

**CURRICULUM FRAME WORK:
TWO -YEARS M.P.ED. PROGRAMME
2021-2023**

Revised Curriculum as per the NCTE New Regulations 2014 for the two - years M.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 M.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 framework is considered along with the hours of teaching mentioned for each paper/ activity / course)

Preamble: The Master of Physical Education (M.P.Ed.) two years (Four Semesters, Choice Based Credit System) programme is a professional programme meant for preparing Physical Education Teachers for senior secondary (Class XI and XII) level as well as Assistant Professor/ Directors/ Sports Officers in Colleges/ Universities and teacher educators in College of Physical Education.

The M.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 comprise of compulsory and optional theory as well as practical courses and compulsory school internship in School/ College/ Sports Organizations/ Sports Academy/ Sports Club.

Regulation for the Degree of Master of Physical Education

- 1. Intake, Eligibility and Admission Procedure:** The Intake, eligibility and admission procedure are as per the NCTE norms and standards. The changes thereafter by NCTE shall be adhered to.
- 2. Duration:** The M.P.Ed. Programme is 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.
- 3. The CBCS System:** All programmes 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 to fit in the light of liberalization and globalization in higher education.
- 4. Course:** The term course usually referred to, as ‘papers’ is a component of a programme. All courses need not carry the same weight. The courses should define learning objectives and learning outcomes. A course may be designed to comprise Lectures/ Tutorials/ Laboratory Work/ Fieldwork/ Outreach Activities/ Project Work/ Vocational Training/ VIVA/ Seminars/ Term Papers/ Assignments/ Presentations/ Self-Study and like or a combination of some of these.
- 5. Courses of Programme:** The M.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 M.P.Ed. Programme.
 - **Theory**
 - **Core Course**
 - **Elective Course**
 - **Practicum**
 - **Compulsory Course (Track and Field)**
 - **Elective Course**

- **Teaching/Coaching Practices**
- **Specialization**
- **Internship**

6. **Dissertation:** The research project (dissertation) has been included as an elective course in semester IV. The students securing 60% and above theory marks in total in their 1st and 2nd semester shall only be permitted to opt for dissertation. The process of dissertation shall start in the III semester. A colloquium to be held for finalization of the research topics for the dissertation, which shall be conducted jointly by an external expert and concerned supervisors. A candidate selecting dissertation must submit his/her dissertation not less than one week before the beginning of the IVth Semester Examination.

7. **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).

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

9. **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 M.P.Ed. Programme is 90 credits and for each semester 20 credits.

Provision of Bonus Credits Maximum 06 Credits in each Semester

Sl. No.	Special Credits for the Extra Co-curricular Activities	Credit
1	Sports Achievement at State level Competitions (Medal Winner),	1
	Sports Achievement at National level Competitions (Medal Winner),	2
	Sports participation International level	4
2	Inter University Participation (in any one game)	2
3	Inter College Participation (minimum two games)	1
4	National Cadet Corps/ National Service Scheme	2
5	Blood donation/ Cleanliness drive/ Community services	2
6	Mountaineering– Basic Camp, Advance Camp/ Adventurous Activities	2
7	News reporting/ Article writing/ book writing/ progress report writing	1

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.

10. **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;

Written Tests	15Marks
Assignments/Lab Practical	10Marks
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, wherever applicable, will also be based on continuous internal assessment and on an end-semester practical examination.

11. Grading: Once the mark 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 Sl.No.12 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:

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

$$CGPA = \frac{\sum_{i=1}^N SGPA_i}{N}$$

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

12. Classification of Final Results: For the purpose of declaring a candidate to have qualified for the Degree of Master 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.

13. Letter Grades and Grade Points:

a. Two methods- relative grading or absolute grading– have been in vogue forwarding 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 and universities can use any one of the above methods.

b. The grades for each course would be decided on the basis of the percentage of marks obtained at the end-semester (external and internal examinations) as per following table:

Percentage	Grade Point	Letter 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	

14. Grade Point Calculation: Calculation of Semester Grade Point Average (SGPA) and Credit Grade Point (CGP) and declaration of class for M.P.Ed. Programme. The credit grade points are to be calculated on the following basis:

$$\text{SGPA} = \frac{\sum_{i=1}^n \text{Grade Point}_i \times \text{Credit}_i}{\sum_{i=1}^n \text{Credit}_i}$$

Example-I

Marks obtained by Student in course MPCC101= 65/ 100 Percentage of marks=65%

Grade from the conversion table is= A Grade Point= 6.0+5(0.99/9.99)

=6.0+5×0.1

=6.0+0.5 =6.5

The Course Credits= 03

Credits Grade Point (CGP) = 6.5×03= 19.5

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 subjects of the semester)/ total credit of the semester as per example given below:

SEMESTER-1

Course Code	Credit	Marks out of 100 (%)	Grade	Grade Point	Credit Grade point
MPCC-101	3	65	A	6.5	19.5
MPCC-102	3	60	A	6	18
MPCC-103	3	62	A	6.2	18.6
MPEC-101/MPEC-102	3	57	B+	5.7	17.1
MPPC-101	3	55	B+	5.5	16.5
MPPC-102	3	72	A+	7.2	21.6
MPPC-103	3	66	A	6.6	19.8
MPPC-104	3	72	A+	7.2	21.6
	24				152.7

Examples: Conversion of marks into grade points

MPCC-101 $65=60+5=6.0+5 \times (0.99/9.99) =6.0+5 \times 0.1= 6.0+ 0.5=6.5$

MPCC-102 $60=6.0$

MPCC-103 $62=60+2=6.0+2 \times (0.99/9.99) =6.0+2 \times 0.1=6.0+0.2=6.2$

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

MPPC-101 $55=5.5$

MPPC-102 $72=70+2=7.0+2 \times (1.49/14.99) =7.0+2 \times 0.1= 7.0+0.2=7.2$

MPPC-103 $66=60+6= 6.0+ 6 \times (0.99/9.99) =6.0+6 \times 0.1= 6.0+0.6=6.6$

MPPC-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 =152.7/24= 6.3625

SGPA Sem. I= 6.3625

At the end of Semester- 1

Total SGPA=6.3625,

Cumulative Grade Point Average (CGPA)= 6.3625/1= 6.3625CGPA= 6.66875,

Grade=A, Class= First Class

SEMESTER-2

Course Code	Credit	Marks out of 100(%)	Grade	Grade Point	Credit Grade point
MPCC-201	3	76	A+	7.6	22.8
MPCC-202	3	64	A	6.4	19.2
MPCC-203	3	59	B+	5.9	17.7
MPEC-201/MPEC-202	3	80	A+	8	24
MPPC-201	3	49	C	4.9	14.7
MPPC-202	3	64	A	6.4	19.2
MPPC-203	3	55	B+	5.5	16.5
MPPC-204	3	72	A+	7.2	21.6
	24				155.7

SGPA Semester 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

Course Code	Credit	Marks out of 100(%)	Grade	Grade Point	Credit grade point
MPCC-301	3	64	A	6.4	19.2
MPCC-302	3	64	A	6.4	19.2
MPCC-303	3	59	B+	5.9	17.7
MPEC-301/MPEC-302	3	81	A+	8.1	24.3
MPPC-301	3	49	C	4.9	14.7
MPPC-302	3	64	A	6.4	19.2
MPPC-303	3	68	A	6.8	20.4
MPPC-304	3	75	A+	7.5	22.5
	24				157.2

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

Course Code	Credit	Marks out of 100(%)	Grade	Grade Point	Credit Grade Point
MPCC-401	3	83	A+	8.3	24.9
MPCC-402	3	76	A+	7.6	22.8
MPCC-403	3	59	B+	5.9	17.7
MPEC-401/MPEC-402/MPEC-403	3	81	A+	8.1	24.3
MPPC-401	3	49	C	4.9	14.7
MPPC-402	3	78	A+	7.8	23.4
MPPC-403	3	81	A+	8.1	24.3
MPPC-404	3	75	A+	7.5	22.5
	24				174.6

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 subjects 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 M.P.Ed. Degree shall be awarded on the basis of last CGPA (grade) from one to four semester examinations.

15. Grievance Redressed Committee:

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

16. Revision of Syllabi:

- a. Syllabi of every subject should be revised according to the NCTE prescription.
- b. Revised Syllabi of each semester should be implemented in a sequential way.
- c. In subjects, where units/ topics related to governmental 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.
- d. 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.
- e. During every revision, up to twenty percent of the syllabi of each subject 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.
- f. 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

Part A: Theoretical Course						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
Core Course						
MPCC-101	Introduction to Research Process and Statistics in Physical Education & Sports Science	3	3	30	70	100
MPCC-102	Exercise Physiology and Human Performance	3	3	30	70	100
MPCC-103	Yogic Science	3	3	30	70	100
Elective Course (Anyone)						
MPEC-101	Tests, Measurement and Evaluation in Physical Education and Sports Science	3	3	30	70	100
MPEC-102	Sports Technology	3	3	30	70	100
Part-B Practical Course						
MPPC-101	Track and Field (I): Track Events	6	3	30	70	100
MPPC-102	Sports Major – I: Swimming and Gymnastics	6	3	30	70	100
MPPC-103	Self defence activities - Karate/ Judo/ Taekwondo/ Wrestling/ Lathi (Any two)	6	3	30	70	100
MPPC-104	Class Room Teaching Lessons (4+1) one from each theory subject and one for External	6	3	30	70	100
Total		36	24	240	560	800

Semester - II

Part A: Theoretical Course						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
Core Course						
MPCC-201	Applied Research and Statistics in Physical Education & Sports Sciences	3	3	30	70	100
MPCC-202	Kinesiology and Biomechanics in Sports Science	3	3	30	70	100
MPCC-203	Athletic Care and Rehabilitation	3	3	30	70	100
Elective Course (Anyone)						
MPEC-201	Sports Journalism and Mass Media	3	3	30	70	100
MPEC-202	Sports Management and Curriculum Designs in Physical Education	3	3	30	70	100
Part-B Practical Course						
MPPC-201	Track & Field – II: Field Events	6	3	30	70	100
MPPC-202	Sports Major – II: Basketball and Cricket (Fundamental Skills, Individual Tactics, Officiating and Lead-up Games)	6	3	30	70	100
MPPC-203	Yoga: Asanas, Pranayama and Kriyas	6	3	30	70	100
MPPC-204	Teaching Lessons: Sports Major – 4 lessons Track & Field- 4 lessons	6	3	30	70	100
Total		36	24	240	560	800

