ANDHRA KESARI UNIVERSITY

CURRICULUM FRAMEWORK

BACHELOR OF PHYSICAL EDUCATION (M.P.Ed.)

TWO YEAR PROGRAMME

Syllabus

Approved by

Board of Studies in Physical Education & Sports Sciences

Andhra Kesari University on 03.09.2026

As per the guidelines of the

NATIONAL COUNCIL FOR TEACHER EDUCATION

And

Common core syllabus approved by

Andhra Pradesh State Council of Higher Education

Semester – I

Part A : Theoretical Course						
CourseCode	**Title of the Papers**	**Total Hours**	**Credit**	**Internal Marks**	**External Marks**	**Total Marks**
	Core Course					
R(26) MP-101	Research Process in Physical Education & Sports Sciences	3	3	30	70	100
R(26) MP-102	Physiology of Exercise	3	3	30	70	100
R(26) MP-103	Applied Statistics in Physical Education & Sports	3	3	30	70	100
	Core Elective Course (Anyone)					
R(26) MP-104	Fitness and Life Style Management	3	3	30	70	100
R(26) MP-105	Education Technology in Physical Education					
	Part- B Practical Course					
R(26) MP-106	**Project Work**:Track and Field Running Events (compulsory) Any one of the following i.e. Gymnastics/ Swimming / Yoga	6	3	30	70	100
R(26) MP-107	Games Specialisation – Badminton / Baseball / Basketball/ Cricket/ Football/ Handball /Hockey/ Kabaddi / Kho-kho / Netball/ Softball/ Table Tennis / Tennis / Volleyball/ (*Any two games – One Indigenous & one ball game*)	6	3	30	70	100
R(26) MP-108	Teaching Lessons: Coaching lessons in the events of R(26) MP- 106 and R(26) MP-107.	6	3	30	70	100
R(26) MP-109	Class room Teaching Lessons on theory of different Sports & Games	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.

Semester – II

Part A : Theoretical Course						
CourseCode	**Title of the Papers**	**Total Hours**	**Credit**	**Internal Marks**	**External Marks**	**Total Marks**
Core Course						
R(26) MP-201	Yogic Sciences	3	3	30	70	100
R(26) MP-202	Sports Biomechanics and Kinesiology	3	3	30	70	100
R(26) MP-203	Tests, Measurement and Evaluation in Physical Education	3	3	30	70	100
Open Elective Course						
R(26) MP-204	MOOCS 1. Multi Disciplinary Course 2. Audit Course (Any One of the Above course)	3	3	30	70	100
Part- B Practical Course						
R(26) MP-205	Track and Field Jumping and hurdle Events (compulsory) Any one of the following i.e. Gymnastics/ Swimming / Yoga	6	3	30	70	100
R(26) MP-206	Laboratory Practical in Physiology of Exercise and Bio Mechanics & Kinesiology (Two practical in each subject)	6	3	30	70	100
R(26) MP-207	Any two of the following activities: Aerobics / Self Defensive Techniques – Taekwondo / Shooting / Archery.	6	3	30	70	100
R(26) MP-208	**Project Work :**Adventure Activities / Mass demonstration Activities	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.

Semester - III

Part A : Theoretical Course						
Course Code	**Title of the Papers**	**Total Hours**	**Credit**	**Internal Marks**	**External Marks**	**Total Marks**
Core Course						
R(26) MP-301	Scientific Principles of Sports Training	3	3	30	70	100
R(26) MP-302	Sports Medicine, Athletic Care and Rehabilitation	3	3	30	70	100
R(26) MP-303	Sports Psychology and Sports Sociology	3	3	30	70	100
Open Elective Course						
R(26) MP-304	MOOCS 1. Multi Disciplinary Course 2. Audit Course (Any One of the Above course)	3	3	30	70	100
Part- B Practical Course						
R(26) MP-305	Track and Field: Throwing Events. Field test for Fitness & Skills	6	3	30	70	100
R(26) MP-306	Laboratory : Sports Psychology and Physiotherapy lab *(Any two practical in each subject)*	6	3	30	70	100
R(26) MP-307	Games Specialisation – **Any two games other than two games opted from first semester** Badminton / Baseball / Basketball/ Cricket/ Football/ Handball /Hockey/Kabaddi / Kho-kho / Netball/ Softball/ Table Tennis / Tennis/ Volleyball	6	3	30	70	100
R(26) MP-308	**Project Work :**Teaching Lessons: Coaching lessons in the events of R(26) MP- 305 and R(26) MP-307.	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.

