

UNIVERSITY OF RAJASTHAN
JAIPUR
SYLLABUS

Faculty of Education

M.P.Ed. (Two Year)

(Semester Scheme)

I & II Semester	2021-2022
III & IV Semester	2022-2023

Prof. J. Jain
Vice-Chancellor (Acad.)
University of Rajasthan
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GUIDELINES OF REGULATIONS AND MODEL SYLLABUS STRUCTURE
FOR TWO YEARS M. P. Ed.
PROGRAMME (FOUR SEMESTERS)(CBCS)

Important Note:

- 1. If the University or affiliating body is having the choice based credit system (CBCS) as approved and circulated by the UGC, the credit hours given in the following regulation framework need to be considered along with the hours of teaching mentioned for each paper/ activity/ course.
- 2. If the University or affiliating bodies have yet to adopt CBCS, only the hours of teaching mentioned for each paper/ activity/ course will be considered, the credit in teaching hours may be ignored.

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.

R.M.P.Ed.1.Intake, Eligibility and Admission Procedure:

The Intake, Eligibility and Admission Procedure is as per the NCTE norms and standards.

R. M.P.Ed. 2. Duration:

The M.P.Ed programme is of a 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.

R. M.P.Ed. 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 of it in the light of liberalisation and globalization in higher education.

R. M.P.Ed. 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

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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.

R. M.P.Ed.5. Courses of Instruction:

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
 - Internship

R. M.P.Ed.6. Semesters:

An academic year is divided into two semesters. Each semester will consist of 17-20 weeks of academic work equivalent to 100 actual teaching days. The odd semester may be scheduled from May/June to November/December and even semester from November / December to May/June. The institution shall work for a minimum of 36 working hours in a week (five or six days a week).

R. M.P.Ed.7. Working days:

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

R. M.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 M.P.Ed. programme is 90 credits and for each semester 20 credits

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(2)

Provision of Bonus Credits Maximum 06 Credits in each Semester

Sl. No.	Special Credits for Extra Co-curricular Activities	Credit
1	Sports Achievement at State level Competition (Medal Winner)	1
	Sports Achievement National level Competition (Medal Winner)	2
	Sports participation International level Competition	4
2	Inter Uni. Participation (Any one game)	2
3	Inter College Participation (min. 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 / Adventure Activities	2
8	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.

R. M.P.Ed. 9. 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	15 Marks
Assignments / Lab/Practical	10 Marks
Attendance	5 Marks
Total	30 Marks

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.

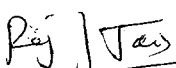
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Semester - I

Part A: Theoretical Course						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
Core Course						
MPCC-101	Research Process in Physical Education & Sports Sciences	3	3	30	70	100
MPCC-102	Physiology of Exercise.	3	3	30	70	100
MPCC-103	Yogic Sciences	3	3	30	70	100
Elective Course (Anyone)						
MPEC-101	Tests, Measurement and Evaluation in Physical Education	3	3	30	70	100
MPEC-102	Sports Technology					
Part-B Practical Course						
MPPC-101	Track and Field 1. Running Events *2. Gymnastics *3. Swimming. (*Any one)	6	3	30	70	100
MPPC-102	Laboratory Practical Sports Psychology, Physiology of Exercise, Sports Biomechanics and Kinesiology (Two practicals for each subject)	6	3	30	70	100
MPPC-103	Yoga *Aerobics, Self Defence Techniques-Marital Arts, Taek-won-do, Shooting, Archery - (*Any One activity + Yoga)	6	3	30	70	100
MPPC-104	Adventure Activities/ Mass demonstration Activities-	6	3	30	70	100
Total		36	24	240	560	800

Note: Total number of hours allotted to each 3 credit semester theory course are 51-60 hours per semester whereas 40-20 hours for each practical course.

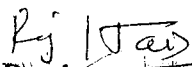

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Semester II

Part A: Theoretical Course						
Course Code	Title of the Papers	Total Hours	Credit	Internal Marks	External Marks	Total Marks
Core Course						
MPCC-201	Applied Statistics in Physical Education & Sports	3	3	30	70	100
MPCC-202	Sports Biomechanics & Kinesiology	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					
Part-B Practical Course						
MPPC-201	Track and Field II: Jumping events + Hurdles *Gymnastics: *Swimming (*any one)	6	3	30	70	100
MPPC-202	Games Specialization- Kabaddi, Kho-Kho, Badminton, Table Tennis, Tennis, Squash/ Baseball, Volleyball/ Basketball/ Cricket/ football/ Handball/ Hockey/ Netball/ Softball (Any two games)	6	3	30	70	100
MPPC-203	Teaching Lessons of Indigenous Activities and Sports- 5 Lessons(4 Internal & 1 External)	6	3	30	70	100
MPPC-204	Class room Teaching Lessons on theory of different Sports & Games- 5 Lessons (4 Internal & 1 External)	6	3	30	70	100
Total		36	24	240	560	800

Note: Total number of hours required to earn 3 credits for each theory course are 51-60 hours per semester whereas 102-120 hours for each practicum course.


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5

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	3	3	30	70	100
MPEC-302	Physical Fitness and Wellness					
Part-B Practical Course						
MPCC-301	Track and Field III: Throwing Events, Introduction of Heptathlon/Eventing, *Gymnastics* Swimming (*Any One)	6	3	30	70	100
MPCC-302	Games Specialization- III Boxing/ Fencing/ Judo/ Karate/ Wrestling/ Wushu (Any Two)	6	3	30	70	100
MPCC-303	Coaching Lessons of Track and Field/ Gymnastics/ Swimming - 5 Lessons (4 Internal & 1 External)	6	3	30	70	100
MPCC-304	Coaching Lessons of Game Specialization - 5 Lessons (4 Internal & 1 External)	6	3	30	70	100
Total		36	24	240	560	800

Note: Total number of hours required to earn 3 credits for each theory course are 51-60 hours per semester whereas 102-120 hours for each practicum course.

