28 marks out of 70 marks respectively for theory courses. The minimum passing for both CIA & external examination shall be 50%, i.e. 15 marks out of 30 and 35 marks out of 70 marks for the practical courses.

**B.P.Ed. 14. Grading:**

Once the marks of the CIA (Continues Internal Assessment) and SEA (Semester End Assessment) for each of the courses are available, both (CIA and SEA) will be added. The marks thus obtained for each of the courses will then be graded as per details provided in B.P.Ed. 17 from the first semester onwards the average performance within any semester from the first semester is indicated by Semester Grade Point Average (SGPA) while continuous performance (including the performance of the previous semesters also) starting from the first semester is indicated by Cumulative Grade Point Average (CGPA). These two are calculated by the following formula:

$$SGPA = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

$$CGPA = \frac{\sum_{j=1}^n SGPA_j}{N}$$

Where  $C_i$  is the Credit earned for the course in any semester;  $G_i$  is the Grade point obtained by the student for the course  $I$  and  $n$  number of courses obtained in that semester;  $SGPA_j$  is SGPA of semester  $j$  and  $N$  number of semesters. Thus, CGPA is average of SGPA of all the semester starting from the first semester to the current semester.

### **B.P.Ed. 15. Classification of Final Results:**

For the purpose of declaring a candidate to have qualified for the Degree of Bachelor of Physical Education in the First class / Second class / Pass class or First class with Distinction, the Marks and the corresponding CGPA earned by the candidate in Core Courses will be the criterion. It is further provided that the candidate should have scored the First / Second Class separately in both the grand total and end Semester (External) examinations.

### **B.P.Ed. 16. Award of the B.P.Ed. Degree:**

A candidate shall be eligible for the award of the degree of the B.P.Ed. Only if he / she has earned the minimum required credit including Bonus Credits of the programme prescribed above.

### **R. B.P.Ed.17. Letter Grades and Grade Points:**

- i. Two methods – relative grading or absolute grading – have been in vogue for awarding grades in a course. The relative grading is based on the distribution (usually normal distribution) of marks obtained by all the students in the course and the grades are awarded based on a cut-off mark or percentile. Under the absolute grading, the marks are converted to grades based on pre-determined class intervals. To implement the following grading system, the colleges can use any one of the above methods.
- ii. The grades for each course would be decided on the basis of the percentage marks obtained at the end-semester external and internal examinations as per following table:

Percentage	Grade Point	Latter Grade	Description	Classification of final result
85&above	8.5-10.0	O	Outstanding	First class with Distinction
70-84.99	7.0-8.49	A+	Excellent	
60-69.99	6.0-6.99	A	Very Good	First Class
55-59.99	5.5-5.99	B+	Good	Higher Second Class
50-54.99	5.0-5.49	B	Above Average	Second Class
40-49.99	4.0-4.99	C	Average	Pass Class
Below40	0.0	F	Fail / Dropped	Dropped
	0	AB	Absent	

### B.P.Ed. 18. Grade Point Calculation

Calculation of Semester Grade Point Average (SGPA) and Credit Grade Point (CGP) and declaration of class for B.P.Ed. programme.

The credit grade points are to be calculated on the following basis:

$$SGPA = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

#### Example-I

Marks obtained by student in course CC101 = 65/100

Percentage of marks=65%

Grade from the conversion table is = A

Grade Point = 6.0+5 (0.99 / 9.99)

$$= 6.0 + 5 \times 0.1$$

$$= 6.0 + 0.5$$

$$= 6.5$$

The Course Credits = 04

Credits Grade Point (CGP) = 6.5 × 04 = 26

The semester grade point average (SGPA) will be calculated as a weighted average of all the grade point of the semester courses. That is Semester grade point average (SGPA) = (sum of grade points of all eight courses of the semester) / total credit of the semester as per example given below:

## SEMESTER-1

Courses No.	Credit	Marks out o f 100 (%)	Grade	Grade Point	Credit Grade point
<b>CC-101</b>	4	65	A	6.5	26.0
<b>CC-102</b>	4	60	A	6	24.0
<b>CC-103</b>	4	62	A	6.2	24.8
<b>EC-101 / EC-102</b>	4	57	B+	5.7	22.8
<b>PC-101</b>	4	55	B+	5.5	22.0
<b>PC-102</b>	4	72	A+	7.2	28.8
<b>PC-103</b>	4	66	A	6.6	26.4
<b>PC-104</b>	4	72	A+	7.2	28.8
	32				203.6

### Examples: Conversion of marks into grade points

$$\text{CC-101 } 65 = 60+5 = 6.0+5 \times (0.99/9.99) = 6.0+5 \times 0.1 = 6.0+0.5 = 6.5$$

$$\text{CC-102 } 60 = 6.0$$

$$\text{CC-103 } 62 = 60+2 = 6.0 +2 \times (0.99/9.99) = 6.0 +2 \times 0.1 = 6.0 +0.2=6.2$$

$$\text{EC-101/EC-102 } 57 = 55+2 = 5.5+2 \times (0.49/4.99) = 5.5 +2 \times 0.1 = 5.5+ 0.2 = 5.7$$

$$\text{PC-101 } 55 = 5.5$$

$$\text{PC-102 } 72 =70 +2=7.0+2 \times (1.49 / 14.99) =7.0+2 \times 0.1=7.0+0.2 =7.2$$

$$\text{PC-103 } 66 =60 +6=6.0+6 \times (0.99/9.99) = 6.0+6 \times 0.1 = 6.0+0.6= 6.6$$

$$\text{PC- 104 } 72 =70 +2 = 7.0+ 2 \times (1.49 / 14.99) =7.0+2 \times 0.1=7.0 +0.2= 7.2$$

SEMESTER GRADE POINT AVERAGE (SGPA) = Total Credit Grade Points

$$= 203.6 / 32 = 6.3625$$

SGPA Semester I = 6.3625

At the end of Semester-1 Total SGPA = 6.3625

Cumulative Grade Point Average (CGPA) = 6.3625 / 1= 6.362

CGPA=6.66875, Grade = A, Class = First Class

## SEMESTER- 2

Courses No.	Credit	Marks out o f 100 (%)	Grade	Grade Point	Credit Grade point
<b>CC-201</b>	4	76	A+	7.6	30.4
<b>CC-202</b>	4	64	A	6.4	25.6
<b>CC-203</b>	4	59	B+	5.9	23.6
<b>EC-201/EC-202</b>	4	80	A+	8	32.0
<b>PC-201</b>	4	49	C	4.9	19.6
<b>PC-202</b>	4	64	A	6.4	25.6
<b>PC-203</b>	4	55	B+	5.5	22.0
<b>TP-201</b>	4	72	A+	7.2	28.8
	32				207.6

SGPA Sem. II = 6.4875

At the end of Semester- 2



Total SGPA for two Semesters =12.85

Cumulative Grade Point Average (CGPA) =12.85/2=6.425

CGPA = 6.66875, Grade= A, Class = First Class

### SEMESTER-3

Courses No.	Credit	Marks out o f 100 (%)	Grade	Grade Point	Credit Grade point
<b>CC-301</b>	4	64	A	6.4	25.6
<b>CC-302</b>	4	64	A	6.4	25.6
<b>CC-303</b>	4	59	B+	5.9	23.6
<b>EC-301/EC-302</b>	4	81	A+	8.1	32.4
<b>PC-301</b>	4	49	C	4.9	19.6
<b>PC-302</b>	4	64	A	6.4	25.6
<b>PC-303</b>	4	68	A	6.8	27.2
<b>TP-301</b>	4	75	A+	7.5	30.0
	32				209.6

SGPA Sem. III = 6.55

At the end of Semester -3

Total SGPA for three Semesters =19.4

Cumulative Grade Point Average (CGPA) =19.4/3=6.466667

CGPA=6.66875, Grade= A, Class= First Class

### SEMESTER-4

Courses No.	Credit	Marks out o f 100 (%)	Grade	Grade Point	Credit Grade point
<b>CC-401</b>	4	83	A+	8.3	33.2
<b>CC-402</b>	4	76	A+	7.6	30.4
<b>CC-403</b>	4	59	B+	5.9	23.6
<b>EC-401/EC-402</b>	4	81	A+	8.1	32.4
<b>PC-401</b>	4	49	C	4.9	19.6
<b>PC-402</b>	4	78	A+	7.8	31.2
<b>TP-401</b>	4	81	A+	8.1	32.4
<b>TP-402</b>	4	75	A+	7.5	30.0
	32				232.8

SGPA Sem. IV = 7.275

At the end of Semester - 4

Total SGPA for all the four semesters=26.675

Cumulative Grade Point Average (CGPA) = 26.675/4 = 6.66875

CGPA = 6.66875, Grade = A, Class=First Class

**Note:**

(1) SGPA is calculated only if the candidate passes in all the courses i.e. get minimum C grade in all the courses.