Semester - IV

Part A :Theoretical Course						
CourseCode	**Title of the Papers**	**Total Hours**	**Credit**	**Internal Marks**	**External Marks**	**Total Marks**
Core Course						
R(26) MP-401	Information & Communication Technology (ICT) in Physical Education	3	3	30	70	100
R(26) MP-402	Health Education and Sports Nutrition	3	3	30	70	100
R(26) MP-403	Sports Technology	3	3	30	70	100
Elective Course (Anyone)						
R(26) MP-404	Dissertation / Event Management	3	3	30	70	100
R(26) MP-405	Sports Management and Curriculum Designs in Physical Education					
Part- B Practical Course						
R(26) MP-406	Track and Field – Combined events Training methods: Circuit, Interval, Fartlek, Plyometric & Resistance Trainings	6	3	30	70	100
R(26) MP-407	**Project Work :**Game of Specialisation – Practical Skills - any one optedfrom four games in previous semesters - Record & Viva-voce.	6	3	30	70	100
R(26) MP-408	Officiating in Track and Field / Gymnastics / Swimming/Yoga	6	3	30	70	100
R(26) MP-409	Coaching lessons in Game of Specialization - Internship	6	3	30	70	100
Total		**36**	**24**	**240**	**560**	**800**
Grand Total for Four Semesters		**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 practicum course.

SCHEME OF EXAMINATION

SEMESTER-I

Paper Code	Internal	External	Total Marks
R(26) MP-101	30	70	100
R(26) MP-102	30	70	100
R(26) MP-103	30	70	100
R(26) MP-104 /R(26) MP-105	30	70	100
R(26) MP-106	30	70	100
R(26) MP-107	30	70	100
R(26) MP-108	30	70	100
R(26) MP-109	30	70	100
TOTAL	**240**	**560**	**800**

SEMESTER-II

Paper Code	Internal	External	Total Marks
R(26) MP-201	30	70	100
R(26) MP-202	30	70	100
R(26) MP-203	30	70	100
R(26) MP-204	30	70	100
R(26) MP-205	30	70	100
R(26) MP-206	30	70	100
R(26) MP-207	30	70	100
R(26) MP-208	30	70	100
TOTAL	**240**	**560**	**800**

SEMESTER-III

Paper Code	Internal	External	Total Marks
R(26) MP-301	30	70	100
R(26) MP-302	30	70	100
R(26) MP-303	30	70	100
R(26) MP-304	30	70	100
R(26) MP-305	30	70	100
R(26) MP-306	30	70	100
R(26) MP-307	30	70	100
R(26) MP-308	30	70	100
TOTAL	**240**	**560**	**800**

SEMESTER-IV

Paper Code	Internal	External	Total Marks
R(26) MP-401	30	70	100
R(26) MP-402	30	70	100
R(26) MP-403	30	70	100
R(26) MP-404/ R(26) MP-405	30	70	100
R(26) MP-406	30	70	100
R(26) MP-407	30	70	100
R(26) MP-408	30	70	100
R(26) MP-409	30	70	100
TOTAL	**240**	**560**	**800**

Theory Syllabus
Semester – I

R(26) MP-101: RESEARCH PROCESS IN PHYSICAL EDUCATION AND SPORTS SCIENCES

Unit-1 Introduction

Meaning, Definition, Nature, Scope and importance of research in Physical Education. Classification of Research: Basic, Applied and Action Research, Location of Research Problem, Criteria for selection of a Research problem and Qualities of a good researcher.

Unit-2 Methods of Research

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

Unit-3 Experimental Research

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

Unit-4 Sampling

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

Unit-5 Research Proposal and Report

Chapterization of Thesis / Dissertation: Front Materials, Body of Thesis, Back materials, Method of Writing Research proposal, Thesis / Dissertation: Method of writing abstract, full paper for presenting in a conference, publishing in journals, Mechanics of writing Research Report, Footnote and Bibliography.