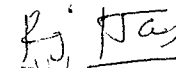
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6

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	3	3	30	70	100
MPCC-402	Sports Psychology	3	3	30	70	100
MPCC-403	Dissertation	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					
Part-B Practical Course						
MPPC-401	Track and Field Introduction of Decathlon event *Gymnastics *Swimming Practical Skill (*any one)	6	3	30	70	100
MPPC-402	Games Specialization- Practical skills (any two)	6	3	30	70	100
MPPC-403	Officiating Lessons of Track and Field/ Gymnastic/ Swimming - 5 Lessons (4 Internal & 1 External)	6	3	30	70	100
MPPC-404	Officiating Lessons of Game Specializations - 5 Lessons (4 Internal & 1 External)	6	3	30	70	100
Total		36	24	240	560	800
		144	96	960	2240	3200

Note: Total number of hours required to earn 3 credits for each theory course are 51-60 hours per semester whereas 102-120 hours for each practical course


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(7)

MPCC-101 RESEARCH PROCESS IN PHYSICAL EDUCATION AND SPORTS
SCIENCES

UNIT I – Introduction

Meaning and Definition of Research – Need, Nature and Scope of research in Physical Education. Classification of Research, Location of Research Problem. Criteria for selection of a problem, Qualities of a good researcher.

UNIT II – Methods of Research

Descriptive Methods of Research: Survey Study, Case study, Introduction of Historical Research, Steps in Historical Research, Sources of Historical Research: Primary Data and Secondary Data, Historical Criticism: Internal Criticism and External Criticism.

UNIT III – Experimental Research

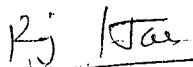

Experimental Research – Meaning, Nature and Importance, Meaning of Variable. Types of Variables. Experimental Design - Single Group Design, Reverse Group Design, Repeated Measure Design, Static Group Comparison Design, Equated Group Design, Factorial Design.

UNIT IV – Sampling

Meaning and Definition of Sample and Population. Types of Sampling: Probability Methods; Systematic Sampling, Cluster sampling, Stratified Sampling. Area Sampling – Multistage Sampling. Non- Probability Methods; Convenience Sample, Judgement Sampling, Quota Sampling.

UNIT V – Research Proposal and Report

Characterization of Thesis / Dissertation. Front Materials, Body of Thesis – Back materials. Method of Writing Research proposal, Thesis / Dissertation; Method of writing abstract and full paper for presenting in a conference and to publish in journals. Mechanics of writing Research Report, Footnote and Bibliography writing.


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REFERENCE :

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

Craig Williams and Chris Wragg (2006) Data Analysis and Research for Sport and Exercise Science, London; Rutledge Press

Jerry R Thomas & Jack K Nelson (2000) Research Methods in Physical Activities; Illonosis; Human Kinetics;

Kamlesh, M. L. (1999) Research Methodology in Physical Education and Sports, New Delhi Moses, A. K. (1995) Thesis Writing Format, Chennai; Poompugar Pathippagam

Rothstain, A (1985) Research Design and Statistics for Physical Education, Englewood Cliffs: Prentice Hall, Inc

Subramanian, R, Thirumalai Kumar S & Arumugam C (2010) Research Methods in Health, Physical Education and Sports, New Deihi; Friends Publication

Moorthy A. M. Research Processes in Physical Education (2010); Friend Publication. New Delhi

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9

Semester I
Theory Courses

MPCC-102 PHYSIOLOGY OF EXERCISE

UNIT I – Skeletal Muscles and Exercise

Macro & Micro Structure of the Skeletal Muscle, Chemical Composition. Sliding Filament theory of Muscular Contraction. Types of Muscle fibre. Muscle Tone, Chemistry of Muscular Contraction – Heat Production in the Muscle, Effect of exercises and training on the muscular system.

UNIT II – Cardiovascular System and Exercise

Heart Valves and Direction of the Blood Flow – Conduction System of the Heart – Blood Supply to the Heart – Cardiac Cycle – Stroke Volume – Cardiac Output – Heart Rate – Factors Affecting Heart Rate – Cardiac Hypertrophy – Effect of exercises and training on the Cardiovascular system.

UNIT III – Respiratory System and Exercise

Mechanics of Breathing – Respiratory Muscles, Minute Ventilation – Ventilation at Rest and During Exercise. Diffusion of Gases – Exchange of Gases in the Lungs – Exchange of Gases in the Tissues – Control of Ventilation – Ventilation and the Anaerobic Threshold. Oxygen Debt – Lung Volumes and Capacities – Effect of exercises and training on the respiratory system.

UNIT IV – Metabolism and Energy Transfer

Metabolism – ATP – PC or Phosphagen System – Anaerobic Metabolism – Aerobic Metabolism – Aerobic and Anaerobic Systems during Rest and Exercise. Short Duration High Intensity Exercises – High Intensity Exercise Lasting Several Minutes – Long Duration Exercises.

UNIT V – Climatic conditions and sports performance and ergogenic aids

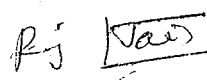

Variation in Temperature and Humidity – Thermoregulation – Sports performance in hot climate, Cool Climate, high altitude. Influence of: Amphetamine, Anabolic steroids, Androstenedione, Beta Blocker, Creatine, Human growth hormone on sports performance. Narcotic, Stimulants: Caffeine, Ephedrine, Sympathomimetic amines.

Note: Laboratory Practicals in Physiology be designed and arranged internally.

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REFERENCES:

- Amrit Kumar, R, Moses. (1995). Introduction to Exercise Physiology. Madras: Poornpugar Pathipagam.
- Beotra Alka. (2000) Drug Education Handbook on Drug Abuse in Sports: Sports Authority of India Delhi.
- Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
- David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics.
- Fcx, E.L., and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.
- Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co.
- Richard, W. Bowers. (1989). Sports Physiology. WMC: Brown Publishers.
- Sandhya Tiwaji. (1999). Exercise Physiology, Sports Publishers.
- Shaver, L. (1981). Essentials of Exercise Physiology. New Delhi: Subject Publications.
- Vincent, T. Murche. (2007). Elementary Physiology. Hyderabad: Sports Publication.
- William, D. Mc Aradle. (1996). Exercise Physiology, Energy, Nutrition and Human Performance. Philadelphia: Lippincott Williams and Wilkins Company.