(2) CGPA is calculated only when the candidate passes in all the courses of all the previous and current semesters.

(3) The cumulative grade point average will be calculated as the average of the SGPA of all the semesters continuously, as shown above.

(4) For the award of the class, CGPA shall be calculated on the basis of:

- (a) Marks of each Semester End Assessment and
- (b) Marks of each Semester Continuous Internal Assessment for each course. The final Class for B.P.Ed. Degree shall be awarded on the basis of last CGPA (grade) from all the one to four semester examinations.

**B.P.Ed. 19. Grievance Redressed Committee:**

The college / department shall form a Grievance Redressal Committee for each course in each college / department with the course teacher / Principal / Director and the HOD of the faculty as the members. This Committee shall solve all grievances of the students.

**B.P.Ed. 20. Revision of Syllabi:**

- 1) Syllabi of every course should be revised according to the NCTE.
- 2) Revised Syllabi of each semester should be implemented in a sequential way.
- 3) In courses, where units / topics related to government all provisions, regulations or laws, that change to accommodate the latest developments, changes or corrections are to be made consequentially as recommended by the Academic Council. All formalities for revisions in the syllabi should be completed before the end of the semester for implementation of the revised syllabi in the next academic year.
- 4) During every revision, up to twenty percent of the syllabi of each course should be changed so as to ensure the appearance of the students who have studied the old (unrevised) syllabi without any difficulties in the examinations of revised syllabi.
- 5) In case, the syllabus of any course is carried forward without any revision, it shall also be counted as revised in the revised syllabi.

## Semester - I

<b>Part A: Theoretical Course</b>						
<b>Course Code</b>	<b>Title of the Papers</b>	<b>Total Hours</b>	<b>Credit</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>Core Course</b>						
<b>CC-101</b>	History, Principles and Foundation of Physical Education & Olympic Movement	4	4	30	70	100
<b>CC-102</b>	Human Anatomy and Sports Physiology	4	4	30	70	100
<b>CC-103</b>	Health Education and Environmental Studies	4	4	30	70	100
<b>Elective Course (Any one)</b>						
<b>EC-101</b>	Physical Literacy through Movement Education	4	4	30	70	100
<b>EC-102</b>	Principles of Officiating and Coaching in Sports					
<b>Part-B Practical Course</b>						
<b>PC-101</b>	<b>Running Event:</b> Running technique, Starting and finishing (50) <b>Throwing Events:</b> Putting the shot, Discus, Javelin (50)	6	4	30	70	100
<b>PC-102</b>	<b>Swimming</b>	6	4	30	70	100
<b>PC-103</b>	<b>March Past-20</b> <b>Mass Demonstration Activities:</b> Dumbbells / Wands / Hoop / Umbrella / Lezium /Calisthenics etc. (Any two) - 10+10=20 <b>Racket Games:</b> Table Tennis, Badminton, Tennis (Any two) 30+30= 60	6	4	30	70	100
<b>PC-104</b>	<b>Yogasana - 40,</b> <b>Weight training and Weight lifting- 30</b> <b>Aerobics-30</b>	6	4	30	70	100
<b>Total</b>		40	32	240	560	800

## Semester - II

<b>Part A: Theoretical Course</b>						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
<b>Core Course</b>						
<b>CC-201</b>	Yogic Science and Yoga Therapy	4	4	30	70	100
<b>CC-202</b>	Educational Technology and Methods of Teaching in Physical Education	4	4	30	70	100
<b>CC-203</b>	Organization and Administration in Physical Education and Sports	4	4	30	70	100
<b>Elective Course (Any one)</b>						
<b>EC-201</b>	Contemporary Issues in Physical Education, Fitness and Wellness	4	4	30	70	100
<b>EC-202</b>	Sports Nutrition and Weight Management					
<b>Part-B Practical Course</b>						
<b>PC-201</b>	<b>Track and Field:</b> Running Event- Hurdles and Relay(40) Jumping Events – Long jump, High Jump and Triple jump (60)	6	4	30	70	100
<b>PC-202</b>	<b>Gymnastics</b>	6	4	30	70	100
<b>PC-203</b>	<b>Team Games:</b> Football and Volleyball (30×2=60) Softball and Handball (20×2 =40)	6	4	30	70	100
<b>Part – C Teaching Practices</b>						
<b>TP-204</b>	Teaching Practices - 10 lessons: 8 internally evaluated and 2 externally evaluated (Minimum 4 in campus and 4 off campus – 4 General Lesson Plan (Formal Activities) and 4 Specific Lesson Plan from other games (Running, Throwing, Table Tennis, Badminton, Yogasana).	6	4	30	70	100
<b>Total</b>		40	32	240	560	800

## Semester - III

<b>Part A: Theoretical Course</b>						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
<b>Core Course</b>						
<b>CC-301</b>	Science of Sports Training	4	4	30	70	100
<b>CC-302</b>	Computer Applications in Physical Education and Sports Science	4	4	30	70	100
<b>CC-303</b>	Sports Psychology and Sociology in Physical Education and Sports	4	4	30	70	100
<b>Elective Course (Any one)</b>						
<b>EC-301</b>	Sports Medicine, Physiotherapy and Rehabilitation	4	4	30	70	100
<b>EC-302</b>	Curriculum Design in Physical Education					
<b>Part-B Practical Course</b>						
<b>PC-301</b>	<b>Combative Sports:</b> Karate, Taekwondo, Judo, Boxing, Wrestling and Lathi (Any two out of these) (50+50)	6	4	30	70	100
<b>PC-302</b>	<b>Team Games:</b> Cricket, Basketball (40×2 = 80) Throwball (20)	6	4	30	70	100
<b>PC-303</b>	<b>Indigenous Games:</b> Kabaddi (20) & Kho-Kho (20) Hockey (40) and Netball (20).	6	4	30	70	100
<b>TP-304</b>	Teaching Practice: Volleyball / Football / Handball / Cricket / Basketball / Indigenous games- 10 lessons: 8 internally evaluated and 2 externally evaluated (50+50 marks)	6	4	30	70	100
<b>Total</b>		40	32	240	560	800

## Semester - IV

<b>Part A: Theoretical Course</b>						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
<b>Core Course</b>						
<b>CC-401</b>	Measurement and Evaluation in Physical Education and Sports Science	4	4	30	70	100
<b>CC-402</b>	Kinesiology and Biomechanics in Sports	4	4	30	70	100
<b>CC-403</b>	Research and Statistics in Physical Education and Sports	4	4	30	70	100
<b>Elective Course (Any one)</b>						
<b>EC-401</b>	Theory of Sports and Games	4	4	30	70	100
<b>EC-402</b>	Sports Management					
<b>Part-B Practical Course</b>						
<b>PC-401</b>	Games Specialization (Any one) - Evaluation of Performance Ability (100)	6	4	30	70	100
<b>PC-402</b>	Project on game specialization and Adventure activity / Outdoor activity: Camping / Trekking / Hiking / Rock-climbing / Artificial Climbing etc. (50 marks) <b>To be Evaluated by the Internal Examiner</b>  Lab-based Practical on Physical and Physiological/Psychological/Biomechanical measures (Total internal and final curriculum will be framed by concerned Department (50 marks)	6	4	50+50		100
<b>TP-403</b>	Coaching Lesson: 4 Internal lessons on selected game specialization and 1 external lesson	6	4	30	70	100
<b>PC-404</b>	Class Room Teaching –05 lessons classroom teaching 4 internally evaluated and 1externally evaluated (100 marks)	6	4	30	70	100
<b>Total</b>		40	32	240	560	800
<b>Grand Total (SEM I+II+III+IV)</b>		160	128	960	2240	3200

## **Semester-I**

### **Theory Courses**

#### **CC-101 HISTORY, PRINCIPLES AND FOUNDATION OF PHYSICAL EDUCATION & OLYMPIC MOVEMENT**

##### **UNIT-1: Introduction to the Concept of Physical Education**

- 1.1 Meaning, definition, scope and misconceptions of Physical Education.
- 1.2 Aims and objectives of Physical Education.
- 1.3 Relationship of Physical Education with general education, need for Physical Education in modern society.
- 1.4 Physical Education as an art and science.

##### **UNIT-2: History of Development of Physical Education**

- 2.1 History of the development of Physical Education during Pre-Independence period.
- 2.2 Post-Independence period - Physical Education in India with reference to development of Physical Education in West Bengal.
- 2.3 Contribution of Akhras, Vyayamshalas & YMCA.
- 2.4 Contribution of eminent Physical Educationists: J. B. Basedow, J. C. F. Gutsmuths, F. L. Jahn, Franz Nachteggall, Niles Bukh, P. H. Ling, H.C.Buck, James Buchanan, P. M. Joseph, K. N Das, Lila Dey.