AI in Academic Research: Ethical usage of AI tools for rapid literature mapping, automated thematic coding, and utilizing natural language tools for organizing research bibliographies

References:

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, Londonl Routledge Press
4) Jerry R Thomas & Jack K Nelson (2000) Research Methods in Physical Activities; Illonosis; Human Kinetics;
5) Kamlesh, M. L. (1999) Reserach Methodology in Physical Education and Sports, New Delhi Moses, A. K. (1995) Thesis Writing Format, Chennai; Poompugar Pathippagam
6) Rothstain, A (1985) Research Design and Statistics for Physical Education, Englewood Cliffs: Prentice Hall, Inc
7) Subramanian, R, Thirumalai Kumar S & Arumugam C (2010) Research Methods in Health, Physical Education and Sports, New Delhi; Friends Publication
8) Moorthy A. M. Research Processes in Physical Education (2010); Friend Publications

R(26) MP-102 : PHYSIOLOGY OF EXERCISE

Unit-1 Introduction, Skeletal Muscles and Exercise

Definition of Physiology, Exercise Physiology and importance of Exercise Physiology in sports. Macro & Micro Structure of the Skeletal Muscle, Types of Muscle fibers and their characteristics, Chemical Composition, Chemistry of Muscular Contraction, Sliding Filament theory of Muscular Contraction. Muscle Tone, Heat Production in the Muscle and Effects of exercise and training on the muscular system.

Unit-2 Cardiovascular System and Exercise

Structure of the Heart , Heart Valves and Direction of the Blood Flow, Conduction System of the Heart, cardiac Circulation, Cardiac Cycle, Heart Rate ,Stroke Volume, Cardiac Output and Heart Rate and stroke Volume interactions. Effects of exercise and training on Cardio vascular system.

Unit-3 Respiratory System and Exercise

External and Internal Respiration, Mechanism of Respiration, Respiratory Muscles, Minute Ventilation , Ventilation at Rest and During Exercise. Exchange of Gases in Lungs and Tissues, Control of Ventilation, Ventilation and Anaerobic Threshold, Oxygen recovery, Lung Volumes and Capacities, Anatomical Dead Space. Effects of exercise and training on respiratory system.

Unit-4 Metabolism and Energy Transfer

Metabolism : Definition and types- Anabolism and Ketabolism, Anaerobic Metabolism: ATP,PC or Phosphagen System, Anaerobic Glycolysis, Aerobic Metabolism: Aerobic Glycolysis, Fat Metabolism. Metabolism during Rest and Exercise (.High Intensity ,and Long Duration Exercises),

Metabolic AI Modeling: Exploring how machine learning models predict individual VO2 max, lactate thresholds, and metabolic rates based on non-invasive wearable telemetry data

Unit-5 Climatic conditions and Ergogenic aids

Variations in Temperature and Humidity,– Thermoregulation, –Sports performance in hot Cool and humid Climate, high altitude, acclamiatization and circadian rhythm. Ergogenic Aids: Pharmacological, Hormonal, Physiological aspects and their effects on sports performance. Doping and WADA.

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

References:

1) Amrit Kumar, R, Moses. (1995). Introduction to Exercise Physiology. Madras: Poompugar Pathipagam.
2) Beotra Alka, (2000) Drug Education Handbook on Drug Abuse in Sports: Sports Authority of India Delhi.
3) Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
4) David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics.
5) Fox, E.L., and Mathews, D.K. (1981). The Physiological Basis of Physical Education and Athletics. Philadelphia: Sanders College Publishing.
6) Guyton, A.C. (1976). Textbook of Medical Physiology. Philadelphia: W.B. Sanders co. Richard, W. Bowers. (1989). Sports Physiology. WMC: Brown Publishers.
7) Sandhya Tiwaji. (1999). Exercise Physiology. Sports Publishers.
8) 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
9) Performance. Philadelphia: Lippincott Williams and Wilkins Company. John Bullock. et.al., Physiology, 4th Ed.Newyork

R(26) MP-103: APPLIED STATICTICS IN PHYSICAL EDUCATION AND SPORTS

UNIT I – Introduction
Meaning, Definition, types, Functions, need and importance of Statistics. Meaning of the terms, Population, Sample, Data and types of data. Variable: Definition and types of Variables, Discrete and Continuous. Parametric and non-parametric statistics.

UNIT II –Measures of Central Tendency
Construction of frequency table. Meaning, Definition , Importance, Computation, Advantages and Disadvantages of Measures of central tendency. – Mean, median and mode.

UNIT III – Measures of Dispersions and Scales
Meaning, Purpose, Calculation and a Advantages of Range, Quartile Deviation, Mean Deviation, Standard Deviation, Probable Error. Scales : Meaning, Purpose, Computation and advantages of T scale; 6 Sigma scale, Z Scale and Hull scale.