Semester - III

Part A: Theoretical Course						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
Core Course						
MPCC-301	Scientific Principles of Sports Training	3	3	30	70	100
MPCC-302	Sports Medicine	3	3	30	70	100
MPCC-303	Health Education and Sports Nutrition	3	3	30	70	100
Elective Course (Anyone)						
MPEC-301	Sports Engineering and Technology	3	3	30	70	100
MPEC-302	Physical Fitness and Wellness	3	3	30	70	100
Part-B Practical Course						
MPPC-301	Sports Major – III: Football and One Racket Game (Fundamental Skills, Individual Tactics, Officiating and Lead-up Games)	6	3	30	70	100
MPPC-302	Sports Major – IV: Volleyball and Handball (Fundamental Skills, Individual Tactics, Officiating and Lead-up Games)	6	3	30	70	100
MPPC-303	Specialization in Games and Sports Part -I (One Activity)	6	3	30	70	100
MPPC-304	Internship on a Team Game*/ Project Work on Practical Activities*	6	3	30	70	100
Total		36	24	240	560	800

Semester - IV

Part A: Theoretical Course						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
Core Course						
MPCC-401	Information & Communication Technology (ICT) in Physical Education and Sports	3	3	30	70	100
MPCC-402	Sports Psychology and Sports Sociology	3	3	30	70	100
MPCC-403	Gender Studies in Physical Education and Sports	3	3	30	70	100
Elective Course (Anyone)						
MPEC-401	Value and Environmental Education	3	3	30	70	100
MPEC-402	Education Technology in Physical Education and Sports	3	3	30	70	100
MPEC-403	Dissertation	One has to work with supervisor at least three hours per week		30	70	100
Part-B Practical Course						
MPPC-401	Development of Conditioning Abilities	6	3	30	70	100
MPPC-402	Part –II Specialization in Games and Sports	6	3	30	70	100
MPPC-403	Coaching Lessons on Sports Specialization Five internal practice lessons and one Final Lesson	6	3	30	70	100
MPPC-404	Adventure sports/ Outdoor Camping/ Hiking/ Trekking/ Leadership camp. (to be assessed internally)	6	3			100
Total		36	24	310	490	800
		144	96	1030	2170	3200

Semester-I
Theory Courses
MPCC-101: INTRODUCTION TO RESEARCH PROCESS AND
STATISTICS IN PHYSICAL EDUCATION & SPORTS SCIENCES

UNIT 1 – Introduction to Research

- 1.1 Meaning and definition of research.
- 1.2 Need, nature and scope of research in Physical Education & Sports.
- 1.3 Classification of research- Basic, Action and Applied research.
- 1.4 Location of research problem, criteria for selection of a research problem. Method of collecting data and its salient features.

UNIT 2 – Methods of Research & Experimental Research

- 2.1 Descriptive methods of research – Observation, survey study, case study.
- 2.2 Historical research – Meaning, sources and criticism of historical research: primary data and secondary data.
- 2.3 Experimental Research: Meaning, nature and importance, steps of experimental research.
- 2.4 Scientific dishonesty in research.

UNIT 3 – Introduction to Statistics

- 3.1 Meaning, definition, need and importance of statistics, parametric and non-parametric statistics and concept of Bio-statistics.
- 3.2 Population, sample, sample size, data-types. Constructions of frequency table. Graphical representation- Cumulative frequency Polygon and Curve, Ogive, Pie chart and Scattered diagram.
- 3.3 Measures of Central Tendency -Mean (Arithmetic, Harmonic and Geometric), Median and Mode: meaning, purpose, calculation and advantages.
- 3.4 Measures of Variability and its type (Range, Quartile deviation, Average deviation, Standard deviation): meaning, purpose, calculation and advantages of variability.

UNIT 4 – Probability Distributions and Standard Scale

- 4.1 Meaning of Probability, Normal curve, principle of normal curve– properties of normal curve.
- 4.2 Divergence form normality – Skewness and Kurtosis.
- 4.3 Calculation and advantage of scale: Sigma scale, Z-scale, T- scale
- 4.4 Standard score and standard error.

Practicum: (to be assessed by the internal teacher)

1. Collection of Basic, Applied and Action research titles
2. Drawing sample from a heterogeneous population
3. Data collection on any population-using tally marks followed by preparation of frequency table and representing then with the help of various diagrams on chart paper.
4. Finding the normalcy of scores collected by the students.

REFERENCE

1. Best J. W. (1971). Research in Education, New Jersey; Prentice Hall, Inc.
2. Clarke, David. H. & Clarke, H, Harrison (1984). Research processes in Physical Education, New Jersey; Prentice Hall Inc.

3. Craig Williams and Chris Wragg (2006). *Data Analysis and Research for Sport and Exercise Science*, London Routledge Press
4. Henry E. Garrett, (1981). *Statistics in Psychology and Education*. Vakils, Feiffer and Simons Ltd.
5. Jerry R Thomas & Jack K Nelson (2000). *Research Methods in Physical Activities*; Illinois; Human Kinetics;
6. Kamlesh, M. L. (1999). *Research Methodology in Physical Education and Sports*, New Delhi
7. Kothari C.R. (2012). *Research Methodology Methods and Techniques*, New Delhi, New Age International Publication.
8. Mangal, S. K., (2007). *Statistics in Psychology and Education*, New Delhi, Prentice Hall of India
9. Moorthy A. M., (2010). *Research Processes in Physical Education*, Friend Publication, New Delhi
10. Rothstain, A., (1985). *Research Design and Statistics for Physical Education*, Englewood Cliffs, New Jersey; Prentice Hall, Inc.
11. Subramanian, R, Thirumalai Kumar S., & Arumugam C., (2010). *Research Methods in Health, Physical Education and Sports*, New Delhi; Friends Publication.
12. Verma J.P., (2008). *A Text Book on Sports Statistics*, Gwalior, Venus Publication.
13. Verma J.P., (2010). *Statistics in Psychology*. New Delhi. Tat Mc Graw Hill Education Pvt. Ltd.

MPCC-102: EXERCISE PHYSIOLOGY AND HUMAN PERFORMANCE

UNIT 1 – Skeletal Muscles and Exercise

- 1.1 Macro & micro structure of the skeletal muscle, chemical composition, types of muscle fiber, muscle tone.
- 1.2 Nerve supply to muscle, concept of neuromuscular transmission.
- 1.3 Sliding filament theory of muscle contraction, Bio-chemistry of muscular contraction.
- 1.4 Effect of exercises and training on the muscular system.

UNIT 2 – Cardiovascular System and Exercise

- 2.1 Conduction system of the heart- blood supply to the heart- Stroke volume- Cardiac output.
- 2.2 Blood flow at rest and during exercise – hemodynamic principle.
- 2.3 Heart rate-factors affecting heart rate- regulation of heart rate, cardiac hypertrophy.
- 2.4 Effect of exercises and training on the cardiovascular system. Cardiac diseases- concept and causes.

UNIT 3 – Respiratory System and Exercise

- 3.1 Mechanism of breathing –respiratory muscles, pulmonary- ventilation at rest and during exercise.
- 3.2 Exchange of gases in the lungs –exchange of gases in the tissues- control of Ventilation- Oxygen debt/ EPOC.
- 3.3 VO_2 max: concept, determination and its implication in sports performance.
- 3.4 Effect of exercises and training on the respiratory system.

UNIT 4 – Metabolism and Climate condition

- 4.1 Metabolism- ATP-PC or Phosphagen System-Lactic acid system –anaerobic metabolism- aerobic metabolism, aerobic and anaerobic systems during rest and exercise.
- 4.2 Energy supply at short duration high intensity exercises –high intensity exercise lasting several minutes- long duration exercises.
- 4.3 Measurement of energy cost of an activity.
- 4.4 Variation in temperature and humidity- thermoregulation- sports performance in hot climate, cold climate and high altitude.

Practicum: (to be assessed by the internal teacher)

1. Preparation of models or charts of various systems/mechanism of muscle contraction.
2. Assessment of heart rate (resting and post activity), stroke volume, cardiac-output, VO_2 max (indirect method), vital capacity, respiratory rate (resting and post activity).
3. Measurement of blood pressure, blood glucose, hemoglobin count, oxygen saturation, determination of energy cost during various situations.
4. Assessment of various physiological parameters using laboratory's equipment and apparatuses.

REFERENCES

1. Amrit Kumar, and R, Moses. (1995). Introduction to Exercise Physiology, Madras: Poompugar Pathipagam..
2. Arthur, V., James, S., & Dorothy Luciano, (1998). Human Physiology: The Mechanics of Body Function.
3. Beotra Alka, (2000) Drug Education Handbook on Drug Abuse in Sports: Sports Authority of India Delhi.

4. Clarke, D. H., (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
5. Chatterjee, C. C., (2002), Human Physiology. Kolkata, A. K. Chatterjee, Vol.-I & Vol.-II.
6. David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics.
7. Fox, E. L., and Mathews, D. K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.
8. Fox, Stuart Ira, (2006), Human Physiology. New York, Mc Grow Hill ,
9. Majumder, P., (2009) Physiology of Sports and Exercise. New Central Book Agency (P) Ltd.
10. Rodahl & Kaare Strand, P.O (2008), Text Book of Work Physiology: Physiological Bases of Exercise. McGraw Hill. Series in Health Education and Recreation, New Delhi, McGraw Hill Series.
11. Richard, W. Bowers, (1989). Sports Physiology. WMC: Brown Publishers.
12. Tiwari, Sandhya, (2015). Exercise Physiology, Sports Publication, New Delhi.
13. William, D. McArdle, Katch & Katch, (2006). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams and Wilkins Company.
14. Mishra, S.R., (2012). Physiology of Sports & Exercise. Khel Sahitya Kendra, New Delhi.