##### **UNIT-3: Foundation & Principles of Physical Education**

- 3.1 **Philosophical foundation:**  
Idealism, Realism, Pragmatism and Naturalism in Physical Education
- 3.2 **Biological Principles:**  
Change of locomotion from biped to quadruped position – advantages and disadvantages. – Age, gender characteristics & body type.
- 3.3 **Psychological principles:**  
Psychological factors affecting sports performance, Growth and Development – meaning, difference and principles.
- 3.4 **Sociological principles:**  
Socialization through Physical Education, social integration and cohesiveness, National & International integration through sports

##### **UNIT-4: Olympic Movement**

- 4.1 The history of ancient Olympic movement.
- 4.2 The significant stages in the development of the modern Olympic movement, Philosophy of Olympic movement
- 4.3 Significance of Olympic Ideals, Olympic Rings, Olympic Flag, Olympic Oath.
- 4.4 International Olympic Committee - structure and functions, National Olympic Committees and their role in Olympic movement, types of Olympic Games.

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5. Obertuffer, (1970). Delbert, Physical Education. New York: Harper & Brothers Publisher.
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7. William, J. F. (1964). The Principles of Physical Education. Philadelphia: W.B. Saunders Co.

## **CC-102 HUMAN ANATOMY AND SPORTS PHYSIOLOGY**

### **UNIT-1: Introduction of the Human Body**

- 1.1 Organization of the human body and brief introduction of Anatomy and Physiology in the field of Physical Education and Sports.
- 1.2 Cell-structure and functions.
- 1.3 Tissue- Types of tissue and their functions.
- 1.4 Skeletal System- Bones of the human body-Axial and Appendicular skeleton. Classification and functions of bone, anatomical sex difference. Brief description of joints & movements around joints.

### **UNIT-2: System I**

- 2.1 Muscular system- Types of muscle and functions-structure of skeletal muscle, major muscles of shoulder, hip and knee joint
- 2.2 Digestive system: The alimentary canal /G.I. Tract, accessory glands and digestive juices – Brief outline of process of carbohydrate, fat and protein digestion.
- 2.3 Energy metabolism: Brief discussion on energy metabolism, fuel for muscular work.
- 2.4 Circulatory System: Function of circulatory system. Composition and function of blood, Heart- location and structure, pulmonary circulation, systemic circulation. Cardiac cycle, blood pressure, blood group, blood coagulation.

### **UNIT-3: System II**

- 3.1 Respiratory system: Organs of respiration. Mechanism of respiration: Internal and external respiration.
- 3.2 Excretory system: Structure and function of kidney, urine formation.
- 3.3 Endocrine system: Location, secretion and functions of different Endocrine glands.
- 3.4 Nervous system: Organization, Central Nervous System- Brain, spinal cord, Autonomic nervous system. Concept of nerve- muscle physiology: Neuromuscular junction and transmission.

### **UNIT-4: Effect of Exercise on Different System**

- 4.1 Exercise - Concept and types.
- 4.2 Types of muscular contraction. Effect of exercise on muscular system.
- 4.3 Effect of exercise on circulatory system- Heart rate, stroke volume, cardiac output, athletic heart.
- 4.4 Effect of exercise on respiratory system- Tidal volume, respiratory rate, pulmonary ventilation, oxygen uptake, oxygen debt or EPOC (Excess Post exercise oxygen consumption)

### **References:**

1. Gupta, A. P. (2010). Anatomy and Physiology. Agra: Sumit Prakashan.
2. Gupta, M. and Gupta, M. C. (1980). Body and Anatomical Science. Delhi: Swaran Printing Press.
3. Guyton, A.C. (1996). Textbook of Medical Physiology, 9th edition. Philadelphia: W.B.
4. Karpovich, P. V., Philosophy of Muscular Activity. London: W.B. Saunders Co. Lamb,
5. G. S. (1982). Essentials of Exercise Physiology. Delhi: Surjeet Publication.
6. Moorthy, A.M. (2014). Anatomy Physiology and Health Education. Karaikudi: Madalayam Pub.
7. Morehouse, L. E. & Miller, J. (1967). Physiology of Exercise. St. Louis: The C.V. Mosby Co. Pearce.
8. E. C. (1962). Anatomy and Physiology for Nurses. London: Faber & Faber Ltd.
9. Sharma, R. D. (1979). Health and Physical Education, New Delhi, Gupta Prakashan.
10. Singh, S. (1979). Anatomy of Physiology and Health Education. Ropar: Jeet Publications.



## **CC-103 HEALTH EDUCATION AND ENVIRONMENTAL STUDIES**

### **UNIT-1: Health and Health Education**

- 1.1 Concept, dimensions, spectrum and determinants of health.
- 1.2 Definition of health education, aims, objectives and principles of health education.
- 1.3 Personal hygiene: care of eye, ear, skin, hair and teeth.
- 1.4 School Health Program: health service, health instruction, health supervision, and health record.
- 1.5 Safety education, First-Aid and emergency care.

### **UNIT-2: Health Problems - Prevention and Control**

- 2.1 Communicable diseases: Malaria, dengue, dysentery, cough and cold, chicken pox and STD.
- 2.2 Non-communicable diseases: Obesity, Diabetes, Hyper tension, COPD, Cancer.
- 2.3 Nutritional disorder: Mother-child health care, Population explosion, Food Adulteration, FSSAI – It's Role and function.
- 2.4 Meaning of skeletal and Postural Deformities – Cause and Correction of Kyphosis, Lordosis, Scoliosis, Bow leg, Knock knee and Flat foot.

### **UNIT- 3: Environmental Studies**

- 3.1 Historical background and concept of Environmental Studies.
- 3.2 Meaning, scope, need and importance of Environmental Studies.
- 3.3 Recycling of wastes (Non-degradable and Bio-degradable), plastic recycling and probation of plastic bag/cover.
- 3.4 Role of school in environmental conservation and sustainable development.

### **UNIT- 4: Natural Resources and Related Environmental Issues**

- 4.1 Water resources, food resources and land resources.
- 4.2 Meaning, hazards and control measures of air pollution, water pollution, soil pollution, noise pollution and thermal pollution.
- 4.3 Management of environment and Govt. Policies- role of Pollution Control Board
- 4.4 Celebration of important days in relation with environment.

### **References:**

1. Agrawal, K.C. (2001). Environmental Biology. Bikaner: Nidhi publishers Ltd.
2. Frank, H. & Walter, H., (1976). Turners School Health Education. Saint Louis: The C.V. Mosby Company.
3. Nemir, A. (n.d.). The School Health Education. New York: Harber and Brothers.
4. Odum, E.P. (1971). Fundamental of Ecology. U.S.A.: W.B. Saunders Co.
5. Paul Asish & Saha Roy Gopa.(2016). Swasthasiksha o PoribeshVidya, Classic Books Publication, Kolkata-12
5. Park, J.E., and Park, K., (2016), Textbook of preventive and Social Medicine, Jabalpur, Banarsidas Bhanot publisher.

# **EC-101 PHYSICAL LITERACY THROUGH MOVEMENT EDUCATION (ELECTIVE)**

## **UNIT-1: Introduction to Movement Education and Physical Literacy**

- 1.1 Definition, meaning & importance of movement education and physical literacy.
- 1.2 Concept of developmentally appropriate physical activities.
- 1.3 Standards based Physical Education curriculum (NASPE Standards).

## **UNIT-2: Motor Skill & Movement Pattern**

- 2.1 Classification of Motor Skills: Fundamental (locomotor, non-locomotor, body management skill), specialized (manipulative, rhythmic movement, game & sport skills).
- 2.2 Skill themes approach and development of skill themes: Traveling, chasing, fleeing, dodging, jumping, landing, transferring body weight, striking, kicking, throwing and catching.
- 2.3 Introduction to movement concepts, development of movement concepts: Space awareness, effort concepts, relationships.
- 2.4 Long Term Athlete Development (LTAD).

## **UNIT- 3: Participation in Physical Activity and Personal and Social Development**

- 3.1 Personal development: self-concept, cognitive functioning and motivational outcomes.
- 3.2 Social development: Altruism, controlling aggression, cooperation, group development.
- 3.3 United Nations and other organizations using sport and traditional sports for social development
- 3.4 Sport for development: Sport for education, economic, gender, health and peace.