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Semester I
Theory Courses

MPCC-103 Yogic Sciences

Unit I – Introduction

Meaning and Definition of Yoga. Astanga Yoga: Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana, Samadhi, Concept of Yogic Practices; Principles of Breathing – Awareness – Relaxation, Sequence – Counter pose – Time – Place – Clothes – Bathing – Emptying the bowels – Stomach – Diet – No Straining – Age – Contra- Indication – Inverted asana – Sunbathing.

Unit II – Asanas and Pranayam

Loosening exercise: Techniques and benefits. Asanas: Types- Techniques and Benefits, Surya Namaskar; Methods and benefits. Pranayama: Types- Methods and benefits. Nadis: Meaning, methods and benefits, Chakras: Major Chakras- Benefits of clearing and balancing Chakras.

Unit III – Kriyas

Shat Kriyas- Meaning, Techniques and Benefits of Neti – Dharti – Kapalapathi- Trataka – Nauli – Basti, Bandhas: Meaning, Techniques and Benefits of Jalendra Bandha, Jihva Bandha, Uddiyana Bandha, Mula Bandha.

Unit IV – Mudras

Meaning, Techniques and Benefits of Hasta Mudras, Asamyukta hastam, Samyukta hastam . Mana Mudra, Kaya Mudra, Banda Mudra, Adhara Mudra. Meditation: Meaning, Techniques and Benefits of Meditation – Passive and active, Saguna Meditation and Nirguna Meditation.

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Unit V – Yoga and Sports

Yoga Supplemental Exercise – Yoga Compensation Exercise – Yoga Regeneration Exercise-Power Yoga. Role of Yoga in Psychological Preparation of athlete: Mental Wellbeing, Anxiety, Depression Concentration, Self Actualization. Effect of Yoga on Physiological System: Circulatory, Skeletal, Digestive, Nervous, Respiratory, Excretory System.

Note: Laboratory Practicals be designed and arranged internally.

REFERENCE :

George Feuerstein, (1975). Text Book of Yoga. London: Motilal Bansaridass Publishers (P) Ltd.

Gore, (1990), Anatomy and Physiology of Yogic Practices. Lonavata: Kanchan Prkashan. Helen Purperhart (2004), The Yoga Adventure for Children. Netherlands: A Hunter House book.

Iyengar, B.K.S. (2000), Light on Yoga. New Delhi: Harper Collins Publishers. Karbelkar N.V.(1993) Patanjali Yogasutra Bhashya (Marathi Edition) Amravati: Hanuman Vyayam Prasarak Mandal

Kenghe. C.T. (1976). Yoga as Depth-Psychology and para-Psychology (Vol-I): Historical Background, Varanasi: Bharata Mahasana

Kuvalyananada Swami & S.L. Vinkar, (1963), Yogic Therapy – Basic Principles and Methods. New Delhi: Govt. of India, Central Health Education and Bureau.

Moorthy A.M. & Alagesan. S. (2004) Yoga Therapy. Coimbatore: Teachers Publication House.

Swami Kuvalayanda, (1998), Asanas. Lonavata: Kaivalyadhama.

Swami Satyananada Sarasvati. (1989), Asana Pranayama Mudra Bandha. Munger: Bihar School of Yoga.

Swami Satyananda Saraswathi. (1984), Kundalini and Tantra, Bihar: Yoga Publications Trust.

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Thirumalai Kumar. S and Indira. S (2011) Yoga in Your Life, Chennai: The Parkar Publication.

Tiwari O.P. (1998), Asanas Why and How, Lonavata: Kaivalyadhama.

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(13)

Semester I
Theory Courses

MPEC-101

TEST, MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION
(Elective)

UNIT I – Introduction

Meaning and Definition of Test, Measurement and Evaluation. Need and Importance of Measurement and Evaluation. Criteria for Test Selection – Scientific Authenticity. Meaning, definition and establishing Validity, Reliability, Objectivity. Norms – Administrative Considerations.

UNIT II – Motor Fitness Tests

Meaning and Definition of Motor Fitness. Test for Motor Fitness: Indiana Motor Fitness Test (for elementary and high school boys, girls and College Men) Oregon Motor Fitness Test (Separately for boys and girls) - JCR test. Motor Ability; Barrow Motor Ability Test – Newton Motor Ability Test – Muscular Fitness – Kraus Weber Minimum Muscular Fitness Test.

UNIT III – Physical Fitness Tests

Physical Fitness Test: AAHPERD Health Related Fitness Battery (revised in 1984), ACSM Health Related Physical Fitness Test, Roger's physical fitness Index. Cardio vascular test; Harvard step test, 12 minutes run / walk test, Multi-stage fitness test (Beep test)

UNIT IV – Anthropometric and Aerobic-Anaerobic Tests

Physiological Testing: Aerobic Capacity: The Bruce Treadmill Test Protocol, 1.5 Mile Run test for college age males and females. Anaerobic Capacity: Margaria-Kaamen test, Wingate Anaerobic Test, Anthropometric Measurements: Method of Measuring Height: Standing Height, Sitting Height. Method of measuring Circumference: Arm, Waist, Hip, Thigh, Method of Measuring Skin folds biceps, Triceps, Sub scapular, Suprailiac, calf muscles, calf muscles.

UNIT V – Skill Tests

Specific Sports Skill Test: Badminton: Miller Wall Volley Test. Basketball: Johnson Basketball Test, Harrison Basketball Ability Test. Cricket: Sutcliff Cricket test. Hockey: Friendel Field Hockey Test, Harban's Hockey Test. Volleyball, Russel Lange Volleyball Test, Brady Volleyball Test. Football: Mor-

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16

Christian General Soccer Ability Skill Test Battery, Johnson Soccer Test, Mc-Donald
volley Soccer Test, Tennis: Dyer Tennis Test

Note. Practicals of indoor and out-door tests be designed and arranged internally.