MPCC-103: YOGIC SCIENCE

UNIT 1 – Introduction of Yoga

- 1.1 Meaning and definition and misconception of Yoga.
- 1.2 Different schools and styles of yoga
- 1.3 Philosophical aspects of Yoga
- 1.4 Yoga: A mind-body & Complementary Alternative Medicine (CAM).

UNIT 2 – Methods of Yoga

- 2.1 Meaning, types and techniques of Kriya.
- 2.2 Meaning, types and techniques of Asana.
- 2.3 Meaning, types and techniques of Pranayama.
- 2.4 Meaning, types and techniques of Meditation.

UNIT 3 – Effects of Yogic Practices

- 3.1 Effects of Kriya on body and mind.
- 3.2 Effects of Asana on body and mind.
- 3.3 Effects of Pranayama on body and mind.
- 3.4 Effects of Meditation on body and mind.

UNIT 4 – Applied Aspect of Yoga

- 4.1 Yoga for health and wellness
- 4.2 Yoga as therapy for various psycho-somatic diseases.
- 4.3 Yoga for sports performance
- 4.4 Yoga and relaxation

Practicum: (to be assessed by the internal teacher)

1. Preparation of Models/Charts of various Yoga asanas mentioning their benefits.
2. Suggesting various yoga asanas and kriyas of different ailments.
3. Suggesting various asanas for physical and mental relaxation.

REFERENCE

1. George Feuerstein, (1975). Text Book of Yoga. London: Motilal Bansaridas Publishers (P) Ltd. Gore, (1990).
2. Anatomy and Physiology of Yogic Practices. Lonavata: Kanchan Prkashan.
3. Helen Purperhart (2004), The Yoga Adventure for Children. Netherlands: A Hunter House book.
4. Karbelkar N.V. (1993) Patanjali Yogasutra Bhashya (Marathi Edition) Amravati: Hanuman Vyayam Prasarak Mandal.
5. Kuvalyananada Swami & S.L. Vinekar, (1963), Yogic Therapy – Basic Principles and Methods. New Delhi: Govt. of India, Central Health Education and Bureau.
6. Moorthy A.M. & Alagesan. S., (2004) Yoga Therapy. Coimbatore: Teachers Publication House.
7. Swami Kuvalayanda, (1998), Asanas. Lonavala: Kaivalyadhama.
8. Swami Satyananada Sarasvati. (1989), Asana Pranayama Mudra Bandha. Munger: Bihar School of Yoga.
9. Swami Satyananda Saraswathi. (1984), Kundalini and Tantra, Bihar: Yoga Publications Trust.
10. Swami Sivananda, (1971), The Science of Pranayama. Chennai: A Divine Life Society Publication.
11. Thirumalai Kumar. S and Indira.S (2011) Yogain Your Life, Chennai: The Parkar Publication.
12. Tiwari O.P. (1998), Asanas- Why and How. Lonavala: Kaivalyadham.

MPEC-101: TESTS, MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION AND SPORTS SCIENCE (Elective)

UNIT 1– Introduction

- 1.1 Meaning and definition of test, measurement and evaluation.
- 1.2 Need and importance of measurement and evaluation, principles of evaluation, criteria of a Good test.
- 1.3 Define norms, meaning, definition and classification of validity, reliability and objectivity.
- 1.4 Grading in physical education: kinds of grade, basis of grading.

UNIT 2 –Physical Fitness Test and Motor Fitness Tests

- 2.1 Meaning and definition of motor fitness. Test for motor fitness: Indiana Motor Fitness Test (For elementary and high school boys, girls and college men), JCR test, Oregon Motor Fitness Test, Canadian Motor Fitness Test. Muscular Fitness – Kraus Weber Minimum Muscular Fitness Test.
- 2.2 Motor ability test: Barrow Motor Ability Test, Oregon motor fitness test, Carpenter motor ability test, Iowa-Brace motor educability test, Johnson-Metheny motor educability test.
- 2.3 Health related fitness test: AAHPERD Health Related Fitness Battery, Rogers's Physical Fitness Index.
- 2.4 Cardiovascular Efficiency Test: Harvard step test, Cooper 12 minutes run and walk test, Beep Test, Queens college step test

UNIT 3 – Physiological and Anthropometric Test

- 3.1 Aerobic capacity: The Bruce Treadmill test protocol. VO_2 Max (indirect method).
- 3.2 Anaerobic capacity: Margaria- Kalamen test, Wingate anaerobic test.
- 3.3 Method of measuring standing height and sitting height, method of measuring circumference: arm, waist, hip, thigh and skin folds: biceps, triceps, sub-scapular, supra-iliac.
- 3.4 Assessment of body composition, measurement of somatotyping.

UNIT 4 – Skill Tests

- 4.1 Badminton test: Miller Wall Volley test. Basketball test: Johnson Basketball test, Harrison Basketball ability test. Tennis test: Dyer Tennis test.
- 4.2 Football test: Mc-Donald Soccer test. Volleyball test: Russel Lange Volleyball test, Brady Volleyball test.
- 4.3 Hockey test: Friedel Field Hockey test, Harban Singh Hockey test.
- 4.4 Psychological test - Kinesthetic Perception, Reaction ability test, SCAT, achievement motivation.

Practicum: (to be assessed by the internal teacher)

1. Measuring Standing Height and Sitting Height, circumference: Arm, Waist, Hip, Thigh and Skin folds: Biceps, Triceps, Sub-scapular, Supra-iliac.
2. Assessment of BMI, PFI and Body Type and reaction time.
3. Practical knowledge of conducting the various tests mentioned in the syllabus.

REFERENCES

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, John Wiley and Sons, Inc.
5. Jenson, Clayne R., and Cynt Ha, C. Hirst, (1980) Measurement in Physical Education and Athletics, New York, Macmillan Publishing Co. Inc
6. Kansal D.K. (1996), "Test and Measurement in Sports and Physical Education, New Delhi: DVS Publications.
7. Johnson, B. L., & Nelson, J. K., (2012). Practical Measurements for Evaluation in Physical Education. Surjeet Publication, Delhi.
8. Krishnamurthy (2007) Evaluation in Physical Education and Sports, New Delhi; Ajay Verma Publication.
9. Vivian, H. Heyward, (2005). Advance Fitness Assessment and Exercise Prescription, Dallas TX: The Cooper Institute for Aerobics Research.

MPEC-102 SPORTS TECHNOLOGY (Elective)

UNIT I – Sports Technology

- 1.1 Meaning, definition, purpose, advantages and applications,
- 1.2 General Principles and purpose of instrumentation in sports,
- 1.3 Workflow of instrumentation and business aspects, Technological impacts on sports.
- 1.4 Adhesives- Nano glue, Nano molding technology, Nano turf. Footwear production, Factors and application in sports, constraints.

UNIT II – Surfaces of Playfields

- 2.1 Modern surfaces for playfields, construction and installation of sports surfaces.
- 2.2 Types of materials – synthetic, wood, polyurethane. Artificial turf.
- 2.3 Modern technology in the construction of indoor and outdoor facilities.
- 2.4 Technology in manufacture of modern play equipment.

UNIT III – Modern Equipment

- 3.1 Playing Equipment: Balls: Types, materials and advantages, bat/stick/ racquets: types, materials and advantages.
- 3.2 Clothing and shoes: Types, materials and advantages.
- 3.3 Measuring equipment: Throwing and jumping events.
- 3.4 Protective equipment: Types, materials and advantages. Sports equipment with nano technology, advantages.

UNIT IV – Training Gadgets

- 4.1 Basketball: Ball Feeder, Cricket: Bowling machine, Tennis: Serving machine, Volleyball: serving Machine.
- 4.2 Lighting Facilities: Method of erecting flood Light and measuring luminous.
- 4.3 Video Coverage: Types, size, capacity, place and position of camera in live coverage of sporting events.
- 4.4 Use of computer and software in match analysis and coaching.

Note: Students will be encouraged to design and manufacture improvised sports testing equipment in the laboratory/workshop and visit sports technology factory/sports goods manufacturers.

Practicum: (to be assessed by the internal teacher)

1. Students will prepare report on various types of modern play fields, facilities, gadgets etc.
2. Design and manufacture improvised sports equipment/ sports goods.

REFERENCE

1. Charles J.A. Crane, F.A.A. and Furness, J.A.G. (1987) “Selection of Engineering Materials”
2. UK: Butterworth Heiremann. Finn, R.A. and Trojan P.K. (1999) “Engineering Materials and their Applications” UK: Jaico Publisher.
3. John Mongilo, (2001), “Nano Technology 101 “New York: Green wood publishing group.
4. Walia, J. S. (1992) Principles and Methods of Education (Paul Publishers, Jalandhar).
5. Kochar, S. K. (1982) Methods and Techniques of teaching (New Delhi, Jalandhar, Sterling Publishers Pvt. Ltd.
6. Kozman, Cassidy and Jackson. (1952) Methods in Physical Education (W.B. Saunders Company, Philadelphia and London.

Semester-II
Theory Courses
MPCC-201: RESEARCH METHOD AND APPLIED STATISTICS IN
PHYSICAL EDUCATION AND SPORTS

UNIT 1–Sampling and Research Design

- 1.1 Population, Sampling and its importance in the field of research.
- 1.2 Probability and non-probability sampling: Random sampling, systematic sampling, cluster sampling, stratified sampling, area & multistage sampling, purposive, judgment, quota sampling.
- 1.3 Meaning of Variable, types of variable, parameter and variable with context to research study.
- 1.4 Research Design-meaning, needs, importance and methods of research designs.

UNIT 2 – Research Proposal and Report

- 2.1 Research proposal: meaning, significance, method of writing research proposal.
- 2.2 Review of Related Literature- importance and types of review.
- 2.3 Hypothesis: meaning characteristics, types, and testing of hypothesis.
- 2.4 Method of writing Thesis/Dissertation/Research report: - Format, writing style, common faults and characteristics of research report. Style of writing and acknowledging references foot notes and bibliography.

UNIT 3 – Statistics to establish Relationship, Preparation of Norms & Statistical Packages

- 3.1 Correlation: Meaning, types and magnitude, Co-efficient of correlation, calculation of correlation- Product moment and Rank difference.
- 3.2 Concept and calculation of Partial and Multiple correlation and concept of Regression analysis
- 3.3 Construction of Norms- Decile scale and Percentile scale
- 3.4 Statistical packages.