## **UNIT- 4: Pedagogical Models for Physical Literacy and Movement Education**

- 4.1 Need for child centered teaching models.
- 4.2 Teaching Games for Understanding (TGFU) model: Invasion games, net/wall games, striking/ fielding games, target games.
- 4.3 Education through movement (ETM) program.
- 4.4 Coaching life skills through sport

## **References:**

1. Abels, K. & Bridges, J. M. (2010) Teaching Movement Education: Foundations for active lifestyles. Human Kinetics
2. Graham, G., Holt, Shirley & Parker, Melissa (1993) Children Moving. A Reflective Approach to Teaching Physical Education with Movement Analysis, Wheel 3<sup>rd</sup> Edition, Mayfield Publishing Company.
3. Lund, J & Tannehill & Lund, Jacalyn (2010) Standards-Based Physical Education Curriculum Development, 2<sup>nd</sup> Edition. Jones & Barlett Learning.
4. Frank, A. M. (2003) Sports and Education: A Reference Handbook (Contemporary Education Issues), ABC-CLIO.
5. Ciccomascolo, L. E. & Sullivan, E. C. (2013) The Dimensions of Physical Education. Jones & Barlett Learning.
6. Pangrazi, R. P. (1998) Dynamic Physical Education for Elementary School Children, 12th edition. Allyn & Bacon.

## **EC 102 PRINCIPLES OF OFFICIATING AND COACHING IN SPORTS (Elective)**

### **UNIT – 1: Introduction of Officiating**

- 1.1 Meaning and concept of officiating.
- 1.2 Importance and principles of officiating.
- 1.3 Relation of official with management, players and spectators.
- 1.4 Measures of improving the standards of officiating.

### **UNIT – 2: Introduction of Coaching**

- 2.1 Meaning and concept of coaching.
- 2.2 Relation of coach with management, players and spectators.
- 2.3 Measures of improving the standards of coaching.
- 2.4 Duties of coach in general, pre, during and post-game, responsibilities of a coach on and off the field.

### **UNIT – 3: Duties of Official**

- 3.1 Duties of official in general, pre, during and post-game.
- 3.2 Mechanics of officiating – rules, position, signals and movement (Track & Field, Football, Volleyball, Basketball, Kho-Kho, Kabaddi, Badminton).
- 3.3 Ethics of officiating

### **UNIT – 4: Qualities and Qualification of Coach and Official**

- 4.1 Qualities and qualification of coach and official, ethics of coaches and officials.
- 4.2 Eligibility of players and teams for participating in Asian Games, Olympic Games and FIFA World Cup.
- 4.3 Eligibility rules of inter-university tournaments.
- 4.4 Integrity and values of sports.

### **Reference Books:**

1. Bunn, J. W., (1968). The Art of Officiating Sports. Englewood cliffs N.J. Prentice Hall.
2. Bunn, J. W., (1972). Scientific Principles of Coaching. Englewood cliffs N. J. Prentice Hall.
3. Dyson, G. H., (1963). The Mechanics of Athletics. London: University of London Press Ltd.
4. Lawther, J.D., (1965). Psychology of Coaching. New York: Pre. Hall.
5. Singer, R. N., (1972). Coaching, Athletic & Psychology. New York: M.C. Grow Hill.

## **Semester–II**

### **Theory Courses**

#### **CC-201 YOGIC SCIENCE AND YOGA THERAPY**

##### **UNIT -1: Introduction of Yoga**

- 1.1 Meaning, definition, and misconception.
- 1.2 History of Yoga: Pre Vedic, Vedic, classical, post-classical and modern period.
- 1.3 Aim and objectives of Yoga
- 1.4 Need and importance of Yoga in Physical Education and Sports

##### **UNIT -2: Methods of Yoga**

- 2.1 Schools of yoga- Karma yoga, Gyana yoga, Bhakti yoga and Raja yoga
- 2.2 Introduction to Hatha yoga
- 2.3 Astanga yoga of Patanjali.
- 2.4 Teaching methods of yoga.

##### **UNIT –3: Effects of Yogic Practices**

- 3.1 Effect of kriyas on human body and mind.
- 3.2 Effects of asanas on human body and mind.
- 3.3 Effects of pranayama on human body and mind.
- 3.4 Effect of meditation on human body and mind.

##### **UNIT–4: Modern Trends in Yoga**

- 4.1 Mission and vision of AYUSH.
- 4.2 Status of yoga studies in India and abroad.
- 4.3 Yoga as education.
- 4.4 Yoga as a therapy.

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

1. Brown, F.Y. (2000). How to Use Yoga. Delhi: Sports Publication.
2. Gharote, M.L. & Ganguly, H., (1988). Teaching Methods for Yogic Practices. Lonavala: Kaivaldham.
3. Rajjan, S. M., (1985). Yoga strengthening of Relaxation for Sportsman. New Delhi: Allied Publishers.
4. Shankar, G. (1998). Holistic Approach of Yoga. New Delhi: Aditya Publishers. Shekar, K.C. (2003). Yoga for Health. Delhi: Khel Sahitya Kendra.
5. Bhowmik Sanjib, Text book on Yoga and Health.
6. Pramanik, N. T., (2015). Yoga Education. Sports Publication, New Delhi
7. Swraswati, S. S., (2002). Asana, Pranayama, Mudra Bandha. Yoga publication trust, Munger, Bihar.
8. Maharshi Patanjali, (2016) Yoga Darshan. Gita Press, Gorakhpur

# **CC – 202 EDUCATIONAL TECHNOLOGY AND METHODS OF TEACHING IN PHYSICAL EDUCATION**

## **UNIT – 1: Introduction**

- 1.1 Education and education technology- meaning and definitions, education is a basis of construction of society.
- 1.2 Types of education – formal, informal and non-formal education.
- 1.3 Educative processes
- 1.4 Importance of device and methods of teaching and class management.

## **UNIT – 2: Teaching Technique**

- 2.1 Teaching Techniques – Lecture method, command method, demonstration method, imitation method, project method etc.; Teaching procedure – whole method, whole – part- whole method, part- whole method.
- 2.2 Presentation technique – personal and technical preparation and presentation
- 2.3 Lesson Plan: concept, importance, types and preparation of lesson plan- practical & class room teaching.
- 2.4 Fundamental methods of teaching.

## **UNIT – 3: Teaching Aids and Competition**

- 3.1 Teaching Aids – meaning, importance and its types. Community aids, co-curricular aids.
- 3.2 Criteria for selecting teaching aids and its application in Physical Education.
- 3.3 Meaning, principles and advantages of team teaching.
- 3.4 Competition and co-operation, intramural and extramural competition.

## **UNIT – 4: Learning, Designing and Teaching Innovations**

- 4.1 Meaning, types and steps of Micro teaching.
- 4.2 Meaning, types and steps of Macro teaching.
- 4.3 Classification of students.
- 4.4 Learning design - meaning, types and principles

## **References:**

1. Bhardwaj, A. (2003). New Media of Educational Planning. New Delhi: Swarup of sons.
2. Rathor L. C. & Tiwari, R.S., (2007). Teaching Method of Physical Education. APH Publishing Corporation, New Delhi.
3. Bhatia & Bhatia, (1959). The Principle and Methods of Teaching. New Delhi: Dorba House.
4. Kochhar, S.K., (1982). Methods and Technique of Teaching. New Delhi: Sterling Publishers Pvt. Ltd.
5. Singh, H., (2016). Educational Technology in Physical Education. Khel Sahitya Kendra, New Delhi.
6. Sampath, K., Pannirselvam, A. & Santhanam, S. (1981). Introduction to Educational Technology. New Delhi: Sterling Publishers Pvt. Ltd.
7. Walia, J.S. (1999). Principles and Methods of Education. Jalandhar: Paul Publishers.

# **CC – 203 ORGANIZATIONS AND ADMINISTRATION IN PHYSICAL EDUCATION AND SPORTS**

## **UNIT - 1: Introduction to Organization and Administration**

- 1.1 Meaning, definition and importance of organization and administration in Physical Education.
- 1.2 Meaning, definition and importance of planning.
- 1.3 Basic Principles of Planning.
- 1.4 Structure, duties and responsibilities of organization and administration (school and district sports organization).

## **UNIT – 2: Office and Time-Table Management**

- 2.1 Meaning definition and functions of office management.
- 2.2 Kinds of office management.
- 2.3 Maintenance of different types of register- stock, issue and purchase register.
- 2.4 Finance and budget- source of income, preparation of a budget accounting.
- 2.5 Time-table management: Meaning, need and importance.

## **UNIT – 3: Management of Sports Facility**

- 3.1 Structure of ideal classroom, washroom, auditorium and indoor, outdoor sports facilities.
- 3.2 Facility Management: Equipment store room, gymnasium, swimming pool, playground.
- 3.3 Equipment: Need, importance, procedure of purchase.
- 3.4 Care and maintenance of various sports equipment and apparatus.