UNIT IV – Probability Distributions and Graphs
Normal Curve. Principles of normal curve, Properties of normal curve. Meaning of probability,—. Divergence from normality. Skewness and Kurtosis. Graphical Representations in Statistics: Line diagram, Bar diagram, Histogram, Frequency Polygon, Ogive Curve and Pie Diagram.

UNIT V – Inferential and Comparative Statistics
Tests of significance, "T" test, "F" ratio, chi square test, level of confidence and interpretation of data. Meaning of correlation , co-efficient 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.

REFERENCE
Best J. W (1971) Research in Education, New Jersey; Prentice Hall, Inc
Clark D.H. (1999) Research Problem in Physical Education 2nd edition, Eaglewood Cliffs, Prentice Hall, Inc.
Jerry R Thomas & Jack K Nelson (2000) Research Methods in Physical Activities; Illonosis; Human Kinetics;
Kamlesh, M. L. (1999) Reserach Methodology in Physical Education and Sports, New Delhi Rothstain A (1985) Research Design and Statistics for Physical Education, Englewood Cliffs:
Prentice Hall, Inc
Sivaramakrishnan. S. (2006) Statistics for Physical Education, Delhi; Friends Publication Thirumalaisamy (1998), Statistics in Physical Education, Karaikudi, Senthilkumar
Publications.

R(26) MP-104 : FITNESS AND LIFE STYLE MANAGEMENT (ELECTIVE)

Unit-1

Concept of Fitness Definition and meaning of Fitness, Different Kinds of Fatnesses, Physical Fitness, Skill Related and Health Related Physical Fitness. Relationship of fitness and health fitness to develop health of an individual, Wellness revolution: Life style and Health fitness relationship, Meaning of active life style, Physical Inactivity and associated health risks Diabetes, Hypertension, Atherosclerosis, Arthritis

Unit - 2

Meaning of Health, Health related fitness components: Body Compositions, Cordio Vasular Fitness, Muscular Endurance, strength, flexibility, benefits of health related fitness. Benefits of Health fitness Components: Meaning of health related and Physical fitness components Exercise protocols for the health fitness components, Body Composition, concepts of body weight and components of body weight, Assessment of body composition, Obesity, Meaning of Obesity and risk factors, of Obesity and over fatness- Muscular and joint flexibility-risk factors Associated with poor muscular and Joint flexibility. .

Unit-3

Nutrition: base for human performance-Carbohydrates, Fats and Proteins. Recommended intake for Normal persons and exercising individuals. Vitamins, Minerals and Water. Osteoporosis and Calcium, Minerals and performance. Optimal nutrition for exercise, Energy value of different important foods, Food Pyramid, fluid replacement before, during and after exercise for temperature regulation and injury prevention, carbohydrates and electrolytes during exercise.

Unit-4

Stress-meaning and types of stress, Physical and mental stress-Harmful effects of overtraining and excessive exercise on health, -mental stress and painful effects of mental stress on health. Anxiety, Depression, insomnia, Compulsive obsessive behaviors, Stress relief through exercise and stress management protocols.

Unit-5

Health behavior, Self efficacy and health behavior, Behavioral modification for wellness, Social support and health of an individual, Life style and other related aspects of activity during childhood . Facts on childhood obesity and activity.

References:

1. Lifestyle management in Health and Social care, Merinda Thew and Jim McKenna, Blackwell Publishing. United Kingdom.
2. Predicting Health behavior, Mark Connor and Paul Norman, Open University Press, Buckingham, UK.
3. Health Behavior and health education: Theory, research and Practice, Karen Glanz, Barbara Rimer, Viswanath, John wiley and sons, USA. (Free pdf book)
4. Human Body Composition, Steven B Heymstead, Timothy Lohan, Zimian Wang, Scott B Going, Human Kinetics, USA.
5. Science of Flexibility, Michael J Alter, Human Kinetics, USA.
6. Applied Body Composition Assessment, Vivian H Heyward, Dale R Wagner, Human Kinetics, USA.
7. Coping with life stress-the Indian experience, Meena Hariharan, Amazon Books.
8. Stress Management- a Wellness approach, Nanette E Tummers, Human Kinetics, USA.
9. Wellness Workbook: How to achieve enduring health and vitality, John W Travis and Regina S Ryan, Crown publishing, New York.
10. The Soul of Wellness: 12 holistic principles for achieving a healthy body, mind, heart and spirit, Rajiv Parti, Select book incorporation, New York.
11. Wellness coaching for lasting Lifestyle change, Michael Arloski, Whole person associates, Duluth, USA.
12. Staying Healthy with Nutrition: The complete guide to Diet and Nutritional medicine, Elson M Has,.