UNIT 4 – Inferential Statistics/ Significance of Mean

- 4.1 Type-I & Type II error, Level of significance and Degree of freedom, one tailed and two tailed tests.
- 4.2 Testing of hypothesis- Large and small sample - Dependent and independence “t”- test with interpretation of the results.
- 4.3 Analysis of Variance- meaning and calculation of One way and two-way ANOVA. Concept of ANCOVA.
- 4.4 Non-parametric test: Computation of Chi Square test and concept of Man Whitney Test.

Practicum: (to be assessed by the internal teacher)

1. Collection of at least 10 critical and 10 allied reviews of interested areas.
2. Writing a research topic and drawing hypothesis
3. Writing research proposal of minimum 3-5 pages.
4. Data entry in Excel, SPSS and further calculation of Inferential statistics

REFERENCE

1. Best J. W (1971). Research in Education, New Jersey; Prentice Hall, Inc.
2. Clark, D. H. (1999). Research Problem in Physical Education 2nd edition, Eaglewood Cliffs, Prentice Hall, Inc.
3. Henry E. Garrett. (1981). Statistics in Psychology and Education. Vakils, Feffer and Simons Ltd.
4. Jerry R Thomas & Jack K Nelson (2000). Research Methods in Physical Activities; Illinois; Human Kinetics;
5. Kamlesh, M. L., (1999). Research Methodology in Physical Education and Sports, New Delhi
6. Kothari C.R., (2012). Research Methodology Methods and Techniques, New Delhi, New Age International Publication
7. Lipman, Henry, (2001). Sports Research, New Delhi, Friends Publication
8. Mangal, S. K., (2007). Statistics in Psychology and Education, New Delhi, Prentice Hall of India
9. Rothstain A (1985). Research Design and Statistics for Physical Education, Englewood Cliffs: Prentice Hall, Inc.
10. Varma, J. P., (2008). A text book on sports statistics. Venus Publication, Gwalior.
11. Varma, J. P., (2012). Statistics in Psychology. Tata McGraw Hill Education Pvt. Ltd. Delhi.

MPCC-202: KINESIOLOGY AND BIOMECHANICS IN SPORTS SCIENCE

UNIT 1 – Introduction

- 1.1 Meaning, nature, role and scope of kinesiology and sports biomechanics.
- 1.2 Historical development of sports biomechanics.
- 1.3 Statics, Dynamics: Kinematics, kinetics. Stability, equilibrium, work, power and energy.
- 1.4 Centre of gravity -Line of Gravity, Axis and Plane, Vectors and Scalars.

UNIT 2 – Kinesiological Aspects of Human Movement

- 2.1 Concept of Origin, insertion and action of muscles.
- 2.2 Origin and Insertion: Muscles of upper extremities- Pectoralis major and minor, Deltoid, Biceps, Triceps (anterior and posterior), Trapezius, Serratus, Abdominis.
- 2.3 Origin and Insertion: Muscles of lower extremities- Sartorius, Rectus Femoris, Quadriceps, Hamstring, Gastrocnemius.
- 2.4 Action of muscles: Upper and Lower Extremities.

UNIT 3 – Mechanical Concept

- 3.1 Motion & Force: Meaning, definition and types.
- 3.2 Lever: Meaning, definition, types, principles and body levers.
- 3.3 Projectile: concept, types and factors influencing projectile motion. Equations and principles of projectile motion.
- 3.4 Pressure, Friction & Fluid resistance: Water Resistance, air resistance-Aerodynamics.

UNIT 4 – Movement Analysis

- 4.1 Analysis of Movement: Types of analysis: Kinesiological, Biomechanical.
- 4.2 Methods of analysis – Qualitative, quantitative.
- 4.3 Analysis of fundamental movements-Walking & running.
- 4.4 Analysis of games and sports techniques-throwing (putting the shot) & jumping (horizontal and vertical).

Practicum: (to be assessed by the internal teacher)

1. Determination of average and instantaneous velocity.
2. Drawing (S-T) curve and (V-T) curve.
3. Determination of co-efficient of elasticity of different balls.
4. Determination of C.G. by reaction board/ mass centre method.
5. Determination of work done for a vertical Jump.
6. Scientific filming of a Movement.
7. Drawing a kinegram of a movement.
8. Analysis of distance and time of a movement.
9. Measurement of angle using goniometer.
10. Measurement of centrifugal force.

REFERENCE:

1. Hoffman, S. J. (2005). Introduction to Kinesiology (Human Kinesiology publication In.2005.
2. Thomas. (2001). Manual of Structural Kinesiology, New York: Me Graw Hill.
3. Uppal, A. K., Lawrence and Mamta, M. P., (2004). Kinesiology, New Delhi, Friends Publication.
4. Uppal, A (2004), Kinesiology in Physical Education and Exercise Science, Delhi Friends publications.
5. Williams, M. (1982) Biomechanics of Human Motion, Philadelphia; Saunders Co.
6. Hay, J. G. (1970). The Biomechanics of Sports Techniques. Englewood Cliffs, N.J.: Prentice Hall, Inc.
7. Simonian, C. (1911). Fundamentals of Sport Biomechanics. Englewood Cliffs, N.J.: Prentice Hall Inc.
8. Hall, J. S. (1991). Basic Biomechanics. The McGraw-Hill Companies, Inc. First Edition 1991, Brown and Benchmark Publishers.
9. Knudson, D. (2007). Fundamentals of Biomechanics. Chico, USA: Springer Publication.
10. Norton, Kevin & Olds, Tim, ((2006), Anthropometrica; A Textbook of Body Measurement for Sports and Health Education, New Delhi, CBS Publishers and Distributers
11. Bell, G.E, Grice, T. & Dowell, L.J.), 2013). Sport Biomechanics, Boston, American Press.

MPCC-203: ATHLETIC CARE AND REHABILITATION

UNIT 1- Introduction to Sports Injuries

- 1.1 Meaning and nature of sports injuries
- 1.2 Types of sports injuries - chronic injuries and acute injuries.
- 1.3 Causes and precautions against sports injuries-Wounds, sprain, strain, muscle pull, dislocation, fracture.
- 1.4 Conditions that disqualify an athlete for specific athletic participation.

UNIT 2 – Basic Rehabilitation

- 2.1 Meaning, objectives, importance and guiding principles of rehabilitation
- 2.2 Rehabilitation- steps, types and techniques: Proprioceptive Neuromuscular Facilitation (PNF), Isotonic, Isometric, Isokinetic stretching.
- 2.3 Rehabilitation exercises: passive, active, assisted and resisted, Continuous Passive Movement (CPM).
- 2.4 Principles, precaution, indication & contraindication of strapping/taping and Kinesiology tape.

UNIT 3 – Corrective Physical Education

- 3.1 Definition and objective of corrective physical education.
- 3.2 Standard of standing posture, value of good posture.
- 3.3 Sign and symptom, causes of deviation and treatment of various postural deformities: Kyphosis, Lordosis, Scoliosis, Round Shoulder, Knock Knee, Bow Leg, Flat Foot,
- 3.4 Posture Test: Cureton - Gunby Conformateur, New York state posture rating test, Plumblin method, Goniometry, Radiographic method, Inclinator.

UNIT 4 – Therapeutic Modalities

- 4.1 Meaning, need importance of physiotherapy.
- 4.2 Guiding principles of therapeutic modalities.
- 4.3 Different types of therapeutic modalities (Cryotherapy, Superficial thermotherapy, Penetrating thermotherapy, Electrical stimulation).
- 4.4 Massage: Principles and classification of massage, physiological, chemical and psychological effects of massage.

Practicum: (to be assessed by the internal teacher)

1. Strapping/Taping, Bandaging process.
2. Corrective exercises of different postural deformities.
3. Practical application of different massage manipulations.
4. Application of different therapeutic modalities

REFERENCES

1. Doherty. J. Meno. Wetb, Moder, D., (2000). Track & Field, Englewood Cliffs, Prentice Hal Inc.
2. Lacey, M. V. (1951). Massage and Medical Gymnastics, London: J & A Churchill Ltd.
3. McOoyand Young (1954). Tests and Measurement, New York: Appleton Century.
4. Naro, C. L. (1967). Manual of Massage and, Movement, London: Fabre and Fabre Ltd.

5. Rathbome, J. I. (1965). *Corrective Physical education*, London: W.B. Saunders & Co.
6. Stafford and Kelly, (1968). *Preventive and Corrective Physical Education*, New York
7. V.D. Bindal (2010). *Corrective Physical Education, Therapeutic Exercise and Rehabilitation*. Agra. Associated Publication House.

MPEC-201: SPORTS JOURNALISM AND MASS MEDIA (Elective)

UNIT 1 – Introduction

- 1.1 Meaning and definition of sports journalism, history, objectives and obligations of sports journalism.
- 1.2 Reporting of sports events- traditional and open source reporting.
- 1.3 Concept of sports bulletin: structure of sports bulletin – compiling a bulletin – types of bulletin.
- 1.4 Role of journalism in the field of physical education – general news reporting and sports reporting.

UNIT 2 – Mass Media

- 2.1 Concept, characteristics and function of mass media.
- 2.2 Commentary – running commentary on the radio – sports expert’s comments.
- 2.3 Role of advertisement in journalism.
- 2.4 Sports photography: equipment- editing – publishing.

UNIT 3 – Report Writing on Sports

- 3.1 Brief review of Olympic Games, Asian Games, Commonwealth Games, World Cup, National Games and Indian Traditional Games.
- 3.2 Preparing report of an annual sports meet for publication in newspaper.
- 3.3 Methods of editing a sports report, critical appraisal of reported news.
- 3.4 Sports ethics and sponsorship.

UNIT 4 – Journalism

- 4.1 Sports organization and sports journalism.
- 4.2 Organization of press meet, press release.
- 4.3 Interview with elite player and coach.
- 4.4 Practical assignments to observe the matches and prepare report and news of the same.

Practicum: (to be assessed by the internal teacher)

1. Preparing report of any Sports event for wall publication and departmental magazine.
2. Preparing press release of Annual Sports Meet/ Intramural competition/ University competitions.
3. Interview of Players and Coaches.
4. Critically analyze any new reporting.