## **UNIT – 4: Tournament**

- 4.1 Importance of tournament
- 4.2 Types of Tournament- Merits and demerits, fixture preparation of various types of tournaments.
- 4.3 Organizational structure of various committees related to athletic meet.
- 4.4 Sports event, intramural and extramural tournament planning.

## **References:**

1. Broyles, F. J. & Robert, H. D. (1979). Administration of Sports, Athletic Programme: A Managerial Approach. New York: Prentice Hall Inc.
2. Bucher, C. A. (1983). Administration of Physical Education and Athletic programme St. Louis: The C.V. Mosby Co.
3. Kozman, H.C. Cassidy, R. & Jackson, C. (1960). Methods in Physical Education. London: W.B. Saunders Co.
4. Pandey, L.K. (1977). Methods in Physical Education. Delhi: Metropolitan Book Depo.

## **EC 201 CONTEMPORARY ISSUES IN PHYSICAL EDUCATION, FITNESS AND WELLNESS (Elective)**

### **UNIT – 1: Concept of Fitness**

- 1.1 Meaning and definition of fitness
- 1.2 Type of fitness- General fitness, sports related fitness, health related fitness and physiological fitness.
- 1.3 Definition and component of physical fitness.
- 1.4 Changing concept of physical fitness

### **UNIT – 2: Concept of Wellness and Lifestyle**

- 2.1 Concept and dimensions of Wellness.
- 2.2 Cyber culture and modern life style.
- 2.3 Diseases due to lifestyle – Their prevention and management through physical activities, occupational hazard.
- 2.4 Construction of wellness profile.

### **UNIT – 3: Principle of Exercise Programme**

- 3.1 Means of fitness development – aerobic and anaerobic exercises.
- 3.2 Principle of obesity control and weight management.
- 3.3 Concept of sets, repetition, volume, intensity, density of exercise.
- 3.4 Concept of designing different fitness training programme for different age group.

### **UNIT – 4: Safety Education and Fitness Promotion**

- 4.1 Definition and need of safety education.
- 4.2 Determination of desirable body weight.
- 4.3 Health drinks and sports drinks- their need and importance.
- 4.4 Common injuries and their management.

### **References:**

1. Difiore, J. (1998). Complete Guide to Post Natal Fitness. London: A & C Black,
2. Giam, C. K. & Teh, K.C. (1994). Sport Medicine Exercise and Fitness. Singapore: P.G. Medical Book.
3. Mc Glynn, G., (1993). Dynamics of Fitness. Madison: W. C. B Brown. Sharkey,
4. B. J. (1990). Physiology of Fitness, Human Kinetics Book.

## **EC- 202 SPORTS NUTRITION AND WEIGHT MANAGEMENT (Elective)**

### **UNIT-1: Introduction to Nutrition**

- 1.1 Meaning and definition of nutrition and sports nutrition.
- 1.2 Guidelines of basic nutrition.
- 1.3 Role of nutrition in sports.
- 1.4 Factors for developing a nutritional plan.

### **UNIT- 2: Nutrients**

- 2.1 Macro nutrients- Carbohydrate, protein, fat – Meaning, sources and functions.
- 2.2 Micro Nutrients- Vitamins, minerals, water – Meaning, sources, classification and functions.
- 2.3 Role of carbohydrate, fat and protein during exercise.
- 2.4 Role of hydration during exercise and water balance.

### **UNIT-3: Nutrition and Weight Management**

- 3.1 Meaning and concept of weight management in modern era. Factors affecting weight management and values of weight management
- 3.2 Concept and importance of B.M.I. (Body Mass Index).
- 3.3 Obesity- Causes and its hazards.
- 3.4 Body Composition- Concept, importance of body composition in sports, methods of measuring body composition.

### **UNIT-4: Steps and Planning of Weight Management**

- 4.1 Nutrition – Daily calorie intake and expenditure.
- 4.2 Balance diet and athletic diet
- 4.3 Design diet and exercise guidelines for weight management.
- 4.4 Dieting versus exercise for weight control. Common Myths about weight loss.

### **References:**

1. Edward L. Fox, Richard W. Bowers and Merle L. Foss, The Physiological Basis of Physical Education and Athletics. William C Brown Pub., Hardcover.
2. William D Mc. Ardle, Frank L. Katch, Exercise Physiology; Energy, Nutrition and Human Performance, Fifth Edition, Lippincott Williams and Wilkins. Philadelphia.
3. Jay Hoffman, Physiological Aspects of Sports Training and Performance, Human Kinetics, Champaign.
4. Tommy Boone, Professional Development of Exercise Physiology, Edwin Meller Pr., Hardcover.
5. Sharon A. Plowman, Exercise Physiology for Health, Fitness and Performance, Lippincott Williams & Wilkins Philadelphia.



## **Semester – III**

### **Theory Courses**

#### **CC – 301 SCIENCE OF SPORTS TRAINING**

##### **UNIT – 1: Introduction to Sports Training**

- 1.1 Meaning and definition of sports training.
- 1.2 Aim and objectives of sports training
- 1.3 Principles of sports training and qualification and duties of a sports trainer.
- 1.4 Components of games and sports training (motor fitness components technique, tactics and strategical approach).

##### **UNIT – 2: Process of Development of Motor Fitness Component**

- 2.1 Strength- Means and method of strength development.
- 2.2 Speed - Means and method of speed development.
- 2.3 Endurance- Means and method of endurance development.
- 2.4 Power and Balance - Means and method of power and balance development.

##### **UNIT – 3: Training Load, Load Dynamics and Training Processes**

- 3.1 Concept, definition and types of training load
- 3.2 Components of training load
- 3.3 Concept of load dynamics and its principles
- 3.4 Technical and Tactical training- Meaning, importance and methods.

##### **UNIT – 4: Programme, Planning and System of sports training**

- 4.1 Periodization- Meaning, definition and types. Aims, objectives and content of different periods- preparatory, competition and transition.
- 4.2 Planning- training session for Micro, Meso and Macro cycles.
- 4.3 Systems of sports training- Basic performance, good performance and high performance, concept of cross training and block training.
- 4.4 Talent identification- Meaning and the process of talent identification.

##### **Reference:**

1. Dick, W. F. (1980). Sports Training Principles. London: Lepus Books.
2. Harre, D. (1982). Principles of Sports Training. Berlin: Sporulated.
3. Jensen, R. C. & Fisher, A.G. (1979). Scientific Basis of Athletic Conditioning. Philadelphia: Lea and Fibiger, 2<sup>nd</sup>Edn.
4. Matvyew, L.P. (1981). Fundamental of Sports Training. Moscow: Progress Publishers.
5. Singh, H. (1984). Sports Training, General Theory and Methods. Patiala: NSNIS.
6. Uppal, A.K., (1999). Sports Training. New Delhi: Friends Publication.

# **CC-302 COMPUTER APPLICATIONS IN PHYSICAL EDUCATION AND SPORTS SCIENCE**

## **UNIT – 1: Introduction to Computer Application**

- 1.1 Components of computer-input and output unit, storage unit, CPU, ALU, control unit.
- 1.2 Starting & quitting windows, setting display, time & date, managing files and folders.
- 1.3 Meaning, need and importance of information and communication technology (ICT).
- 1.4 Application of computer and computer software in Physical Education and Sports.

## **UNIT – 2: Word**

- 2.1 Introduction to MS 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 – 3: Excel**

- 3.1 Introduction to Excel.
- 3.2 Creating, saving and opening spreadsheet.
- 3.3 Format and editing features, adjusting columns width and row height, creating formulas, sort and filter, inserting graph and pictures, printing option.
- 3.4 Preparation of Excel worksheet

## **UNIT – 4: Power Point**

- 4.1 Introduction to Power Point
- 4.2 Creating, saving and opening a PPT file.
- 4.3 Preparation of power point presentation.
- 4.4 Format and editing features, slide show, design, inserting slide number, picture, graph, table, hyperlink and graphics.

## **References:**

1. Irtegov, D. (2004). Operating System Fundamentals. Firewall Media.
2. Marilyn, M. & Roberta, B.(n.d.). Computer in Your Future. 2<sup>nd</sup> edition, India: Prentice Hall.
3. Milke, M. (2007). Absolute Beginner's Guide to Computer Basics. Pearson Education Asia.
4. Sinha, P. K. & Sinha, P. (n.d.). Computer Fundamentals. 4<sup>th</sup> edition, BPB Publication.

# **CC – 303 PSYCHOLOGY AND SOCIOLOGY IN PHYSICAL EDUCATION AND SPORTS**

## **UNIT – 1: Introduction to Psychology and Sociology**

- 1.1 Meaning, importance and scope of sports psychology and sociology.
- 1.2 Biological basis of human behavior.
- 1.3 Individual Differences – heredity and environment.
- 1.4 Psycho-social aspects of human behavior in relation to physical education and sports.

