



SRM UNIVERSITY

SRM Nagar, Kattankulathur -603203

DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS SCIENCES

MASTER OF PHILOSOPHY

(M.Phil)

(One Year)

SYLLABUS

SRM UNIVERSITY

DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS SCIENCES

Degree Methodology Examination

PAPER - I

(Common to all M.Phil candidates in Physical Education)

RESEARCH PROCESSES, EXPERIMENTAL DESIGN & STATISTICS

UNIT - I

RESEARCH PROBLEM AND VARIABLES :

Meaning and definition of research - Qualities of good research -Characteristics of scientific research - Formation of title - Statement of the problem - Delimitations and limitations. Hypothesis in different form -Operational definitions - Significance of the study. Internal and external validity - Independent and dependent variables- Variables in comparative, relationship and effect studies.

UNIT - II

AREAS OF RESEARCH ANP EXPERIMENTAL DESIGN :

Areas of research: Training methods exercise physiology, sports Psychology and Test, measurement and evaluation -Writing a proposal by selecting a topic in the above area - collecting literature from various sources - Experimental design` meaning - Basic principles - Repeated measures design, rotated group design, factorial design - defining thesis format - arrangement of chapters - Use of computers for research.

UNIT - III

Measures of central tendency, Variability, Reliability - T-Ratio for independent and repeated group - level of confidence - Standard scales - Different types of line, bar and phi-diagram frequency polygon, histogram and o'give curve- sampling processes - different types of sampling - Sampling theory.

UNIT - IV

One way analysis of variance - Independent and repeated groups -Problem solution - Two way analysis of variance - Independent and repeated group - Problem solution - Analysis of covariance - one way - Two way - concepts.

UNIT - V

Simple, partial and multiple correlation - Problem solution - Wherry Doolittle method - Concept. Chi square- Biserial, tetrachoric, Correlations phi - Contingency coefficients - Problem solution. Rank order correlation.

REFERENCE BOOKS:

1. Clarke, David H. and Clarke, H.Harrison. Research processes in Physical Education. New Jersey: Prentice Hall Inc., 1998.
2. Best, John W & Kahn, James V. Research in Education. New Delhi: Prentice Hall of India, 1992.
3. Clarke, H Harrison and David H. Clarke Advanced Statistics. New Jersey. Prentice Hall Inc., 1992.
4. Garret, Harry E. & Woodworth, N.S Statistics in Psychology and Education. Bombay: Allied Publications Private Ltd., 1988

PAPER - II

AREA OF SPECIALIZATION

TRAINING METHODS - SYLLABUS

UNIT - I

Basic principles of training basic Physical fitness components. Strength -Types of strength, static muscular activity, dynamic muscular activity - eccentric muscular activity, concentric muscular activity Strength development training -General exercises, special exercises, competition specific strength and strength endurance, Unit construction for strength development.

UNIT - II

Speed - Definition of speed - Factors influencing speed - Training for speed development - Intensity, extent, and density. Unit construction activity other than running, Speed barrier, endurance and speed training Endurance -Groups of endurance - duration, repetition, competition and testing. Types of endurance short form medium term and long tern endurance factors to be considered for endurance training.

UNIT - III

Mobility - Definition., classification, factors influencing mobility, role of mobility training to develop mobility, mobility unit construction periodiation - Meaning single periodiation double periodiation. Different periods - Preparatory period competition period transition periods meaning of the tern units micro cycles and macro cycle.

UNIT - VI

Effect of drugs - Alcohol, Coffine, Smoking on performance Blood doping, anabolic steroid drug abuse In athletics Effect (climatic changes -High altitude training for long distance runner Effect of aerobic endurance training on heart rate, heart we, 'Blood pressure. Blood distribution, lungs volume, respiratory rate, maximal oxygen uptake and lactic acid.

UNIT - V

Testing processes and tools - Strength, Speed, Endurance, agility Flexibility. Vital capacity. Percentage of body fat, VO₂ max. Tools apparatus, Spiro meter, sphygmomanometer, grip dynamometer, Leg dynamometer, install pulse apparatus, biomoniter, flexometer, Skin fold caliper, treadmill.

REFERENCE BOOKS:

1. Frank W.Dick sports Training Principles, London: Lepus Book Co., 1997.
2. Frances wakefield, Berothy Harikins and John M.Cooper, Make and Field Fundamentals for Girls and Women London C V. Mosby Co., 1990.
3. Hardayal Sing, "Sports Training General theory and methods" NSNIS Patiala 2004.

PAPER - II AREA OF SPECIALIZATION EXERCISE PHYSIOLOGY - SYLLABUS

UNIT - I

Structure and function of skeletal muscles - Skeletal muscle and exercise - Types of contraction - Sliding filament theory, muscular theory of contraction -Heat production in muscle, type of muscle. Growth and development of height and weight - Physical performance in young athlete, training the young athletes ageing - Body composition and ageing - Changes in cardio respiration and strength - Environmental stress and ageing. Sex difference body size and composition -Athletic ability - Physiological adaptation to exercise and training -Special consideration for female.

UNIT - II

Qualifying sports training and optimal body weight for performance -Excessive training - Over training - Detraining - Retraining. Nutrition, Nutrition classes - Water and electrolyte balance - Conflates diet Drinks, Ergogenic aids - Pharmacological agents and hormonal agent - Physiological agent and reforms.