REFERENCE

1. Ahiya B. N., (1988). Theory and Practice of Journalism: Set to Indian context Ed3. Delhi: Surjeet Publications
2. Surjeet Publications
3. Ahiya B. N. Chobra, S. S. A., (1990). Concise Course in Reporting. New Delhi: Surjeet Publication
4. Publication
5. Bhatt S.C. (1993). Broadcast Journalism Basic Principles. New Delhi. Haran and Publication
6. Kannan K (2009). Soft Skills, Madurai: Madurai: Yadav College Publication

7. Varma A.K. (1993). Journalism in India from Earliest Times to the Present Period. Sterling publication Pvt. Ltd.
8. Zumoff, Mark and Negin, Max. (2015). Total Sports Casting Performance, Production and Career Development, Burlington, Focal Press

MPEC-202: SPORTS MANAGEMENT AND CURRICULUM DESIGN IN PHYSICAL EDUCATION (Elective)

UNIT 1 – Introduction to Sports Management

- 1.1 Concept of management and sports management-early and modern concept.
- 1.2 Principles and functions of sports management.
- 1.3 Objectives of personnel management, role of personnel manager in an organization, personnel recruitment and selection.
- 1.4 Programme development, factors of programme development, importance and steps in programme development, player bidding in professional sports.

UNIT 2 – Sports Sponsorship and Sports Economics

- 2.1 Definition of sponsorship, process and objectives of sponsorship.
- 2.2 Structure of sponsorship, categories of sponsorship, role of intermediaries, sponsorship proposal.
- 2.3 Basic understanding of sports economics, micro & macro-economic analysis of Sports.
- 2.4 Basic understanding of sports finance, preparation of budget.

UNIT 3 – Competitive Sports and Public Relation

- 3.1 Concept of competitive sports, management guidelines for school, college and university sports program.
- 3.2 Guidelines for selection of equipment and supplies, guidelines for checking, storing, issuing, care and maintenance of equipment and supplies.
- 3.3 Principles of public relation programme, planning the public relation programme. sports event management.
- 3.4 Public relation in school and communities, public relation and media.

UNIT 4 – Curriculum

- 4.1 Meaning, definition and elements of curriculum, importance of co-curricular activities in curricula.
- 4.2 Principles of curriculum construction: students centered, activity centered, community centered.
- 4.3 Theories of curriculum development.
- 4.4 Factors affecting curriculum and evaluation of curriculum.

Practicum: (to be assessed by the internal teacher)

1. Budget preparation of College/School/Sports Competition.
2. Preparation of Bidding with institute's players.
3. Writing report on Sponsorships in Sports events.
4. Preparation of a model curriculum of a school.

REFERENCE:

1. Aggarwal, J. C., (1990). Curriculum Reform in India – World overviews, Doaba World Education Series – 3 Delhi: Doaba House, Book seller and Publisher.

2. Arora, G.L. (1984): Reflections on Curriculum, New Delhi: NCERT. 2 years M.P.Ed Curriculum 27
3. Bonnie, L. (1991). The Management of Sports. St. Louis: Mosby Publishing Company, Park House.
4. Bucher A. Charles, (1993) Management of Physical Education and Sports (10th ed.,) St. Louis: Mosby Publishing Company.
5. Carl, E, Willgoose (1982. Curriculum in Physical Education, London: Prentice Hall.
6. Chakraborty & Samiran. (1998). Sports Management. New Delhi: Sports Publication.
7. Charles, A, Bucher & March, L, Krotee (1993). Management of Physical Education and Sports. St. Louis: Mosby Publishing Company.
8. John, E, Nixon & Ann, E, Jewett. (1964). Physical Education Curriculum, New York: The Ronald Press Company.
9. NCERT (2000). National Curriculum Framework for School Education, New Delhi: NCERT.
10. Williams, J. F. (2003). Principles of Physical Education. Meerut: College Book House.
11. Yadvinder Singh. Sports Management, New Delhi: Lakshay Publication.
12. Willgoose, Carl E, (2008). The Curriculum in Physical Education, Englewood Cliffs, N.J., Prentice Hall, INC.
13. Mishra,S.R. Ghosh, B. Das,S.K. (2021)An introduction to Sports Management and Curriculum Design in Physical Education. Friend Publication (India), New Delhi

Semester-III
Theory Courses
MPCC-301: SCIENTIFIC PRINCIPLES OF SPORTS TRAINING

UNIT 1 – Introduction to Sports Training

- 1.1 Meaning and definition of sports training and sports coaching.
- 1.2 Aims and characteristics of sports training.
- 1.3 Principles of sports training.
- 1.4 Philosophy of sports training and coaching.

UNIT 2 – Training Load and Adaptation

- 2.1 Meaning, definition of training load.
- 2.2 Components, types & principles of training load.
- 2.3 Training load and adaptation process, concept of super compensation.
- 2.4 Concept of overload, causes, symptoms and remedial measures of overload. Phases of recovery and means of recovery.

UNIT 3 – Components of Motor Fitness and Training Method

- 3.1 Strength: Meaning and forms of strength, factors determining strength, methods of improving strength- Weight training, Isometric, Isotonic, Circuit training, Plyometric Training.
- 3.2 Speed: Meaning and forms of speed, factors determining speed. methods to improve speed- Repetition method, downhill run, parachute running, wind sprints (In's and Out's method) pace runs and differential paces.
- 3.3 Endurance: Meaning and forms of endurance, factors determining endurance, methods to improve endurance- Continuous method, Interval method, Repetition method, Cross country, Fartlek Training, Up-hill training.
- 3.4 Coordinative Abilities and Flexibility: Meaning and forms. Factors determining coordinative abilities and flexibility (Sensory Method, different types of Stretching).

UNIT 4 – Periodization, Planning and Tactical Training

- 4.1 Periodization- Meaning and types of Periodization, different phases of Periodization and their contents.
- 4.2 Training plan- Meaning, principles and types of training (Micro, Meso and Macro), short term and long-term training plan.
- 4.3 Tactical Training- Meaning of tactics and strategy, difference between tactics and strategy, different types of tactics (individual and team tactics), training through competition- importance of competition as method of training.
- 4.4 Psychological preparation during training phase. Types of doping and their bad effects.

Practicum: (to be assessed by the internal teacher)

1. Preparation of training schedules of Fartlek, continuous, interval training.
2. Preparing training plan of athletes.
3. Preparation of training schedule for the development of specific motor abilities.
4. Critical evaluating the tactics/strategy of the coaches of various matches.

REFERENCES:

1. Beotra Alka, (2000). Drug Education Handbook on Drug Abuse in Sports. Delhi: Sports Authority of India.
2. Bunn, J.N. (1998). Scientific Principles of Coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.
3. Cart, E. Klafs & Daniel, D. Arnheim, (1999). Modern Principles of Athletic Training St. Louis C. V. Murphy Company
4. Daniel, D. Arnheim, (1991). Principles of Athletic Training, St. Luis, Mosby Year Book
5. Gary, T. Moran (1997). Cross Training for Sports, Canada: Human Kinetics
6. Hardayal Singh (1991). Science of Sports Training, New Delhi, DVS Publications
7. Jensen, C.R. & Fisher A.G. (2000). Scientific Basic of Athletic Conditioning, Philadelphia
8. Sidhu, L.S., et al (1987). Sports Sciences: Health, Fitness and Performance, Patiala: IASSPE Publication.
9. Sidhu, L.S. et al (1988). Trends in Sports Sciences: Health, Fitness and Performance, Patiala: IASSPE Publication
10. Doherty. J. Meno. Wetb, Moder D., (2000). Track & Field, Englewood Cliffs, Prentice Hal Inc.

MPCC-302: SPORTS MEDICINE

UNIT 1 – Introduction

- 1.1 Meaning, definition and importance of sports medicine.
- 1.2 Historical development of sports medicine as a discipline.
- 1.3 Sports medicine as a profession.
- 1.4 Sports medicine as an inter-disciplinary subject: physiological, psychological and sociological aspect.

UNIT 2 – Ergogenic Aids & Doping

- 2.1 Ergogenic aid- Androstenedione, Beta Blocker, Choline, Creatine, Narcotics, Stimulants, Amphetamines, Caffeine, Ephedrine, human growth hormone on sports performance.
- 2.2 Drugs in sports: use, misuse and abuse in sports.
- 2.3 Doping agents: classification, drugs banned by WADA, dope test.
- 2.4 Effects and adverse effects of doping agents and guidelines of doping control.

UNIT 3 – Head and Spine Injuries and Management

- 3.1 Head, neck and spine injuries, causes, symptom, degrees of injury.
- 3.2 Prevention of injuries of head, neck and spine.
- 3.3 Exercises and injury management: flexion, compression, hyper extension, rotation, spinal range of motion and free hand exercises.
- 3.4 Management of injuries of head, neck and spine.

UNIT 4 – Upper and Lower Extremity Injuries and Management

- 4.1 Causes and symptoms of various injuries of upper and lower extremities.
- 4.2 Prevention of injuries: supporting and adding techniques and equipment for lower and upper extremities.
- 4.3 Exercise for injuries management: breathing exercises, relaxation techniques, free hand exercises, stretching and strengthening exercise of various parts of upper and lower extremities.
- 4.4 Treatment of common upper and lower extremity's injuries: Sprain, Strain, Dislocation, Fracture and Contusion.

Practicum: (to be assessed by the internal teacher)

1. Stretching and strengthening exercise of various parts of the body.
2. Breathing exercises, relaxation techniques.
3. Therapeutic Exercises- Flexion, compression, hyperextension, rotation, spinal range of motion and free hand exercises.
4. Treatment of common injuries - Sprain, Strain, Dislocation, Fracture and Wounds.

REFERENCES

1. Christopher M. Norris. (1993). Sports Injuries Diagnosis and Management for Physiotherapists. East Ki bride: Thomson Lithe Ltd.