## **UNIT – 2: Learning, Maturity and Growth & Development**

- 2.1 Learning-Definition, types and laws of learning. Theories of learning. Factors affecting learning, transfer of learning. Learning curve – stagnation in learning.
- 2.2 Growth and development – Stages of development, need of physical activity.
- 2.3 Personality - Meaning and definition of personality, characteristics of personality, personality and sports performance.
- 2.4 Mental aspects – Attention, interest, motivation, aggression, emotion.

## **UNIT – 3: Social Science and Physical Education**

- 3.1 Customs, folk way, tradition and their influence in behavior pattern.
- 3.2 Social Group--Primary group and remote group.
- 3.3 Influence of group on individuals and individual on groups.
- 3.4 Theories of play.

## **UNIT – 4: Culture and Physical Education**

- 4.1 Features of culture, importance of culture.
- 4.2 Importance of sports in modern society.
- 4.3 Effects of culture on people lifestyle.
- 4.4 Different methods of studying (Observation/inspection method, questionnaire method, interview method).

## **Suggested Readings**

1. B. J. Cratty. Psychology of Contemporary Sports Champaign: Human Kinetics Publishers,
2. John M. Silva & Roberts, Psychological Foundations of Sport. Champaign: Human Kinetics Publishers.
3. Diane Gills, Psychological Dynamics of Sports. Champaign: Human Kinetics Publishers.
4. Cox, Sports Psychology. Champaign: Human Kinetics Publishers.
5. Richard M. Sumin, Psychology in Sports, Methods & Application. New Delhi: Surjeet Publication.

# **EC-301 SPORTS MEDICINE, PHYSIOTHERAPY AND REHABILITATION (ELECTIVE)**

## **UNIT-1: Sports Medicine**

- 1.1 Meaning and concept of sports medicine, aim and objectives of sports medicine.
- 1.2 Development of sports medicine as discipline –Aspect of sports medicine.
- 1.3 Common regional injuries and their management- shoulder, elbow, wrist knee and ankle –signs, symptoms and diagnosis of injuries.
- 1.4 Concept of drugs and doping and doping agents banned by WADA.

## **UNIT-2: Physiotherapy**

- 2.1 Brief introduction of physiotherapy.
- 2.2 Need and importance of physiotherapy.
- 2.3 Different types of therapeutic modalities (Cryotherapy, Hydrotherapy, Thermo therapy, Electrical stimulation)
- 2.4 Guiding principles of therapeutic modalities.

## **UNIT-3: Athletic Care and Massage**

- 3.1 Prevention of athletic injuries – steps of prevention – pre-participation evaluation – Warm up.
- 3.2 Emergency care in athletics and First aid – Meaning and principles – First aid care for (I) Loss of consciousness (II) control of bleeding (III) Drowning and basic life support.
- 3.3 Protective and supportive equipment: Taping, Bandaging, Padding.
- 3.4 Massage: Classification – general principles, indication and contraindication, effect of massage on various systems.

## **UNIT -4: Rehabilitations**

- 4.1 Concept, goal and principle of rehabilitation.
- 4.2 Meaning of corrective and therapeutic exercise, principle of therapeutic exercises.
- 4.3 Resistance exercise and its types.
- 4.4 Muscle weakness and its examination process, mobility exercise.

## **References:**

1. Christine, M. D., (1999). Physiology of Sports and Exercise. USA: Human Kinetics.
2. Conley, M. (2000). Bioenergetics of Exercise Training. T.R. Baechle, & R.W. Earle, (Eds.), Essentials of Strength Training and Conditioning (pp. 73-90). Champaign, IL: Human Kinetics.
3. David, R. M. (2005). Drugs in Sports, (4<sup>th</sup> Ed). Routledge Taylor and Francis Group.
4. 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 & Fibiger.

## **EC-302 CURRICULUM DESIGN IN PHYSICAL EDUCATION (Elective)**

### **UNIT-1: Modern concept of the Curriculum**

- 1.1 Meaning of curriculum, need and importance of curriculum development, the role of the teacher in curriculum development.
- 1.2 Factors affecting curriculum – Social Factors- Personnel qualifications – Climatic consideration, requirement by the job market.
- 1.3 Equipment and facilities -Time suit ability of hours.
- 1.4 National and professional policies.

### **UNIT-2: Basic Guideline for Curriculum Construction; Contest (Selection and Expansion).**

- 2.1 Focalization, socialization.
- 2.2 Individualization.
- 2.3 Sequence and operation.
- 2.4 Steps in curriculum construction.

### **UNIT-3: Curriculum- Old and new concepts, Mechanics of curriculum planning.**

- 3.1 Basic principles of curriculum construction.
- 3.2 Curriculum design, meaning, importance and factors affecting curriculum design.
- 3.3 Principles of curriculum design according to the needs of the students and state and national level policies.
- 3.4 Role of teachers in curriculum designing.

### **UNIT-4: Under-Graduate Preparation of Professional Preparation.**

- 4.1 Areas of Health Education, Physical Education and Recreation.
- 4.2 Curriculum Design - Experience of education, field and laboratory.
- 4.3 Teaching practice.
- 4.4 Professional competencies to be developed- Facilities and special resources for library, laboratory and other facilities.

### **Reference:**

1. Barrow, H. M. (1983). Man and Movement: Principles of Physical Education. Philadelphia: Lea and Fibiger.
2. Bucher, C. A. (1986). Foundation of Physical Education: St. Louis: The C. V. Mosby & Company.
3. Cassidy, R. (1986). Curriculum Development in Physical Education. New York: Harper & Company.
4. Cowell, C.C. & Hazelton, H.W. (1965). Curriculum Designs in Physical Education. Englewood Cliffs: N.J. prentice Hall Inc.
5. Larson, L.A. (n.d.). Curriculum Foundation in Physical Education. Englewood Cliffs: N.J. Prentice Hall Inc.
6. Underwood, G. L. (1983). The Physical Education Curriculum in Secondary School: Planning and Implementation. England: Taylor and Francis Ltd.
7. Willgoose, C.E. (1979). Curriculum in Physical Education. 3rd Ed. Englewood Cliffs. N.J. Prentice Hall, Inc.

## **Semester – IV**

### **Theory Courses**

## **CC– 401 MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION AND SPORTS SCIENCE**

### **UNIT- 1: Introduction to Test, Measurement & Evaluation**

- 1.1 Meaning of test, measurement & evaluation in Physical education.
- 1.2 Need, importance of test, measurement & evaluation in physical education.
- 1.3 Application of test, measurement & evaluation in physical education.
- 1.4 Principles of evaluation.

### **UNIT - 2: Criteria, Classification and Administration of Test**

- 2.1 Criteria of a good test and scientific authenticity (Reliability, Objectivity, Validity and availability of Norms).
- 2.2 Types of test.
- 2.3 Difference between Physical Fitness Test, Motor Fitness test, and Sports Skill Test.
- 2.4 Administration of test- advance preparation, duties during test and after test.

### **UNIT- 3: Physical Fitness; Motor Fitness and Cardio-respiratory Tests**

- 3.1 AAHPER Youth Fitness Test and AAHPERD Health Related Physical Fitness Test.
- 3.2 JCR test and Fitness Gram Test.
- 3.3 Barrow motor ability test.
- 3.4 Harvard Step test and Tattle Pulse Ratio test.

### **UNIT- 4: Sports Skill Tests**

- 4.1 McDonald Soccer Test
- 4.2 Johnson Basketball Test
- 4.3 Lockhart and McPherson Badminton Test
- 4.4 Russel-Lange Volleyball Test
- 4.5 Harban Singh's Field Hockey Test

### **References:**

1. Bangsbo, J. (1994). Fitness Training in Football: A Scientific Approach. Bagsvaerd, Denmark: Hot Storm.
2. Barron, H. M., & McGhee, R. (1997). A Practical Approach to Measurement In Physical Education. Philadelphia: Lea and Fibiger.
3. Kansal, D.K. (1996). Test and Measurement in Sports and Physical Education. New Delhi: D.V.S. Publications.
4. Mathews, D.K., (1973). Measurement in Physical Education, Philadelphia: W.B. Saunders Company.
5. Pheasant, S. (1996). Body Space: Anthropometry, Ergonomics and Design of Work. Taylor & Francis, New York.
6. Phillips, D. A., & Hornak, J. E. (1979). Measurement and Evaluation in Physical Education. New York: John Willey and Sons.
7. Sodhi, H.S., & Sidhu, L.S. (1984). Physique and Selection of Sports- a Kinanthropometric study. Patiala: Punjab Publishing House.