REFERENCES :

Authors Guide (2013) ACSM's Health Related Physical Fitness Assessment
Manual, USA: ACSM Publications

Collins, R.D. & Hodges P.B. (2001) A Comprehensive Guide to Sports Skills
Tests and Measurement (2nd edition) Lanham: Scarecrow Press

Cureton T.K. (1947) Physical Fitness Appraisal and Guidance, St. Louis: The
C. Mosby Company

Getchell B (1979) Physical Fitness A Way of Life, 2nd Edition New York, John
Wiley and Sons, Inc

Jenson, Clayne R and Cynthia, C. Hirst (1997) Measurement in Physical
Education and Athletics, New York, Macmillan Publishing Co. Inc

Kansal D.K. (1996), "Test and Measurement in Sports and Physical
Education, New Delhi: DYS Publications"

Krishnamurthy (2007) Evaluation in Physical Education and Sports, New
Delhi; Ajay Verma Publication

Vivian H. Heyward (2005) Advance Fitness Assessment and Exercise Prescription,
3rd Edition. Dallas TX: The Cooper Institute for Aerobics Research

Wilmore JH and Costill DL. (2005) Physiology of Sport and Exercise: 3rd
Edition. Champaign IL: Human Kinetics

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Physical Education and Sports. New Delhi; Friends Publications

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15

Unit I – Sports Technology

Meaning, definition, purpose, advantages and applications, General Principles and purpose of instrumentation in sports, Workflow of instrumentation and business aspects, Technological impacts on sports.

Unit II – Science of Sports Materials

Adhesives- Nano glue, nano moulding technology, Nano turf. Foot wear production, Factors and application in sports, constraints. Foams- Polyurethane, Polystyrene, Styrofoam, closed cell, and open cell foams, Neoprene, Foam. Smart Materials – Shape Memory Alloy (SMA), Thermo chromic film, High-density modelling foam.

Unit III – Surfaces of Playfields

Modern surfaces for playfields, construction and installation of sports surfaces. Types of materials – synthetic, wood, polyurethane. Artificial turf. Modern technology in the construction of indoor and outdoor facilities. Technology in manufacture of modern play equipments. Use of computer and software in Match Analysis and Coaching.

Unit IV – Modern equipment

Playing Equipments: Balls: Types, Materials and Advantages, Bat/Stick/Racquets: Types, Materials and Advantages. Clothing and shoes: Types, Materials and Advantages. Measuring equipments: Throwing and Jumping Events. Protective equipments: Types, Materials and Advantages. Sports equipment with nano technology Advantages.

Unit V – Training Gadgets

Basketball: Ball Feeder, Mechanism and Advantages. Cricket: Bowling Machine, Mechanism and Advantages, Tennis: Serving Machine, Mechanism and Advantages, Volleyball: Serving Machine Mechanism and Advantages. Lighting Facilities: Method of erecting Flood Light and measuring luminous. Video Coverage: Types, Size, Capacity, Place and Position of Camera in Live coverage of sporting events.

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

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16

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Charles J.A. Crane, F.A.A. and Furness, J.A.G. (1987) "Selection of Engineering Materials" UK: Butterworth-Heinemann.

Finn, R.A. and Trojan P.K. (1999) "Engineering Materials and their Applications" UK: Jaico Publisher.

John Mongilo, (2001), "Nano Technology 101" New York: Green wood publishing group.

Walia, J.S. Principles and Methods of Education (Paul Publishers, Jullandhar), 1999.

Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jullandhar, Sterling Publishers Pvt. Ltd.), 1982

Kozman, Cassidy and Jackson, Methods in Physical Education (W.B. Saunders Company, Philadelphia and London), 1952.

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17

Semester II
Theory Courses

MPCC-201 APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS

UNIT I – Introduction

Meaning and Definition of Statistics. Function, need and importance of Statistics. Types of Statistics. Meaning of the terms, Population, Sample, Data, types of data. Variables; Discrete, Continuous. Parametric and non-parametric statistics.

UNIT II – Data Classification, Tabulation and Measures of Central Tendency

Meaning, uses and construction of frequency table. Meaning, Purpose, Calculation and advantages of Measures of central tendency – Mean, median and mode.

UNIT III – Measures of Dispersions and Scales

Meaning, Purpose, Calculation and advances of Range, Quartile, Deviation, Mean Deviation, Standard Deviation, Probable Error standard error. Meaning, Purpose, Calculation and advantages of scoring scales; Sigma scale, Z Scale, Hull scale

UNIT IV – Probability Distributions and Graphs

Normal Curve. Meaning of probability- Principles of normal curve – Properties of normal curve. Divergence form normality – Skewness and Kurtosis. Formulation of hypothesis type I and type II error. Graphical Representation in Statistics; Line diagram, Bar diagram, Histogram, Frequency Polygon, Ogive Curve.

UNIT V – Inferential and Comparative Statistics

Tests of significance; Independent “t” test, Dependent “t” test – chi – square test, level of confidence and interpretation of data. Meaning of correlation – coefficient of correlation – calculation of co-efficient of correlation by the product moment method and rank difference method. Concept of ANOVA and ANCOVA.

Note ; It is recommended that the theory topics be accompanied with practical, based on computer software of statistics.

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REFERENCE

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Jerry R Thomas & Jack K Nelson (2000) Research Methods in Physical
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Senthilkumar Publications

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Semester II
Theory Courses

MPCC-202 SPORTS BIOMECHANICS AND KINESIOLOGY

UNIT I - Introduction

Meaning, nature, role and scope of Applied kinesiology and Sports Biomechanics. Meaning of Axis and Planes, Dynamics, Kinematics, Kinetics, Statics Centre of gravity -Line of gravity plane of the body and axis of motion, Vectors and Scalars.

UNIT II - Muscle Action

Origin, Insertion and action of muscles: Pectoralis major and minor, Deltoid, Biceps, Triceps (Anterior and Posterior), Trapezius, serratus, Sartorius, Rectus femoris, Abdominis, Quadriceps, Hamstring, Gastrocnemius.