2. David R. Mottram, (1996). *Drugs in Sport*, School of Pharmacy, Liverpool: John Moore University
3. James, A. Gould & George J. Davies. (1985). *Physical Therapy*. Toronto: C.V. Mosby Company.
4. Morris B. Million (1984). *Sports Injuries and Athletic Problem*. New Delhi: Surjeet Publication.
5. Pandey P. K., (1998). *Sports Medicine*. New Delhi: Khel Sahitya Kendra
6. *The Encyclopedia of Sports Medicine*. (1998). *The Olympic Book of Sports Medicine*, Australia: Tittel Blackwell Scientific publications.
7. Roy, Steven and Irvin Richard (1983). *Sports Medicine Prevention, Evaluation, Management and Rehabilitation*, New Jersey, Prentice Hall, INC., Englewood Cliffs
8. Bindal, V. D. (2010). *Corrective Physical Education, Therapeutic Exercise & Rehabilitation*, New Delhi, Associated Publishing House.

MPCC-303 HEALTH EDUCATION AND SPORTS NUTRITION

UNIT 1 – Health Education

- 1.1 Concept, dimensions, spectrum and determinants of health.
- 1.2 Definition of health and health education, principles of health education.
- 1.3 Aims and objectives of Health and Health education, Role of Health Education in school.
- 1.4 Health Service, Health Instruction and health Supervision.

UNIT 2 – Health Communication

- 2.1 Practice of Health Education.
- 2.2 Communication process in Health Education. Types of Communication in Health Education.
- 2.3 Function of Health Communication.
- 2.4 Barriers of Communication.

UNIT 3 – Health Problems in India

- 3.1 Communicable disease – Air borne – Measles, Tuberculosis; Water borne – Typhoid, Hepatitis; Vector borne – Dengue, Malaria, plague; Fomite borne – Dysentery, Hook worm; Sexual Transmitted Disease (STD) - Aids
- 3.2 Non-communicable diseases-Obesity, Malnutrition, Cardio vascular diseases and Diabetes
- 3.3 Population – Causes effects on health and their remedies; Population explosion and its impact on society
- 3.4 Problems of healthful school and community environment

UNIT 4 – Introduction to Sports Nutrition

- 4.1 Meaning and definition of sports nutrition. Role of sports nutrition in sports.
- 4.2 Macro –nutrients; their role in healthy living and sports.
- 4.3 Micro- nutrients; their role in healthy living and sports.
- 4.4 Role of diet and exercise in weight management.

Practicum: (to be assessed by the internal teacher)

1. Calculation of BMI and preparing of BMI chart of any section of the institution.
2. Preparation of diet chart of athletes and weight management.
3. Preparing a survey report on school health service provided in nearby school
4. Communicable disease- poster presentation

REFERENCES

1. Bucher, Charles A. "Administration of Health and Physical Education Programme".
2. Delbert, Oberteuffer, et. al." The School Health Education".
3. Ghosh, B.N. "Treaties of Hygiene and Public Health".
4. Hanlon, John J. "Principles of Public Health Administration" 2003.
5. Turner, C. E. "The School Health and Health Education".
6. Moss, et. al. "Health Education" (National Education Association of U.T.A.)
7. Nemir A. "The School Health Education" (Harber and Brothers, New York).
8. Nutrition Encyclopedia, edited by Delores C.S. James, The Gale Group, Inc.

9. Boyd-Eaton S. et al (1989) The Stone Age Health Programme: Diet and Exercise as
10. Nature Intended. Angus and Robertson.
11. Terras S. (1994) Stress, How Your Diet Can Help: The Practical Guide to Positive Health Using Diet, Vitamins, Minerals, Herbs and Amino Acids, Thoron.
12. Park, J. E. and Park, K., (2016), Textbook of preventive and Social Medicine, Jabalpur, Banarsidas Bhanot publisher.

MPEC-301: SPORTS ENGINEERING AND TECHNOLOGY (Elective)

UNIT 1 – Introduction

- 1.1 Meaning of sports engineering.
- 1.2 Human motion detection and recording, human performance assessment.
- 1.3 Equipment and facility designing.
- 1.4 Sports related instrumentation and measurement (Fitness gadgets and software/applications).

UNIT 2 - Mechanics of Engineering Materials

- 2.1 Concepts of internal force, axial force, shear force, bending movement, torsion, energy expenditure, strain energy.
- 2.2 Method to find displacement of structure.
- 2.3 Biomechanics of daily and common activities –Gait, Posture, body levers, Ergonomics.
- 2.4 Mechanical principles in movements such as lifting, walking, running, throwing, jumping, pulling, pushing etc.

UNIT 3- Sports Dynamics

- 3.1 Introduction to dynamics.
- 3.2 Kinematics of particles – rectilinear plane and curvilinear motion coordinate system.
- 3.3 Kinetics of particles – Newton's laws of motion.
- 3.4 Work, energy, impulse and momentum.

UNIT 4 – Infrastructural Development, Maintenance and life cycle costing

- 4.1 Sports Infrastructure: Gymnasium, pavilion, swimming pool, indoor stadium, out-door stadium, Play Park, academic block, administrative block, research block, library, sports hostel, etc.
- 4.2 Requirements: Air ventilation, day light, lighting arrangement, galleries, store rooms, office, toilet blocks (M/F), drinking water, sewage and waste water disposal system, changing rooms (m/f), sound system (echo-free), internal arrangement according to need and nature of performed activity, corridors and gates for free movement of people, emergency provisions of lighting, fire and exits, eco-friendly outer surrounding. Maintenance staff, financial consideration.
- 4.3 Building process and maintenance phase: design phase (including brief documentation), construction phase functional (occupational) life, Re-evaluation, refurbish, demolish. Maintenance policy, preventive maintenance, corrective maintenance, record and register for maintenance.
- 4.4 Facility life cycle costing: Basics of theoretical analysis of cost, total life cost concepts, maintenance costs, energy cost, capital cost and taxation.

Practicum: (to be assessed by the internal teacher)

1. Mechanical analysis of various movements- lifting, walking, running, throwing, jumping.
2. Analysis of body lever during various activities.
3. Visit to any stadium/gymnasium and submitting report on infrastructure and facilities.

REFERENCE

1. Franz, K. F. et. al., Editor, Routledge Handbook of Sports Technology and Engineering (Routledge, 2013)
2. Steve Hake, Editor, The Engineering of Sport (CRC Press, 1996)
3. Franz K. F., et. al., Editor, The Impact of Technology on Sports II (CRC Press, 2007)
4. Helge N., Sports Aerodynamics (Springer Science & Business Media, 2009)
5. Youlin Hong, Editor, Routledge Handbook of Ergonomics in Sport and Exercise (Routledge, 2013)
6. Jenkins M., Editor Materials in Sports Equipment, Volume I (Elsevier, 2003) Colin White, Projectile Dynamics in Sport: Principles and Applications.

MPEC-302: PHYSICAL FITNESS AND WELLNESS (Elective)

UNIT 1 – Introduction

- 1.1 Meaning and definition of physical fitness and wellness, importance of wellness in attaining positive health.
- 1.2 Principles of physical fitness, physiological principles involved in human movement.
- 1.3 Components of physical fitness. Leisure time physical activity and identifying opportunities in the community to participate in those activities.
- 1.4 Current trends in fitness and conditioning, components of total health fitness and the relationship between physical activity and lifelong wellness.

UNIT 2 – Nutrition and aerobic exercise

- 2.1 Nutrients; Food choices, food guide pyramid, food sources, comparison of food values. Weight Management-proper practices to maintain, lose and gain. Eating disorders, proper hydration.
- 2.2 Cardio respiratory endurance training; proper movement forms, i.e., correct stride, arm movements, body alignment; proper warm-up, cool down, and stretching, monitoring heart rates during activity.
- 2.3 Assessment of cardio respiratory fitness and set goals to maintain or improve fitness levels.
- 2.4 Cardio respiratory activities including i.e. power walking, interval training, inclined running, distance running, aerobics and circuits, Fartlek.

UNIT 3 – Anaerobic Exercise

- 3.1 Resistance training for muscular strength and endurance; principles of resistance training,
- 3.2 Safety techniques (spotting, proper body alignment, lifting techniques, spatial, awareness. proper breathing techniques).
- 3.3 Weight training principles and concepts; basic resistance exercises (including free hand exercise, free weight exercise, weight machines, exercise bands and tubing. medicine balls, fit balls, Kettle Exercise)
- 3.4 Advanced techniques of weight training.

UNIT 4 – Flexibility Exercise

- 4.1 Flexibility training, relaxation techniques and core training.
- 4.2 Safety techniques (stretching protocol; breathing and relaxation techniques)
- 4.3 Types of flexibility exercises (i.e. dynamic, static),
- 4.4 Develop basic competency in relaxation and breathing techniques. Pilates, Yoga.

Practicum: (to be assessed by the internal teacher)

1. Construction of leisure time physical activity chart for home makers, professionals, school children and aged.
2. Preparation of food chart of various age groups, pregnant ladies, office goers and aged.
3. Knowledge about safety techniques and exercises for the maintenance of health-related fitness.

REFERENCE

1. David K. Miller & T. Earl Allen, Fitness, A life time commitment, Surjeet Publication Delhi 1989.
2. Difiore Judy, The Complete Guide to the Postnatal Fitness, A & C Black Publishers Ltd. 35 Bedford row, London 1998
3. Dr. A.K. Uppal, Physical Fitness, Friends Publications (India), 1992.
4. Warner W.K. Oeger & Sharon A. Hoeger, Fitness and Wellness, Morton Publishing Company, 1990.
5. Elizabeth & Ken day, Sports Fitness for Women, B.T. Botsford Ltd, London, 1986.
6. Emily R. Foster, Karyn Hartiger & Katherine A. Smith, Fitness Fun, Human Kinetics Publishers 2002.
7. Lawrence, Debbie, Exercise to Music. A & C Black Publishers Ltd. 37, Times Square, London 1999
8. Robert Malt. 90 Days Fitness Plan, D.K. publishing, Inc. 95, Madison Avenue, New York 200

Semester-IV
Theory Courses
MPCC-401: ICT IN PHYSICAL EDUCATION AND SPORTS

UNIT 1 – Fundamentals of Computers

- 1.1 Characteristics, types, functions, advantages & applications of computers.
- 1.2 Hardware of Computer: Input, output & storage devices.
- 1.3 Software of Computer: Concept & types application in Physical Education and Sport.
- 1.4 Concepts, types & functions of computer networks, internet and its applications, web browsers & search engines, legal & ethical issues.