## **CC-402 KINESIOLOGY AND BIOMECHANICS IN SPORTS**

### **UNIT – 1: Introduction to Kinesiology and Sports Biomechanics**

- 1.1 Meaning and definition of Kinesiology, Biomechanics and Sports Biomechanics
- 1.2 Importance and scope of kinesiology and sports biomechanics in Physical Education and Sports Science.
- 1.3 Terminology of fundamental movements.
- 1.4 Fundamental concepts of following terms – Axis and Planes, Centre of Gravity, Line of Gravity, Scalar and Vector quantities.

### **UNIT – 2: Kinesiological Aspects of Human Movement**

- 2.1 Classification of joints and muscles, name of the major superficial muscles, movements around the joints.
- 2.2 Types of muscle contractions- Concentric, Eccentric, Static, Isotonic, Isometric, Isokinetic.
- 2.3 Posture – Meaning, types and importance of good posture.
- 2.4 Fundamental concepts of following terms- Angle of Pull, All or None Law, Reciprocal Innervations.

### **UNIT – 3: Mechanical Concepts**

- 3.1 Force - Meaning, definition, types, units and its application to sports activities.
- 3.2 Lever - Meaning, definition, types and body Lever. Wheel, axel and pulley.
- 3.3 Motion – Concept, types and its application to sports activities. Newton’s Laws of Motion
- 3.4 Projectile Motion – Concept, types, factors influencing projectile motion.

### **UNIT – 4: Kinematics and Kinetics of Human Movement**

- 4.1 Linear Kinematics – Distance and displacement, speed and velocity, acceleration.
- 4.2 Angular kinematics – Angular distance and displacement, angular speed and velocity, angular acceleration.
- 4.3 Linear Kinetics – Inertia, Mass, Momentum, Impulse, Friction.
- 4.4 Angular Kinetics – Moment of Inertia, Couple.

### **Reference:**

1. Bunn, J. W. (1972) Scientific Principles of Coaching. Englewood Cliffs, N.J. Prentice Hall Inc.
2. Hay, J. G. & Reid, J. G. (1982). The Anatomical and Mechanical Basis of Human Motion, Englewood Cliffs, N.J.: Prentice Hall Inc.
3. Hay, J. G. & Reid, J. G. (1988). Anatomy, Mechanics and Human Motion. Englewood Cliffs, N.J.: Prentice Hall Inc.
4. Hay, J. G. (1970). The Biomechanics of Sports Techniques. Englewood Cliffs, N.J.: Prentice Hall, Inc.
5. Simonian, C. (1911). Fundamentals of Sport Biomechanics. Englewood Cliffs, N.J.: Prentice Hall Inc.
6. Hall, J.S. (1991). Basic Biomechanics. The McGraw-Hill Companies, Inc. First Edition 1991, Brown and Benchmark Publishers.

# **CC– 403 RESEARCH AND STATISTICS IN PHYSICAL EDUCATION AND SPORTS**

## **UNIT- 1: Introduction to Research**

- 1.1 Definition of Research, need and importance of research in Physical Education and Sports.
- 1.2 Scope of research in Physical Education & Sports.
- 1.3 Classification of Research-Basic, Action, Applied.
- 1.4 Research problem, quality of a good researcher.

## **UNIT -2: Research Proposal and Project Report**

- 2.1 Need for surveying related literature and literature sources
- 2.2 Research Proposal- Meaning and significance of research proposal.
- 2.3 Preparation of a project proposal and project report.
- 2.4 Meaning and types of hypotheses.

## **UNIT-3: Basics of Statistical Analysis**

- 3.1 Statistics: Meaning, definition and importance of statistics in Physical Education and Sports Science.
- 3.2 Score and data, methods of collection of data.
- 3.3 Class Intervals: Continuous and discrete series, frequency and frequency distribution, construction of frequency distribution tables.
- 3.4 Graphical presentation of data: Bar diagram, Histogram, Frequency Polygon, Frequency Curve, Pie-chart.

## **UNIT-4: Statistical Models in Physical Education and Sports**

- 4.1 Measures of Central Tendency: Mean, Median and Mode: Definition, importance, advantages, disadvantages and calculation from group and ungrouped data.
- 4.2 Measures of Variability: Meaning, importance, computing from group and ungrouped data.
- 4.3 Deciles and Percentiles: Meaning, importance, computing from group and ungrouped data.

## **References:**

1. Best, J.W. (1963). Research in Education. U.S.A.: Prentice Hall.
2. Clark, H. H., & Clark, D. H. (1975). Research Process in Physical Education. Englewood cliffs, New Jersey: Prentice Hall, Inc.
3. Garrett, H.E. (1981). Statistics in Psychology and Education. New York: Vakils Feffer and Simon Ltd.
4. Oyster, C. K., Hanten, W. P., & Lorenz, L. A. (1987). Introduction to Research: A Guide for the Health Science Professional. Landon: J.B. Lippincott Company.
5. Thomas, J.R., & Nelson J.K. (2005). Research Method in Physical Activity. U.S.A: Champaign, IL: Human Kinetics Books.
6. Thomas, J.R., Nelson, J. K. & Silverman, S.J. (2011). Research Method in Physical Activity. U.S.A: Champaign, IL: Human Kinetics Books.
7. Verma, J. P. (2000). A Text Book on Sports Statistics. Gwalior: Venus Publications.



## **EC- 401 THEORIES OF SPORTS AND GAMES (Elective)**

### **UNIT – 1: Introduction**

- 1.1 General introduction of games and sports (History, development, rules and regulations): Athletics, Basketball, Badminton, Football, Kabaddi, Kho-Kho, Volleyball.
- 1.2 Ground preparation, dimension and marking of above stated sports and games.
- 1.3 Standard equipment and their specification.
- 1.4 Ethics of sports and sportsmanship.

### **UNIT – 2: Scientific Principles of Coaching (Particular Sports and Game Specific)**

- 2.1 Motion and its types. Newton's Laws of motion. Distance displacement, speed, velocity, acceleration.
- 2.2 Force- Frictional force, centripetal and centrifugal force, principles of force.
- 2.3 Equilibrium and stability, lever: their types.
- 2.4 Sports training- Aims, Principles and characteristics. Training load- Component, principles of load, overload (Causes and symptoms), crest load, maximum and sub maximum load.

### **UNIT – 3: Physical Fitness Components: (Particular Sports and Games Specific)**

- 3.1 Definition and types of speed, strength and endurance.
- 3.2 Flexibility and its types.
- 3.3 Coordinative ability and its types.
- 3.4 Training methods: Development of components of physical fitness and motor fitness through following training methods (Continuous method, Interval method, Circuit training method, Fartlek and Weight Training)

### **UNIT – 4: Conditioning Exercise and Warming Up**

- 4.1 Concept and conditioning of warming up
- 4.2 Role of weight training in games and sports
- 4.3 Teaching of fundamental skills and their mastery (Technique, different phases of skill acquisition). Recreational and lead up games.
- 4.4 Tactics, strategy and its principles.

### **References:**

1. Bunn, J. W. (1968). The Art of Officiating Sports. Englewood cliffs N.J. Prentice Hall.
2. Bunn, J. W. (1972). Scientific Principles of Coaching. Englewood cliffs N. J. Prentice Hall.
3. Dyson, G. H. (1963). The Mechanics of Athletics. London: University of London Press Ltd.
4. Lawther, J.D. (1965). Psychology of Coaching. New York: Pre. Hall.
5. Singer, R. N. (1972). Coaching, Athletic & Psychology. New York: Mc. Grow Hill.

## **EC-402 SPORTS MANAGEMENT (Elective)**

### **UNIT – 1: Introduction to Sports Management**

- 1.1 Meaning of administration and management & organization, nature, scope and purpose of sports management.
- 1.2 Steps and principles of sports management.
- 1.3 Qualities and competencies required by the sports manager.
- 1.4 Event management in Physical Education and Sports

### **UNIT – 2: Development of Leadership Qualities**

- 2.1 Meaning and definition of leadership
- 2.2 Forms of leadership- Autocratic, laissez-faire, democratic, benevolent, dictator.
- 2.3 Qualities of administrative leader.
- 2.4 Preparation of administrative leader.

### **UNIT – 3: Sports Management in Educational Institutions**

- 3.1 Sports management in schools, colleges and universities.
- 3.2 Factors affecting planning.
- 3.3 Planning educational institution's sports programme.
- 3.4 Controlling an educational institution's sports programme- Developing performance standard, establishing a reporting system.