UNIT III - Motion and Force

Meaning and definition of Motion. Types of Motion: Linear motion, angular motion, circular motion, uniform motion. Principles related to the law of Inertia, Law of acceleration, and law of counter force. Meaning and definition of force- Sources of force - Force components .Force applied at an angle - pressure - friction -Buoyancy, Spin - Centripetal force - Centrifugal force.

UNIT IV - Projectile and Lever

Freely falling bodies - Projectiles -Equation of projectiles stability Factors influencing equilibrium - Guiding principles for stability -static and dynamic stability. Meaning of work, power, energy, kinetic energy and potential energy. Leverage -classes of lever - practical application. Water resistance - Air resistance -Aerodynamics.

Note: Laboratory practicals should be designed and arranged for students internally.

UNIT V - Movement Analysis

Analysis of Movement: Types of analysis: Kinesiological, Biomechanical, Cinematographic. Methods of analysis - Qualitative and Quantitative

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20

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Uppal, A (2004), Kinesiology in Physical Education and Exercise
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Williams M (1982) Biomechanics of Human Motion, Philadelphia; Saunders Co.

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21

Semester II
Theory Courses

MPCC-203 ATHLETIC CARE AND REHABILITATION

Unit I – Corrective Physical Education

Definition and objectives of corrective physical Education. Posture and body mechanics, Standards of Standing sitting and lying Posture. Advantages of good posture, Drawbacks and causes of poor posture. Posture tests.

Unit II – Postural deformities

Normal curve of the spine and its utility, Deviations in posture: Kyphosis, lordosis, flat back, Scoliosis, round shoulders, Knock Knee, Bow leg, Flat foot. Causes for deviations and treatment including exercises.

Unit III – Rehabilitation Exercises

Passive, Active, Assisted, Resisted exercise for Rehabilitation, Stretching, PNF techniques.



Unit IV – Massage

Brief history of massage – classification and techniques of massage – Points to be considered in giving massage – Physiological, Chemical, Psychological effects of massage – Indication and contra indication of Massage.

Unit V – Sports Injuries, Care and Treatment

Principles pertaining to the prevention of sports injuries, care and treatment of micro and macro injuries in sports – Principles of apply cold and heat, infrared rays – Ultra sound, Therapy – Short wave diathermy, Principles and techniques of Strapping and Bandages.

Note: Each student shall submit Physiotherapy record of attending the Clinic and observing the cases of athletic injuries and their treatment procedure. (To be assessed internally)


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23

Semester II
Theory Courses

MPEC-201 SPORTS JOURNALISM AND MASS MEDIA (Elective)

UNIT I-

Introduction Meaning and Definition of Journalism, Ethics of Journalism – Canons of journalism- Sports Ethics and Sportsmanship – Reporting Sports Events. National and International Sports News Agencies.

UNIT II Sports Bulletin

Concept of Sports Bulletin: Journalism and sports education – Structure of sports bulletin – Compiling a bulletin – Types of bulletin – Role of Journalism in the Field of Physical Education: Sports as an integral part of Physical Education – Sports organization and sports journalism – General news reporting and sports reporting.

UNIT III Mass Media

Mass Media in Journalism: Radio and T.V. Commentary – Running commentary on the radio – Sports expert's comments. Role of Advertisement in Journalism. Sports Photography: Equipment- Editing – Publishing.

UNIT IV Report Writing on Sports

Brief review of Olympic Games, Asian Games, Common Wealth Games World Cup, National Games and Indian Traditional Games. Preparing report of an Annual Sports Meet for Publication in Newspaper; Organization of Press Meet.

UNIT -V Journalism

Sports organization and Sports Journalism – General news reporting and sports reporting. Methods of editing a Sports report. Evaluation of Reported News. Interview with and elite Player and Coach.

Practical assignments to observe the matches and prepare report and news of the same; visit to News Paper office and TV Centre to know various departments and their working. Collection of Album of newspaper cuttings of sports news.

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Ahiya B.N. (1988) Theory and Practice of Journalism: Set to Indian context Ed3.
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Bhatt S.C. (1993) Broadcast Journalism Basic Principles. New Delhi. Haranand
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43

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Semester II
Theory Courses

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

UNIT I – Introduction to Sports Management

Definition, Importance, Basic Principles and Procedures of Sports Management. Functions of Sports Management, Personal Management, Objectives of Personal Management, Personal Policies, Role of Personal Manager in an organization, Personnel recruitment and selection.

UNIT II – Program Management

Importance of Programme development and the role of management, Factors influencing programme development. Steps in programme development, Competitive Sports Programs, Benefits, Management Guidelines for School, Colleges Sports Programs, Management Problems in instruction programme, Community Based Physical Education and Sports program.

UNIT III – Equipments and Public Relation

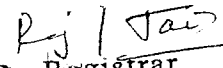
Purchase and Care of Supplies of Equipment, Guidelines for selection of Equipments and Supplies, Purchase of equipments and supplies, Equipment Room, Equipment and supply Manager. Guidelines for checking, storing, issuing, care and maintenance of supplies and equipments. Public Relations in Sports: Planning the Public Relation Program – Principles of Public Relation – Public Relations in School and Communities – Public Relation and the Media.

UNIT IV – Curriculum

Meaning and Definition of Curriculum. Factors affecting curriculum Principles of Curriculum Construction: Students centred, Activity centred, Community centred, Theories of curriculum development, Approaches to Curriculum; Subject centred, Learner centred and Community centred, Curriculum Framework.

UNIT V – Curriculum Sources

Sources of Curriculum materials – text books – Journals – Dictionaries. Encyclopaedias, Magazines, Internet. Curriculum research, Objectives of Curriculum research – Importance of Curriculum research. Methods of evaluation of curriculum.


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26

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- Aggarwal, J.C (1990). Curriculum Reform in India – World overviews, Doaba World Education Series – 3 Delhi: Doaba House, Book seller and Publisher.
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- Yadvnider Singh. Sports Management, New Delhi: Lakshay Publication.

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27

Semester III
Theory Courses

MPCC-301 SCIENTIFIC PRINCIPLES OF SPORTS TRAINING

UNIT I – Introduction

Sports training: Definition, Aim, Characteristics, Principles of Sports Training, Over Load: Definition, Causes of Over Load, Symptoms of Overload, Remedial Measures – Super Compensation -- Altitude Training.