UNIT - III

Structure end function of cardiovascular system and effect of exercise on pulmonary ventilation and energy metabolism - Factors affecting the aerobic training. Evaluating endurance capacity - Cardiovascular, Respiratory. Metabolic adaptations to training.

UNIT - IV

Forms of cardiovascular disease - Development of individual risk. Risk of head attack and detain during exercise - Prevention through, Physical activity. Obesity, diabetes - Role of Physical activity in weight control and diabetes Prescription of exercise for health and fitness

- Medical clearance - exercise prescription, monitoring density - Exercise program - Exercise rehabilitation of people with disease.

UNIT - V

Work capacity under different environmental condition under hot, humid, high altitude - Energy cost of various sports activities - Anaerobic metabolism - Aerobic metabolism - Energy release. Measurement Evaluation: Assessment of Max-VO₂ using Treadmill bicycle ergometer - using Spiro meters - Assessment power using Margaria Kalamam tests - Reaction time, movement time, Systolic diastolic blood pressure. Mean pressure, Pulse rate - Finger dexterity, Steadiness test assessing body composition.

REFERENCE BOOKS:

1. Clark David H. Exercise Physiology, Prentice Hall, Inc. Englewood Cliffee, N.J. 1975 (Test Book)
2. Guyton A.C Test Book of Mechanical Physiology, W.S. Saunders Co., Philadelphia, 1976.
3. Devrise H.A. Physiology of Exercise for Physical Education Athletics staples press, London, 1976.
4. Kaspovich P.V. & Sinning W.E. Physiology of Muscular Activity
5. Bourne G.H. The Structure & Function of Muscle Academic London, 1972.
6. Morehouse L.E. & Miliar A T. Physiology of Exercise. C.V Henry Co., Saint Louis, 1975.
7. Astrand & K. Rodahi - Text Book of work Physiology, McGrow Hill Kogakusha Ltd 1970
8. Mathews K.K & Fey EL Physiological basis of Physical Education and Athletics W B Savince & Co., Phyladeiphia. 1976.

PAPER - II AREA OF SPECIALISATION SPORTS PSYCHOLOGY - SYLLABUS

UNIT - I

PSYCHOLOGY OF MOTOR LEARNING :

Meaning and definition of sports Psychology. Perceptual motor learning -The retention of motor skills - Transfer of skills attention and its role in learning motor skills.

UNIT - II

PSYCHOLOGY OF SPORTS MEN AND COACH :

Nature of personality - Assessments of personality - The issue of heredity in personality - Personality traits of sportsmen - Personality of coach.

UNIT - III

MOTIVATION IN SPORTS :

Theories of motivation - Achievement motivation - level of aspiration and achievement - Method of assessing aspiration level - Motivation and Participation in Physical activity- motivation and sports performance.

UNIT - IV

SOCIO- PSYCHOLOGICAL DIMENSION OF SPORTS AND ACTIVATION :

Soon performance in groups - Team cohesion sociometry in sports - Leadership in sports - Sport audience - Effect of sports audience on performance Activanon in sports - Method of assessing activation level on athletes.

UNIT - V

PSYCHOLOGY OF COMPETITION :

Psychology characteristics of players during pre, during and post competition. Mental training - Psychological preparation of superior athletes. Psychodynamics in sports. Antigenic training.

REFERENCE BOOKS:

1. Vanko Mirolave: Bryant Cratty J. Psychology and the Superior Athlete, The Macmillan Co , London.
2. Cratty Sryant, J. Psychology in contemporary sports, Englewood Cliffs Prentics - Hall, Inc New Jersey, 1983.
3. Cratty Bryant J. Movement Behaviour and motor learning , Philadelphia. Lea and Febiger (USA)
4. Cratty Bryant, Psychological and sociological basis of Physical activity, Englewood Cliffs, New Jersey, Prentice Hall Inc.
5. Singer Robert N. Motor Learning and Human Performance. New York, Macmillan Publishing company, Inc.

PAPER - II

TEST MEASUREMENT AND EVALUATION - SYLLABUS

UNIT - I

Need of tests - Criteria of test selection - Classification of tests -Construction of knowledge and skill tests.

UNIT- II

Motor / Health related fitness tests - Circulatory and respiratory endurance tests - Body dimensions and physiques posture appraisal -Centre of gravity tests - Flexibility tests - Kraus-Weber muscular fitness tests - Roger's strength and physical fitness indices.

UNIT- III

Motor ability and educability tests: Mecloy's - -Larson's - Newton's -J C.R. - Barrow motor ability tests -Johnson and Metheny - Johnson Motor Educability Tests.

UNIT - IV

Skill tests Basketball-Badminton-Football -Volleyball -Hockey - Tennis.

UNIT - V

Administration of tests, suggestions for administering tests - testing personnel - Time for testing - Test records Preparation- of reports - Construction of tables and Graphic-exhibits - purposes of reporting.

REFERENCE BOOKS:

1. Bosco, James S. Measurement and evaluation in Physical Education. Fitness and Sports. New Jersey: Prentice Hall Inc.1983.
2. Clarke H. Harrison, Application of measurement to health and Physical Education. New Jersey: Prentice Hall Inc., 1976.
3. Mathews, Donald K. Measurement in Physical Education. London: W.B. Saunders Co., 1998.

PAPER - III

COURSE WORK

AREA OF DISSERTATION