R(26) MP-105: EDUCATION TECHNOLOGY IN PHYSICAL EDUCATION (ELECTIVE)

Unit I – Nature and Scope

Educational technology: concept, Nature and Scope. Forms of educational technology: teaching technology, instructional technology, and behavioural technology; Transactional usage of educational technology: integrated, complementary, supplementary stand-alone (independent); programmed learning stages; 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 (Satellite Instructional, Television, Experiment) experiment, countrywide classroom project and Satellite based instructions. Use of animation films for the development of children's imagination.

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. 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 Educational Technology in Physical Education..

REFERENCE:

Amita Bhardwaj, New Media of Educational Planning".Sarup of Sons, New Delhi-2003 Bhatia and Bhatia. The Principles and Methods of Teaching (New Delhi : Doaba House),
1959.
Communication and Education, 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
Essentials of Educational Technology, Madan Lal, Anmol Publications
K. Sampath, A. Pannirselvam and S. Santhanam. Introduction to Educational Technology (New Delhi: Sterling Publishers Pvt. Ltd.) : 1981.

Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jalandhar, Sterling Publishers Pvt. Ltd.), 1982
Kozman, Cassidy and kJackson. Methods in Physical Education (W.B. Saunders Company,Philadelphia and London), 1952.

Semester-II

R(26) MP-201 : YOGIC SCIENCES

Unit I – Introduction
Meaning, Definition, Scope and importance of Yoga, Essentials For Yoga Practices; Age, Diet, Stomach Emptying bowels, bathing, Clothes, Sun Bathing, No Straining, Place, Time, Awareness, Sequence. Contra indication, Counter Pose, Inverted Asana, Breathing, and Relaxation. Basic Systems of Yoga with importance - Astanga Yoga: Yama, Niyama, Aasna, Pranayama, Prathyahara, Dharana, Dhyana, Samadhi. Streams of Yoga: Hatha Yoga, Raja Yoga, Karma Yoga, Bhakti Yoga and Gnana Yoga.

Unit II – Aasanas , Kriyas, Bandhas and Mudras:
Asana: Definition, Classification, Sitting, Standing, Lying, & Inverted ASanas. Benefits of Asanas, Asanas and Loosening Exercises, Surya Namaskara- Description and Benefits. Kriyas : Meaning, Neti, Nauli, Dhauti, Kapalabhati, Trataka, Bhastrika, Benefits. Bandhas: Jalandhara, , Udyana, Mula and their Importance. Mudras: Definition, Purpose, Benefits of Hastamudras, Asamyuktahasta, Samyuktahasta, Manamudra, Kayamudra, Bandha Mudra, Adharamudra.

Unit III – Pranayama: Definition, Tradition, Types , Importance & Impact of Pranayama on naadis. Chakras: Definition and types, Effects of Pranayama on major chakras.

Unit IV – Meditation: Meaning, Definition and Benefits. Types of Meditation: Passive, active, Saguna and Nirguna Meditation. Meditation and Health, Meditation and stress Management.

Unit V – Yoga and Sports
Effects of Yoga on Physiological Systems: Respiratory , Circulatory, Digestive, Nervous and Excretory Systems. Place of Yoga as Supplementary , Compensatory , Regenerative and Yogic Power. Role of Yoga in Sports: Promotion of Mental Wellbeing, Self Actualization, Concentration , Suppression of Anxiety and depression. Role of Yoga in Making out a Sports Person.

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 Yogac 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) Patanjal 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 Manishai.
Kuvalyananada Swami & S.L. Vinekar, (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. Lonavala: 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.
Swami Sivananda, (1971). The Science of Pranayama. Chennai: A Divine Life Society Publication.
Thirumalai Kumar. S and Indira. S (2011) Yoga in Your Life, Chennai: The Parkar Publication.
Tiwari O.P. (1998). Asanas-Why and How. Lonavala: Kaivalyadham.
*Satya Murty.K, **Elements of Yoga**,Vedadri Brahma Gnana Kendra, Pedakakani, Guntur, India,(2015)*

R(26) MP-202: SPORTS BIOMECHANICS AND KINSESIOLOGY

UNIT I – Introduction

Meaning, nature, importance and scope of Applied kinesiology and Sports Biomechanics. Meaning of Axis and Planes, Dynamics, Statics, Kinematics, Kinetics, gravity, Center of Gravity, Line of gravity and base of the body. Vectors and Scalars.