UNIT II – Components of Physical Fitness

Strength: Methods to improve Strength: Weight Training, Isometric, Isotonic, Circuit Training.

Speed: Methods to Develop Speed: Repetition Method, Downhill Run.

Plyometric training. Parachute Running, Wind Sprints,

Endurance, Methods to Improve Endurance: Continuous Method, Interval Method, Repetition Method, Cross Country, Fartlek Training

UNIT III – Flexibility


Flexibility: Methods to Improve the Flexibility- Stretch and Hold Method, Ballistic Method, Special Type Training, Training for Coordinative abilities, Methods to improve Coordinative abilities, Sensory Method, Variation in Movement Execution Method, Variation in External Condition Method, Combination of Movement Method, Types of Stretching Exercises.

UNIT IV – Training Plan

Training Plan: Macro Cycle, Meso-Cycle. Short Term Plan and Long Term Plans - Periodisation: Meaning, Single, Double and Multiple Periodisation, Preparatory Period, Competition Period and Transition Period.

UNIT V – Preparation an of training schedules

1. Olympic plan
2. Asian game plan for 4 years
3. One year training schedule for University level player of students own field of specialization
4. Preparation of training programme for school & college level athlete


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Beotra Alka, (2000), Drug Education Handbook on Drug Abuse in Sports.
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29

Semester III
Theory Courses

MPCC-302 SPORTS MEDICINE

UNIT I – Introduction

Meaning, definition and importance of Sports Medicine, Definition and Principles of therapeutic exercises. Coordination exercise, Balance training exercise, Strengthening exercise, Mobilization exercise, Gait training, Gym ball exercise
Injuries: acute, sub-acute, chronic. Advantages and Disadvantages of PRICE, PRINCE therapy, Aquatic therapy.

UNIT II – Basic Rehabilitation

Basic Rehabilitation: Strapping/Tapping: Isotonic, Isokinetic, isometric stretching. Definition. Types of stretching, Advantages, dangers of stretching, Manual muscle grading.

UNIT III – Spine Injuries and Exercise

Head, Neck and Spinal injuries: Causes, Presentational of Spinal anomalies, Flexion, Compression, Hyperextension, Rotation injuries. Spinal range of motion. Free hand exercises, stretching and strengthening exercise for head neck, spine. Supporting and aiding techniques and equipment for Head, Neck and Spine injuries.

UNIT IV – Upper Extremity Injuries and Exercise

Upper Limb and Thorax Injuries: Shoulder: Sprain, Strain, Dislocation, and Strapping. Elbow: Sprain, Strain, Strapping. Wrist and Fingers: Sprain Strain, Strapping. Thorax, Rib fracture. Breathing exercises, Relaxation techniques. Free hand exercise, Stretching and strengthening exercise for shoulder, Elbow, Wrist and Hand. Supporting and aiding techniques and equipment for Upper Limb and Thorax Injuries.

UNIT V – Lower Extremity Injuries and Exercise

Lower Limb and Abdomen Injuries: Hip: Adductor strain, Dislocation, Strapping. Knee: Sprain, Strain, Strapping. Ankle: Sprain, Strain, Strapping. Abdomen: Abdominal wall, Contusion, Abdominal muscle strain. Free exercises – Stretching and strengthening exercise for Hip, knee, ankle and Foot. Supporting and aiding techniques and equipment for Lower limb and Abdomen injuries.
Practicals: Lab. Practicals and visit to Physiotherapy Centre to observe treatment procedure of sports injuries; data collection of sports injury

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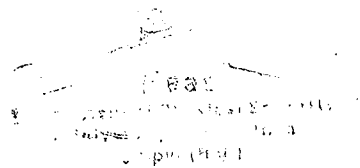
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The Encyclopedia of Sports Medicine. (1998). The Olympic Book of Sports Medicine, Australia: Title Blackwell Scientific publications.

Practical: Anthropometric Measurements



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Semester III
Theory Courses

MPCC-303 HEALTH EDUCATION AND SPORTS NUTRITION

Unit - I Health Education

Concept, Dimensions, Spectrum and Determinants of Health
Definition of Health, Health Education, Health Instruction, Health
Supervision Aim, objective and Principles of Health Education
Health Service and guidance instruction in personal hygiene

Unit - II Health Problems in India

Communicable and Non Communicable Diseases
Obesity, Malnutrition, Adulteration in food, Environmental sanitation, Explosive,
Population,
Personal and Environmental Hygiene for schools
Objective of school health service, Role of health education in schools
Health Services - Care of skin, Nails, Eye health service, Nutritional service,
Health appraisal, Health record, Healthful school environment, first- aid and
emergency care etc.

Unit- III – Hygiene and Health

Meaning of Hygiene, Type of Hygiene, dental Hygiene, Effect of Alcohol on
Health, Effect of Tobacco on Health, Life Style Management, Management of
Hypertension, Management of Obesity, Management of Stress

Unit – IV- Introduction to Sports Nutrition

Meaning and Definition of Sports Nutrition, Role of nutrition in sports, Basic
Nutrition guidelines, Nutrients: Ingestion to energy metabolism (Carbohydrate,
Protein and Fat), Role of carbohydrates, Fat and protein during exercise.

Unit – V Nutrition and Weight Management

Concept of BMI (Body mass index), Obesity and its hazard, Dieting versus
exercise for weight control Maintaining a Healthy Lifestyle, Weight management
program for sporty child, Role of diet and exercise in weight management,
Design diet plan and exercise schedule for weight loss and gain.

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Terras S. (1994) Stress, How Your Diet can Help: The Practical Guide to Positive Health Using Diet, Vitamins, Minerals, Herbs and Amino Acids, Thorons.

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33

Semester III
Theory Courses

MPEG301 SPORTS ENGINEERING (Elective)

Unit - I Introduction to sports engineering and Technology

Meaning of sports engineering, human motion detection and recording, human performance, assessment, equipment and facility designing and sports related instrumentation and measurement.