UNIT 2– Communication & Classroom Interaction

- 2.1 Concept, elements, process & types of communication, communication barriers & facilitators of communication and cloud computing.
- 2.2 Communicative skills in English - listening, speaking, reading & writing.
- 2.3 Concept & importance of ICT, need of ICT in education, scope of ICT: Teaching- learning process, publication, evaluation, research and administration.
- 2.4 Challenges in integrating ICT in Physical Education.

UNIT 3 – MS Office Applications

- 3.1 Word: Main features & their uses in Physical Education.
- 3.2 Excel: Main features & their applications in Physical Education.
- 3.3 Power Point: Preparation of slides with multimedia effects.
- 3.4 MS publisher: Newsletter & brochure.

UNIT 4 – ICT Integration in Teaching Learning Process, E-Learning & Web Based Learning

- 4.1 Approaches to integrating ICT in teaching learning process.
- 4.2 Project based learning (PBL), Co- operative learning and collaborative learning.
- 4.3 ICT and constructivism: A pedagogical dimension.
- 4.4 E-Learning, Web based learning, virtual classroom.

Practicum: (to be assessed by the internal teacher)

1. Preparation of word file and saving that in a document.
2. Preparation of Excel file and saving that.
3. Preparation of Power Point with multimedia effect.
4. Collection of Web based learning/preparing a web-based learning.

REFERENCES

1. B. Ram, New Age International Publication, Computer Fundamental, Third Edition-2006
2. Brain under IDG Book. India (p) Ltd., Teach Yourself Office 2000, Fourth Edition- 2001
3. Douglas E. Comer, The Internet Book, Purdue University, West Lafayette in 2005
4. Heidi Steel Low price Edition, Microsoft Office Word 2003- 2004
5. ITL Education Solution Ltd. Introduction to information Technology, Research and Development Wing-2006
6. Sinha, Pradeep K. & Sinha, Priti, Foundations computing BPB Publications -2006.
7. Rebecca Bridges Altman Peach pit Press, Power point for window, 1999
8. Sanjay Saxena, Vikas Publication House, Pvt. Ltd. Microsoft Office for ever one, Second Edition.

MPCC-402: SPORTS PSYCHOLOGY AND SPORTS SOCIOLOGY

UNIT 1 – Introduction

- 1.1 Meaning, definition, history, need and importance of sports psychology. Present Status of sports psychology in India.
- 1.2 Motor learning: Basic considerations in motor learning theories.
- 1.3 motor perception – Factors affecting perception – Perceptual mechanism.
- 1.4 Personality: Meaning, definition, structure – measuring personality traits. Effects of personality on sports performance.

UNIT 2 – Psychological Factors Affecting Sports Performance:

- 2.1 Motivation: Meaning, definition and types, theories of motivation, motivation and sports performance.
- 2.2 Anxiety, Aggression and Stress: Meaning, definition, types, causes of anxiety and stress in relation with sports performance. Aggression and sports performance
- 2.3 Relaxation: Meaning and definition, types and methods of psychological relaxation.
- 2.4 Goal Setting- Meaning and definition, process of goal setting in physical education and sports.

UNIT 3 – Sports Sociology:

- 3.1 Meaning and definition of sports sociology.
- 3.2 Sports as social institutions, sports and socialization. National integration through Sports.
- 3.3 Fans and spectators: Meaning and definition, effects of audience on sports performance. Sports aggression and violence. Sports and politics.
- 3.4 Leadership: Meaning, definition, types. Leadership and sports performance, leadership theories.

UNIT 4 – Social Structure of Sports:

- 4.1 Group: Definition, meaning and types.
- 4.2 Group size, groups on composition, group cohesion, group interaction, group dynamics.
- 4.3 Sports social crisis management – Women in sports: Sports women in our society, participation pattern among women, gender inequalities in sports.
- 4.4 Socio economic status and sports. Current problems in sports and future directions.

Practicum: (to be assessed by the internal teacher)

At least five experiments related to the topics listed in the units above should be conducted by the students in laboratory. (Internal assessment) Psychological tests: Types of psychological test: Instrument based tests: Pass-along test – Tachistoscope – Reaction timer – Finger dexterity board – Depth perception box – Kinesthesiometer board. Questionnaire: Sports achievement motivation, Sports competition anxiety test (SCAT). Psychological Skill Training

REFERENCES

1. B. J. Cratty. Psychology of Contemporary sports Champaign: Human Kinetics publishers,
2. Mangal,S.K.(2000). Educational Psychology, Ludhiana, Prakash brothers,
3. John M. Silva & Roberts. Psychological Foundations of Sport. Champaign: Human Kinetics publishers.
4. Diane Gills, Psychological Dynamics of Sports. Champaign: Human Kinetics publishers.
5. Cox, Sports Psychology. Champaign: Human Kinetics publishers.
6. Richard M. Sumin, “Psychology in Sports, Methods & Application. New Delhi: Surjeet Publication.

MPCC-403 GENDER STUDIES IN PHYSICAL EDUCATION AND SPORTS

UNIT 1 - Introduction

- 1.1 Meaning of gender, transgender and third gender
- 1.2 The role of Physical Education and sports in addressing gender issues:
- 1.3 Women's and girl's health and wellbeing, self-esteem, self-empowerment;
- 1.4 Social inclusion and social integration of women and girls.

UNIT 2 – Gender Issues and Curriculum

- 2.1 Gender identity and gender issues in curriculum and Physical Education
- 2.2 Gender identities and socialization practices in family, schools, other formal and informal institutions,
- 2.3 Physical Education curriculum and the gender question,
- 2.4 Construction of gender in curriculum framework since Independence,

UNIT 3 – Gender Equity

- 3.1 Concept of gender equity, importance, objectives
- 3.2 Attitude of women toward Physical Education and Sports,
- 3.3 Teacher as an agent of change, challenging and transforming gender norms.
- 3.4 Promoting gender equity through Physical Education and Sports:

UNIT 4 – Application and Research of Gender Studies

- 4.1 Claiming space, access to resources, structures and leadership.
- 4.2 Choice of Sports, traditional games and competitions, incentives,
- 4.3 Women in sports and media (print and electronic),
- 4.4 Review of researches on gender studies in Physical Education and Sports.

Practicum: (to be assessed by the internal teacher)

1. Writing report on women empowerment through sports.
2. Writing report on role of IOC on the promotion of gender equality.
3. Knowledge about gender identification by IOC and other sports organizations.
4. Collection of reviews of researches on gender studies in Sports and physical education.

REFERENCES

1. Bandarage, A. (1997). Women Population and Global Crisis: A Political Economic Analysis. London: Zed Books.
2. Maguire, P. (1987). Doing Participatory Research: A Feminist Approach, Amherst, M. A.
3. Boserup, E. (1970). Women's Role in Economic Development. New York St. Martin's Press.
4. Brock-Utne, B. (1985). Educating for peace: A Feminist Perspective, New York.
5. Ruddick, S. (1989). Maternal Thinking: Towards a Politics of Peace, London.
6. Di Stefano, C. (1983). "Masculinity as ideology in political theory: Hobbesian man considered", Women's Studies International Forum, Vol. 6.
7. Elshtain, J. B., (1981). Public man, private woman: woman in social and political thought, Princeton.
8. Grant, R. & Newland, K. (Eds.). (1991). Gender and International Relations. London.
9. Harshman, M., (1995). Women and Development: A Critique. In Marchand, M and Parpart, J. (Eds.). Feminism, Post Modernism, Development. London: Routledge.
10. Viswanathan, Nalini (1997). Women, Gender and Development Reader, London: Zed Publication.
11. Frederic, D (2010). Strength Training Anatomy, Human Kinetics; 1st edition, www.amazon.com
12. Mishra, S.R. Ghosh, B. Das, S.K. (2021) An introduction to Gender Studies in Physical Education and Sports. Friend Publication (India), New Delhi

MPEC-401 VALUE EDUCATION AND ENVIRONMENTAL EDUCATION (Elective)

UNIT 1 – Introduction to Value Education

- 1.1 Values: Meaning, definition and Classification of values. Value education: Need, importance and objectives.
- 1.2 Moral Values: Need and theories of moral values.
- 1.3 Meaning and definition of personal, communal values and religious values.
- 1.4 Consistency: internally consistent, internally inconsistent, judging value system, commitment, commitment to values.

UNIT 2 – Environmental Education

- 2.1 Definition, scope, need and importance of environmental studies.
- 2.2 Concept of environmental education, historical background of environmental education.
- 2.3 Celebration of various days in relation with environment, plastic recycling & prohibition of plastic bag/cover.
- 2.4 Role of school in environmental conservation and sustainable development, pollution free ecosystem.

UNIT 3 – Rural Sanitation and Urban Health

- 3.1 Rural health problems, causes of rural health problems.
- 3.2 Points to be kept in mind for improvement of rural sanitation.
- 3.3 Urban health problems, process of urban health, services of urban area.
- 3.4 Suggested education activity, services on urban, slum area, sanitation at fairs & festivals, mass education.

UNIT 4 – Natural Resources and related environmental issues:

- 4.1 Water resources, food resources and land resources.
- 4.2 Definition, effects and control measures of: Air pollution, water pollution, soil pollution, noise pollution, thermal pollution.
- 4.3 Management of environment, sustainable development of environment.
- 4.4 Govt. policies and role of pollution control board.

Practicum: (to be assessed by the internal teacher)

1. Preparation of models environmental on conservation.
2. Preparing report on rural health problem/ urban health problem/ epidemic etc.
3. Writing report on environmental pollution of a specific area.