### **UNIT – 4: Financial Management in Physical Education**

- 4.1 Financial management in Physical Education and Sports in different Institutions.
- 4.2 Budget-Meaning, importance, criteria of preparing a good budget
- 4.3 Steps of budget making
- 4.4 Principles of budgeting

### **References:**

1. Ashton, D. (1968). Administration of Physical Education for Women. New York: The Ronal Press Cl.
2. Bucher, C.A. Administration of Physical Education and Athletic Programme. 7<sup>th</sup> Edition, St. Louis: The C.V. Mosby Co.
3. Daughtrey, G. & Woods, J.B. (1976). Physical Education and Intramural Programs, Organization and Administration. Philadelphia U.S.A.: W.B. Saunders Co.
4. Earl, F. Z, & Gary, W. B. (1963). Management Competency Development in Sports and Physical Education. Philadelphia: W. Lea and Fibiger.

**Part – B**  
**Practical Courses**  
**Semester – I**

Course Code	PAPER TITLE	Marks		
		Internal	External	Credit
<b>PC-101</b>	<b>Field Event</b>	<b>30</b>	<b>70</b>	<b>4</b>
1.1	<p><b>Running Events:</b> Running Events: Running technique – Arm action, knee action, leg action, starting techniques: standing start, Crouch start and its variations Finishing techniques: Run Through, Forward lunging, Shoulder Shrug.</p> <p><b>Throwing Events:</b> Putting the shot (Disco Put and Parry O’Brien), Discus (half turn and one and half turn), Javelin (5 step rhythm).</p>			
<b>PC-102</b>	<b>Swimming</b>	<b>30</b>	<b>70</b>	<b>4</b>
2.1	<p><b>Swimming:</b> Bubbling, Floating, Gliding, Leg Action, Arm action, Breathing technique Introduction of various strokes: Front crawl, Back crawl, Butterfly, Brest Stroke: Starting Technique and entry into water, Medley, Life Savings</p>			
<b>PC-103</b>	<p><b>March Past:</b> - Sabdhan, Vishram, Dayen Mudh, Bayen Mudh, Pichhe Mudh, Tej Chal, Tej chalk e sath Dayen, Bayen Pichhe mudh, Bayen Ghum, Thham, Salute.</p> <p><b>Mass Demonstration Activities</b> Dumbbells/ Wands/ Hoop/ Umbrella/Lezium/Callisthenics, etc. (Any two)</p> <p><b>Racket Games:</b> Table Tennis, Badminton, Tennis (Any two)</p>	6	14	4
3.1		6	14	
3.2		9+9	21+21	
<b>PC-104</b>	<p><b>Yogasana:</b> Surya Namaskar and Pranayam Paschimottanasana, Gomukhasana, Ustrasana, Ardha-maschandrasana, Halasana, Salvasana, Sarvangasana, Chakrasana Vrikshasana, Padahasthasana, Trikonasana, Utkatasana</p> <p><b>Weight Training:</b> Crouch Sitting Position, Different types of grip, Standing with weight, Dead lift Curling: Two arm dumbbell curling, Barbell curling, Front Curling, Reverse Curling Dumbbell and Barbell press, Front and back press, Bench press (Incline &amp; Decline) Squat: Front and back squat</p> <p><b>Weight Lifting:</b> Clean and Jerk, Snatch</p> <p><b>Aerobics:</b> Low impact core moves - March, Side to side, Double side to side, Grapevine, Knee up, Leg curl, Toe touch, Side lunge, Back lunge, Kick front, Kick side, Heel to raft, 'E' shape, 'v' shape Introduction of step Exercise</p>	12	28	4
4.1				
4.2		9	21	
4.3		9	21	

## Semester – II

Corse Code	Paper title	Marks		
		Internal	External	Credit
<b>PC-201</b>	<b>Track and Field</b>	<b>30</b>	<b>70</b>	<b>4</b>
	<b>Running Event –</b> <b>Hurdles:</b> Take off, clearing and landing. Relay: Baton exchange for difference distances, understanding of Relay zones. <b>Jumping Event</b> Long Jump (Hand Style and Hitch Kick), High Jump (Scissor, Straddle, Fosbury Flop), Triple Jump Track and Field marking, rules and officiating			
<b>PC-202</b>	<b>Gymnastics</b>	<b>30</b>	<b>70</b>	<b>4</b>
	<b>Gymnastics:</b> Floor Exercise, Forward Roll, Backward Roll, Hand stand, Cart Wheel, Leg Split, Somersault, Different dancing steps (Combination) Table Vault: Approach Run, Take off from the beat board, Cat Vault, Squat Vault. <b>Men:</b> Parallel bar, Horizontal bar/Roman rings, Rhythmic Gymnastics, Pyramid (Pair, Trio, Quadrates, Pendant) <b>Women:</b> Uneven bars, Balance Beam, Rhythmic Gymnastics, Pyramid (Pair, Trio, Quadrates, Pendant)			
<b>PC-203</b>	<b>Team Games:</b> Football & Volleyball (60 marks) Handball & Soft ball (40 marks)	30	70	4
<b>TP-204</b>	<b>Outdoor teaching</b> (4 Campus and 4 off-campus): 8 lessons- 4 General Lesson Plan (Formal Activities) and 4 Specific Lesson Plan from the activities- Running, Throwing, Table tennis, Badminton, Yogasana. 8 will be internally evaluated and 2 final lesson (One general and one specific) will be externally evaluated (50 marks)	15+15 =30	35+35 =70	4

**SEMESTER – III**

Course Code	COURSE TITLE	Marks		
		Internal	External	Credit
<b>PC-301</b>	<b>Combative Sports:</b> Karate, Taekwondo Judo, Boxing, Wrestling and Lathi (any two out of these) (50+50 marks) Evaluated by Expert external	30	70	4
<b>PC-302</b>	<b>Team Games:</b> Cricket, Basketball (2 ×40 = 80 marks)	30	70	4
<b>PC-303</b>	<b>Indigenous Game –</b> Kabaddi, Kho-Kho (2 ×20 = 40 marks) Hockey (40 marks), Net Ball (20 marks)	30	70	4
<b>TP-304</b>	<b>Teaching Practice:</b> Team games (Indigenous games) / Volleyball / Football / Handball / Netball -10 lessons- 8 will be internally evaluated and 2 final lesson will be externally evaluated (50+50 marks)	30	70	4

**SEMESTER-IV**

Course Code	PAPER TITLE	Marks		
		Internal	External	Credit
<b>PC-401</b>	<b>Games Specialization:</b> Evaluation of Performance Ability (Athletics, Football, Volleyball, Cricket, Basketball, Badminton, Hockey, Yoga,)	30	70	4
<b>PC-402</b>	Adventure activity/Outdoor activity (50 marks): Camping/Trekking/Hiking/Rock-climbing/Artificial Climbing etc.- To be evaluated by the internal examiner. <b>Lab-based Practical</b> on Physical and Physiological / Psychological / Biomechanical measures (Total Internal and Final curriculum will be framed by concerned University/Department <b>(50 marks)</b> <b>Physical:</b> Height (Standing & Sitting), Weight, BMI, Basic Concept of Anthropometric Measurement <b>Physiological:</b> Systolic and Diastolic Pressure, Breathing Frequency, Resting Heart Rate, Body Temperature, Target Heart Rate, Breath Holding Time. <b>Psychological:</b> Stress, Anxiety, Achievement Motivation- with the measures of questionnaire. <b>Biomechanical:</b> Determination of Average and Instantaneous Velocity; Determination of Co-efficient of Elasticity of Different Balls; Determination of C.G. by Reaction Board / Mass Centre method; Determination of Work done for a Vertical Jump; Measurement of Angle using Goniometry.	50+50		4
<b>PC-403</b>	<b>Coaching lesson:</b> 4 lesson internal & 1 lesson external (60 for lesson and 10 for viva), Internal- 20 for lesson and 10 for Note book).	30	70	4
<b>PC-404</b>	<b>Class room teaching:</b> 10 lessons (8 from theory papers and 2 from sports specialization theory) will be internally evaluated and 1 final lesson will be externally evaluated.	30	70	4

**Table-1: Semester Wise Distribution of Hours per Week**

<b>Semester</b>	<b>Theory</b>	<b>Practicum</b>	<b>Teaching Practice</b>	<b>Total</b>
I	16	24	00	40
II	16	18	06	40
III	16	12	12	40
IV	16	18	06	40
<b>Total</b>	64	72	24	160

Minimum of 36 teaching hours per week is required in five or six days in a week

**Table-2: Number of Credits per Semester**

<b>Semester</b>	<b>Theory</b>	<b>Practicum</b>	<b>Teaching Practice</b>	<b>Total</b>
I	16	16	00	32
II	16	12	04	32
III	16	08	08	32
IV	16	12	04	32
<b>Total</b>	64	48	16	128

Minimum of 36 teaching hours per week is required in five or six days in a week.