Unit - II Mechanics of engineering materials

Concept of internal force, axial force, shear force, bending movement, torsion, energy method to find displacement of structure, strain energy. Biomechanics of daily and common activities –Gait, Posture, Body levers, ergonomics, Mechanical principles in movements such as lifting, walking, running, throwing, jumping, pulling, pushing etc.



Unit- III Sports Dynamics

Introduction to Dynamics, Kinematics of particles – rectilinear and plane curvilinear motion coordinate system. Kinetics of particles – Newton's laws of Motion, Work, Energy, impulse and momentum.

Unit- IV Building and Maintenance:

Sports Infrastructure- Gymnasium, Pavilion, Swimming Pool, Indoor Stadium, Out-door Stadium, Play Park, Academic Block, Administrative Block, Research Block, Library, Sports Hostels, etc.

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 activity to be performed, Corridors and Gates for free movement of people, Emergency provisions of lighting, fire and exits, Eco-friendly outer surrounding. Maintenance staff, financial consideration.


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34

Building process:- design phase (including brief documentation),
construction phase functional (occupational) life, Re-evaluation,
refurnish, demolish.

Maintenance policy, preventive maintenance, corrective maintenance, record
and register for maintenance.

Unit – V Facility life cycle costing

Basics of theoretical analysis of cost, total life cost concepts, maintenance
costs, energy cost, capital cost and taxation

Reference

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Engineering

(Routledge, 2013)

Steve Hake, Editor, The Engineering of Sport (CRC Press, 1996)

Franz K. F. et. al., Editor The Impact of Technology on Sports II (CRC

Press, 2007) Helge N., Sports Aerodynamics (Springer Science &

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Semester III
Theory Courses

MPEC-302 PHYSICAL FITNESS AND WELLNESS (Elective)

Unit I – Introduction

Meaning and Definition" of Physical Fitness, Physical Fitness Concepts and Techniques, Principles of physical fitness, Physiological principles involved in human movement. Components of Physical Fitness.

Leisure time physical activity and identify opportunities in the community to participate in this activity. Current trends in fitness and conditioning, components of total health fitness and the relationship between physical activity and lifelong wellness.

Unit II – Nutrition

Nutrients; Nutrition labelling information, Food Choices, Food Guide Pyramid, influences on food choices-social, economic, cultural, food sources, Comparison of food values. Weight Management-proper practices to maintain, lose and gain. Eating Disorders. Proper hydration, the effects of performance enhancement drugs.

Unit III – Aerobic Exercise

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. Assessment of cardio respiratory fitness and set goals to maintain or improve fitness levels. Cardio respiratory activities including i.e. power walking, pacer test, interval training, incline running, distance running, aerobics and circuits.

Unit IV – Anaerobic Exercise

Resistance Training for Muscular Strength and Endurance; principles of resistance training, Safety techniques (spotting, proper body alignment, lifting techniques, spatial awareness, and proper breathing techniques). Weight training principles and concepts; basic resistance exercises (including free hand exercise, free weight exercise, weight machines, exercise bands and tubing, medicine balls, etc.) Advanced techniques of weight training

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Unit V – Flexibility Exercise

Flexibility Training, Relaxation Techniques and Core Training. Safety techniques (stretching protocol; breathing and relaxation techniques) types of flexibility exercises (i.e. dynamic, static), Develop basic competency in relaxation and breathing techniques. Pilates, Yoga.

Reference:

David K. Miller & T. Earl Allen, Fitness, A life time commitment, Surjeet Publication Delhi 1989.

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Robert Malt. 90 day fitness plan, D.K. publishing, Inc. 95, Madison Avenue, New York 2001

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37

Semester IV
Theory Courses

MPCC-401 INFORMATION & COMMUNICATION TECHNOLOGY (ICT) IN
PHYSICAL EDUCATION

Unit I – Communication & Classroom Interaction

Concept, Elements, Process & Types of Communication
Communication Barriers & Facilitators of
communication
Communicative skills of English - Listening, Speaking, Reading &
Writing Concept & Importance of ICT Need of
ICT in Education
Scope of ICT: Teaching Learning Process, Publication Evaluation, Research
and Administration
Challenges in Integrating ICT in Physical Education

Unit II – Fundamentals of Computers

Characteristics, Types & Applications of Computers Hardware of Computer:
Input, Output & Storage Devices Software of Computer- Concept & Types
Computer Memory: Concept & Types
Viruses & its Management
Concept, Types & Functions of Computer Networks Internet and its
Applications Web Browsers & Search Engines Legal & Ethical Issues

Unit III – MS Office Applications

MS Word: Main Features & its Uses in Physical Education
MS Excel: Main Features & its Applications in Physical Education
MS Access: Creating a Database, Creating a Table, Queries,
Forms & Reports on Tables and its Uses in Physical Education
MS Power Point: Preparation of Slides with Multimedia
Effects MS Publisher: Newsletter & Brochure

Unit IV – ICT Integration in Teaching Learning Process

Approaches to Integrating ICT in Teaching Learning Process
Project Based Learning (PBL)
Co-Operative Learning
Collaborative Learning
ICT and Constructivism: A Pedagogical Dimension

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38

Unit V – E-Learning & Web Based Learning

E-Learning
Web Based Learning
Visual Classroom

REFERENCES:

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Research and Development Wing-2006

Pradeep K. Sinha & Priti; Sinha, Foundations computing BPB Publications -2006.

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39

MPCC-402 SPORTS PSYCHOLOGY

UNIT I - Introduction

Meaning, Definition, History, Need and Importance of Sports Psychology. Present Status of Sports Psychology in India. Motor Learning: Basic Considerations in Motor Learning
– Motor Perception – Factors Affecting Perception – Perceptual Mechanism. Personality: Meaning, Definition, Structure – Measuring Personality Traits. Effects of Personality on Sports Performance.

UNIT II - Motivation

Meaning and Definition, Types of Motivation: Intrinsic, Extrinsic. Achievement Motivation: Meaning, Measuring of Achievement Motivation. Anxiety: Meaning and Definition, Nature, Causes, Method of Measuring Anxiety. Competitive Anxiety and Sports Performance. Stress: Meaning and Definition, Causes. Stress and Sports Performance. Aggression: Meaning and Definition, Method of Measurement. Aggression and Sports Performance. Self-Concept: Meaning and Definition, Method of Measurement.