UNIT II – Motion and Force

Meaning and definition of Motion. Types of Motion: Linear motion, angular motion and General motion. uniform & Non Uniform motion. Laws of Motion : law of Inertia, Law of acceleration and law of reaction. Force: Definition and types of force: Centripetal Force, Centrifugal Force, Sources of force, components of Force, Factors of Force. pressure ,friction ,Buoyancy and Spin .

UNIT III – Projectiles and Levers

Freely falling bodies, Projectiles: Principles of Projectiles: Stability, equilibrium and its Types. Factors Effecting on Equilibrium . Definition of Work, Power and Energy. Mechanical Energy: kinetic energy, potential energy and strain energy. Levers: Definition and Types of Levers and their practical application. Mechanical Advantage. Fluid Resistance, Aerodynamics.

UNIT IV – Movement Analysis

Analysis of Movement: Types of analysis: Kinesiological, Biomechanical. Video Analysis. Methods of analysis – Qualitative, Quantitative, Predictive methods.

UNIT V – Muscle Action

Origin, Insertion and action of Muscles around shoulder, Elbow, Hip, Knee and muscles of Abdomen & Trunk.

Computer Vision Kinematics: Deep dive into advanced multi-camera AI frameworks (like OpenPose or MediaPipe) for 3D gait analysis, trajectory tracking, and elite athletic form optimization.

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

REFERENCE:

Deshpande S.H.(2002). Manav Kriya Vigyan – Kinesiology (Hindi Edition) Amravati :Hanuman Vyayam Prasarak Mandal.

Hoffman S.J. Introduction to Kinesiology (Human Kinesiology publication In.2005. Steven Roy, & Richard Irvin. (1983). Sports Medicine. New Jersery: Prentice hall. Thomas. (2001). Manual of structural Kinesiology, New York: Me Graw Hill. Uppal A.K. Lawrence Mamta MP Kinesiology(Friends Publication India 2004)

Uppal, A (2004), Kinesiology in Physical Education and Exercise Science, Delhi Friends publications.

Williams M (1982) Biomechanics of Human Motion, Philadelphia; Saunders Co.

Peter.M.Mc.Ginnis, Biomechanics of Sport and Exercise, Human Kinetics, U.S.A, 1999

R(26) MP-203 : TESTS, MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION

UNIT I – Introduction

Meaning and Definition of Test, Measurement and Evaluation. Need and Importance of Measurement and Evaluation. Criteria for Test Selection: Scientific Authenticity, Administrative Considerations and Educational Applications. Scientific Authenticity: Validity, Reliability, Objectivity, Norms, Duplicate Forms and Standard Directions.

UNIT II – Physical Fitness Tests

Physical Fitness: Meaning and Definition, Physical Fitness Tests: AAHPER, JCR Tests. Roger's physical fitness Index. Cardio vascular test: Harvard step test, Cooper's 12 minutes run / walk test.

UNIT III – Motor Fitness Tests

Meaning and Definition of Motor Fitness, Motor Fitness Tests; Indian Motor Fitness Test, Oregon Motor Fitness Test. Motor Ability: Meaning, Definition. Motor Ability Test: Barrow Motor Ability Test, Newton Motor Ability Test. Muscular Fitness: Kraus Weber Minimum Muscular Fitness Test.

UNIT IV – Anthropometric and Aerobic-Anaerobic Tests

Physiological Test - Aerobic Capacity: Bruce Treadmill Test Protocol, Beep test. Anaerobic Capacity: Margaria-Kalamen test, Anthropometric Measurements: Method of Measuring Height: Standing Height, Sitting Height. Girth: Arm, Waist, Hip, Thigh. Skin Folds: Chest, Abdomen, Midthigh, Triceps, Illiac Crest.

UNIT V – Skill Tests

Specific Sports Skill Test: Badminton: French Stalter Short Service Test, Miller Wall Volley Test. Basketball: Knox, Johnson Basketball Test. Hockey: Henry Friedel Field Hockey Test, Schmithal's Field Hockey Test, Volleyball: Russel Lange Volleyball Test, Brady Volleyball Test. Football: Johnson Soccer Test, Mc-Donald Volley Soccer Test. Tennis: Dyer Tennis Test, Broer Miller Test.

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

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