REFERENCE

1. Miller T.G. Jr., Environmental Science (Wadsworth Publishing Co.)
2. Odum, E.P. Fundamentals of Ecology (U.S.A.: W.B. Saunders Co.) 1971.
3. Rao, M. N., & Datta, A.K. Waste Water Treatment (Oxford & IBH Publication Co. Pvt. Ltd.) 1987
4. Townsend C. and others, Essentials of Ecology (Black well Science)
5. Heywood, V.H. and Watson V.M., Global biodiversity Assessment (U.K.: Cambridge University Press), 1995.
6. Jadhav, H. and Bhosale, V.M. Environmental Protection and Laws (Delhi: Himalaya Pub. House), 1995.
7. Mc. Kinney, M. L. and Schoel, R. M. Environmental Science System and Solution (Web enhanced Ed.) 1996.
8. Miller T.G. Jr., Environmental Science (Wadsworth Publishing Co.)

MPEC-402: EDUCATION TECHNOLOGY IN PHYSICAL EDUCATION AND SPORTS (Elective)

UNIT 1 – Nature, Scope and Systems Approach to Physical Education and Communication

- 1.1 Educational technology-concept, Nature and Scope. Forms of educational technology: teaching technology, instructional technology.
- 1.2 Usage of educational technology: integrated, complementary, supplementary stand-alone (independent); programmed learning stage.
- 1.3 Systems Approach to Education and its Components: Goal setting, task analysis, content analysis, context analysis and evaluation strategies; instructional strategies and media for instruction.
- 1.4 Effectiveness of communication in instructional system; Communication -Modes, barriers and process of communication.

UNIT 2 – Instructional Design

- 2.1 Instructional Design: Concept, views.
- 2.2 Process and stages of development of Instructional design.
- 2.3 Overview of models of instructional design; Instructional design for competency-based teaching.
- 2.4 Models for development of self learning material.

UNIT 3 – Audio Visual Media

- 3.1 Audio-visual media - meaning, importance and various forms audio/radio: Broadcast and audio recordings.
- 3.2 Script writing, pre-production, post-production process and practices, audio conferencing and interactive radio conference.
- 3.3 Video/educational television: telecast and video recordings strengths and limitations, use of television and CCTV in instruction and Training.
- 3.4 Use of animation films for the development of children's imagination.

UNIT 4 – New Horizons of Educational Technology

- 4.1 Recent innovations in the area of ET interactive video - Hypertext, video-texts, optical fiber technology - laser disk, computer conferencing.
- 4.2 Procedure and organization of Tele-conferencing/Interactive video-experiences of institutions, schools and universities.
- 4.3 Recent experiments in the third world countries and pointers for, India with reference to Physical Education.
- 4.4 Recent trends of research in educational technology and its future with reference to education.

Practicum: (to be assessed by the internal teacher)

1. Construction/preparation of models of instruction
2. Collection/preparation of animation films for the development of children's imagination about particular skill.
3. Collection of various audio-visual teaching modules for the skill development.

REFERENCE

1. Amita Bhardwaj, (1959). 'New Media of Educational Planning'. Swarup of Sons, New Delhi-2003
2. Bhatia and Bhatia, 'The Principles and Methods of Teaching', New Delhi: Doaba House.
3. 'Communication and Education', D. N. Dasgupta, Pointer Publishers
4. 'Education and Communication for development', O. P. Dahama, O. P. Bhatnagar, Oxford Page 68 of 71 IBH Publishing company, New Delhi
5. 'Essentials of Educational Technology', Madan Lal, Anmol Publications
6. K. Sampath, A. Pannirselvam and S. Santhanam. 'Introduction to Educational Technology' (New Delhi: Sterling Publishers Pvt. Ltd.): 1981.

MPEC-403: DISSERTATION

1. The students securing 60% and above theory marks in total in their Ist and IInd semester shall only be permitted to opt for dissertation.
2. A candidate shall have dissertation for M. P. Ed. – IVth Semester as an optional paper and must submit his/her Synopsis and get that approved by the Head of Department on the recommendation of D.R.C. (Departmental Research Committee).
3. A candidate selecting dissertation must submit his/her dissertation not less than one week before the beginning of the IV Semester End Examination.
4. The candidate has to face the Viva-Voce conducted by DRC.

Practical Courses

Course Code	Subject	CIA	End Sem	Total	Credit
	SEM – I				
MPPC 101	<p>Track & Field – I Track Events: Sprint, Middle- & Long-Distance Running Starting techniques: Standing start, crouch start and its variations, proper use of blocks. Arm movement while sprint running and leg striding. Finishing Techniques: Run through, forward lunging, shoulder shrug. Marking, rules and officiating. Relay and Hurdles. Developing essential components like physical and motor fitness, technical and tactical aspects. Relay: Baton Exchange for different distances, Understanding of Relay zones, marking and interpretation of rules and officiating. Hurdles: Fundamental skills-starting, clearance and landing techniques. Types of hurdles, marking and officiating.</p>	30	70	100	3
MPPC 102	<p>Sports Major – I: Swimming and Gymnastics (Fundamental Skills, Officiating). Swimming: Bubbling, floating, gliding, leg action, arm action, breathing technique. Introduction of various strokes: Front crawl, Back crawl, Butterfly, Breast stroke Starting Technique and entry into water, relay & medley relay and life saving skills.</p> <p>Gymnastics: Floor exercise: - Forward roll, backward roll, dive roll, hand stand, cart wheel, round off, front walk over, back walk over, hand stand forward roll, leg split, different dancing steps, back extension roll, front hand spring, back hand spring, front tuck, back tuck, back pike, back lay out, whip back, front pike, front lay out, Table vault (Men and Women): Approach run, Take off from the beat board, Cat vault, Squat vault, Somersault. Men: Parallel bar (mounting, dismounting, shoulder stand, flip, swing etc.), Horizontal bar/Roman rings, Rhythmic gymnastics, Women: Uneven bars, Balance Beam, Rhythmic gymnastics.</p>	30	70	100	3
MPPC 103	Self Defense- Judo, Karate, Taekwondo Wrestling, Lathi etc. Any two (Self-defense will be assessed by the expert in the specific field)	30	70	100	3
MPPC 104	Class room teaching lessons (4+1) one from each theory subject and one for External	30	70	100	3

SEM – II					
MPPC 201	Track & Field – II Field Events: Shot put (Disco Put and Parry O'Brien), Discus (one and half turn) and Javelin Throws (5 stride and 7 stride rhythm), High jump, Long jump and Triple Jump Jumping: High Jump- Approach run, Take off, Bar clearance (Scissor, Straddle Jump, Fosbury Flop), landing Long Jump- Approach run, Take off, Technique (Hitch kick, Hang style), Landing. Triple Jump- Approach run, Take off, technique (Hitch kick, Hang style) and landing.	30	70	100	3
MPPC 202	Sports Major – II: Basketball and Cricket (fundamental skills, advance skills, individual tactics, strategy, various drills, officiating and lead-up games)	30	70	100	3
MPPC 203	Yoga: Asanas (Therapeutic asanas and competitive asanas) Prayanama and Kriyas	30	70	100	3
MPPC 204	Teaching Lessons: Sports Major – 4 Lesson – Three best lessons will be internally evaluated and 1 final lesson will be externally evaluated. Track & Field- 4 Lesson – Three best lessons will be internally evaluated and 1 final lesson will be externally evaluated.	30	70	100	3
SEM – III					
MPPC 301	Sports Major – III: Football and One Racket Game (Fundamental and advance skills, individual tactics, strategy, various drills, officiating and lead-up games)	30	70	100	3
MPPC 302	Sports Major – IV: Volleyball and Handball (Fundamental and advance skills, individual tactics, strategy, various drills, officiating and lead-up games)	30	70	100	3
MPPC 303	Specialization in games & sports-I (Any one): Track & Field, Yoga and Sports major- Football, Volleyball, Basketball, Cricket, Badminton, Hockey. (Separate syllabus)	30	70	100	3
MPPC 304	Internship on a team game*/ Project work on practical activities* (For internship the students will visit various training academies for at least 10 days and will submit the report)	30	70	100	3
SEM – IV					
MPPC 401	Development of conditioning ability Sports specific training: Speed, agility, flexibility, strength, endurance, circuit, Fartlek, Plyometric training. (Students will prepare various training schedules for the development of specific abilities. Assessment by the external will done on the practicability of the training schedule prepared by the students)	30	70	100	3
MPPC 402	Specialization in games & sports-II (Any One): Track & Field, Yoga and Sports Major- Football, Volleyball, Basketball, Cricket, Badminton, Hockey (Separate syllabus).	30	70	100	3
MPPC 403	Coaching lessons on sports specialization: Five internal practice lessons and one final lesson	30	70	100	3
MPPC 404	Adventure sports/ Outdoor Camping/ Hiking/ Trekking/ Leadership camp. (to be assessed internally)			100	3

*Preparation and maintenance of grounds, care of equipment, learn the official procedure of organizing Inter College / University / State Level Competition. Assist in regular Teaching / Training Programme and necessary event management.

Course content are being followed as per NCTE regulation-2014

Table-1: Semester wise distribution of hours per week

<i>Semester</i>	<i>Theory</i>	<i>Practicum</i>	<i>Teaching practice</i>	<i>Total</i>
<i>I</i>	<i>12</i>	<i>18</i>	<i>6</i>	<i>36</i>
<i>II</i>	<i>12</i>	<i>12</i>	<i>12</i>	<i>36</i>
<i>III</i>	<i>12</i>	<i>12</i>	<i>12</i>	<i>36</i>
<i>IV</i>	<i>12</i>	<i>12</i>	<i>12</i>	<i>36</i>
<i>Total</i>	<i>48</i>	<i>54</i>	<i>42</i>	<i>144</i>
<i>Minimum of 36 teaching hours per week is required in five or six days in a week</i>				

Table-2: Number of credits per semester

<i>Semester</i>	<i>Theory</i>	<i>Practicum</i>	<i>Teaching Practice</i>	<i>Total</i>
<i>I</i>	<i>12</i>	<i>09</i>	<i>03</i>	<i>24</i>
<i>II</i>	<i>12</i>	<i>06</i>	<i>06</i>	<i>24</i>
<i>III</i>	<i>12</i>	<i>06</i>	<i>06</i>	<i>24</i>
<i>IV</i>	<i>12</i>	<i>06</i>	<i>06</i>	<i>24</i>
<i>Total</i>	<i>48</i>	<i>27</i>	<i>21</i>	<i>96</i>
<i>Minimum of 36 teaching hours per week is required in five or six days in a week</i>				