UNIT III – Goal Setting

Meaning and Definition, Process of Goal Setting in Physical Education and Sports. Relaxation: Meaning and Definition, types and methods of psychological relaxation. 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.

UNIT IV – Spectators and performance

Fans and Spectators: Meaning and definition, effect of Sports spectators on athletic performance.

UNIT V – Group Cohesion

Group: Definition and Meaning, Group Size, Groups on Composition, Group Cohesion, Group Interaction, Group Dynamics. Current problems in Sports and Future Directions – Sports Social Crisis Management – Women in Sports: Sports Women in our Society, Participation pattern among Women, Gender inequalities in Sports.

Practicals: *Atleast five experiments related to the topics listed in the Units above should be conducted by the students in laboratory. (Internal assessment.)*

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90

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Jay Coakley. (2001) Sports in Society – Issues and Controversies in International Education, Mc-Craw Seventh Ed.

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Miroslaw Vauks & Bryant Cratty (1999). Psychology and the Superior Athlete. London: The Macmillan Co.

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Robert N. Singer. (1989) The Psychology Domain Movement Behaviour. Philadelphia: Lea and Febiger.

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Whiting, K, Karman., Hendry L.B & Jones M.G. (1999) Personality and Performance in Physical Education and Sports. London: Hendry Kimpton Publishers.

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41

Semester IV
Theory Courses

MPCC - 403 DISSERTATION

1. A candidate shall have dissertation for M.P.Ed. – IV Semester and must submit his/her Synopsis and get it approved by the Head of Department on the recommendation of D.R.C. (Departmental Research Committee).
2. A candidate selecting dissertation must submit his/her dissertation not less than one week before the beginning of the IVth Semester Examination.
3. The candidate has to face the Viva-Voce conducted by DRC.

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49

Theory Courses

MPEC-401 VALUE AND ENVIRONMENTAL EDUCATION

UNIT I – Introduction to Value Education.

Values: Meaning, Definition, Concepts of Values. Value Education: Need, Importance and Objectives. Moral Values: Need and Theories of Values. Classification of Values: Basic Values of Religion, Classification of Values.

UNIT II – Value Systems

Meaning and Definition, Personal and Communal Values, Consistency, Internally consistent, internally inconsistent, Judging Value System, Commitment, Commitment to values.

Unit- III – Environmental Education

Definition, Scope, Need and Importance of environmental studies., Concept of environmental education, Historical background of environmental education, Celebration of various days in relation with environment, Plastic recycling & prohibition of plastic bag / cover, Role of school in environmental conservation and sustainable development, Pollution free eco-system.

Unit - IV Rural Sanitation and Urban Health

Rural Health Problems, Causes of Rural Health Problems, Points to be kept in Mind for improvement of Rural Sanitation, Urban Health Problems, Process of Urban Health, Services of Urban Area, Suggested Education Activity, Services on Urban Slum Area, Sanitation at Fairs & Festivals, Mass Education.

Unit - V Natural Resources and related environmental issues:

Water resources, food resources and Land resources, Definition, effects and control measures of: Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, Thermal Pollution Management of environment and Govt. policies, Role of pollution control board.

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43

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Odum, E.P. Fundamentals of Ecology (U.S.A.: W.B. Saunders Co.) 1971.

Rao, M.N. & Datta, A.K. Waste Water Treatment (Oxford & IBH Publication Co. Pvt. Ltd.) 1987

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Heywood, V.H. and Watson V.M., Global biodiversity Assessment (U.K.: Cambridge University Press), 1995.

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44

MPEC-402 EDUCATION TECHNOLOGY IN PHYSICAL EDUCATION AND SPORTS

Unit I – Nature and Scope

Educational technology-concept, Nature and Scope. Forms of educational technology: teaching technology, instructional technology, and behavior technology; Transactional usage of educational technology: integrated, complementary, supplementary stand-alone (independent); programmed learning stage, media application stage and computer application stage.

Unit II – Systems Approach to Physical Education and Communication

Systems Approach to Education and its Components: Goal Setting, Task Analysis, Content Analysis, Context Analysis and Evaluation Strategies; Instructional Strategies and Media for Instruction. Effectiveness of Communication in instructional system; Communication - Modes, Barriers and Process of Communication.

Unit III- Instructional Design

Instructional Design: Concept, Views. Process and stages of Development of Instructional Design. Overview of Models of Instructional Design; Instructional Design for Competency Based Teaching; Models for Development of Self Learning Material.

Unit IV – Audio Visual Media in Physical Education

Audio-visual media - meaning, importance and various forms Audio/Radio: Broadcast and audio recordings - strengths and Limitations, criteria for selection of instructional units, script writing, pre-production, post-production process and practices, Audio Conferencing and Interactive Radio Conference. Video/Educational Television: Telecast and Video recordings Strengths and limitations, Use of Television and CCTV in instruction and Training, Video Conferencing, SITE experiment, countrywide classroom project and Satellite based instructions. Use of animation films for the development of children's imagination.

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45

Unit V – New Horizons of Educational Technology

Recent innovations in the area of ET interactive video - Hypertext, video-texts, optical fiber technology - laser disk, computer conferencing, etc. Procedure and organization of Teleconferencing/Interactive video-experiences of institutions, schools and universities. Recent experiments in the third world countries and pointers for, India with reference to Physical education. Recent trends of Research in Educational Technology and its future with reference to education.

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Amita Bhardwaj, "New Media of Educational Planning". Sarup of Sons, New Delhi-2003

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D. N. Dasgupta, Pointer Publishers Education and Communication for development, O. P. Dahama. O. P. Bhatnagar, Oxford Page 68 of 71 IBH Publishing company, New Delhi

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K. Sampath, A. Pannirselvam and S. Santhanam. Introduction to Educational Technology (New Delhi: Sterling Publishers Pvt. Ltd.) : 1981.

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46.