

RESEARCH PROCESS AND EXPERIMENTAL DESIGNS

Subject Code : PE01

No. of Credit : 4

UNIT – I

The Problem - Locating the Problem - Criteria in Selecting a Problem - Definition and Delimiting the Problem - Basic vs Applied Research. Library Sources - Purpose of Surveying Related Literature - Major Literature Sources - Library Sources, Research Reviews - Card Catalog - Abstracts, Bibliographies and in Indexes - Microfiche Reproductions - Educational Resources - Information Centre - Selected Periodicals - Library Reading.

UNIT – II

Historical Research - Sources of Historical Materials - Evaluation of Historical Materials - Oral History - Historical Hypotheses - Pitfalls in Historical Research - Illustrated Studies. Philosophical Studies - Nature of the philosophical method - selected examples of philosophical studies - pitfalls in philosophical research. Surveys - Survey by questionnaire - interview survey - opinion assessment - case studies - profiles - sampling.

UNIT – III

Experimental Research - Experimental methods (Designs) - Test construction - relationship studies - comparative studies - control of experimental factors - instrumentation - establishing the research laboratory. Technology - Introduction to the use of calculators and computers in analyzing the data - available equipment/instruments and their specific uses for research in physical education and sports.

UNIT – IV

Areas of Research - Physiology of exercise - Sports Psychology - Sports Biomechanics - Growth and Development - Research on Yogic studies - Sports Physiotherapy.

UNIT – V

Research Report - Preparation of Research proposal - preparation of the research report - organization of the thesis report - writing suggestions - use of sources - tables - figures - foot notes - bibliography - thesis reproduction - follow up with publication.

REFERENCES

1. Aggarwall, J.C. Educational Research - An Introduction New Delhi, Arya Book Deposit.
2. Best, John W. Research in Education, New Delhi, Prentice Hall of India (PVT) Ltd.
3. Clarke, H. David and H. Harrison Clarke, Research Process in Physical Education ,Englewood Cliffs, New Jersey, Prentice Hall India (PVT) Ltd.
4. Mouly, George The science of educational research, New Delhi, Eurasis Publishing House (PVT) Ltd.
5. Sukhia, Sp.et.al Elements of Educational Research, Bombay Allied Publications (PVT) Ltd.
6. Moorthy, A. M. Research Process and Experimental Design, UGC Publication.



YOGA AND PHYSICAL FITNESS

Subject Code : PE02

No. of Credit : 4

Unit – I

Meaning - need - importance of historical background of yoga - Types of yoga. Bhakthi Yoga, Karma yoga, Gnana Yoga, Raja Yoga.

Unit – II

Effects of Yoga on different systems of human body, impact of yoga on daily life. Scientific effects of yogasanas, pranayama-Kriyas: Therapeutic uses of Yoga. Yoga and dietary principles.

Unit – III

Definition of physical fitness - need and importance - meaning of wellness - difference between physical fitness and wellness - the relationship between fitness/wellness and health - components of physical fitness and their meaning and importance.

Unit- IV

Assessment of physical fitness - Athletic related fitness and health related fitness - Problems associated with measurement of physical Education - Strength and endurance, assessment and prescription. Problems associated with measurement of cardio - Vascular endurance.

Unit – V

Body composition - Techniques for assessing body composition - Nutrition for weight control and wellness - Effects of exercises on physical fitness - Preventive and curative, exercise for cardiovascular disease - Chronic obstructive pulmonary disease - diabetes - back pain.

REFERENCE

1. Swami Digamberji. Yoga and physical Education, Kavivalyadhama. Konalva, India.
2. M.L Gharota, Science of Yoga, Kaivalyadhama, Lonalva, Uindia.
3. Karambalkar, Therapeutic value of yoga, Kaivalyadhama, Lonavlva, India.

SPECIALIZATION – SPORTS TRAINING

Subject Code : PE03

No. of Credit : 4

UNIT - I

Sports Training

Aim, Tasks and Characteristics

UNIT - II

Training Load

Important features of Training Load, (Intensity, Density, Duration and Frequency)
Principles of Training Load.

UNIT - III

Development of Important Motor Components

- a. Strength-forms of strength, Characteristics of strength, Strength training means and methods.
- b. Speed-forms of speed, characteristics of speed, speed training method.
- c. Endurance-forms of endurance, characteristics of Endurance, endurance training methods.
- d. Flexibility-forms of flexibility, characteristics of flexibility, methods of development of flexibility.
- e. Co-ordination.

UNIT - IV

Technical Preparation

Fundamentals and methods for the development of technique in sports, stages of technical development.

UNIT - V

Training Plans

Long terms and short Term plans, periodisation, cyclic process of training.
Planning for competition

Main – build up competitions, Competition frequency, preparation for competition.

RESEARCH PROCESS AND EXPERIMENTAL DESIGNS

Unit- I

Definition & Meaning of research - Types of research - Criteria for selecting research problem - Research proposal- Formation of the Statement of the problem - Hypothesis in different form - Basic assumptions -Delimitations-Limitations - Operational definition - Significance of the study - Literature review - Purpose of the Literature review - Basic Literatures search strategies - Steps in the Literature search - Search engine - e- resources.

Unit- II

Variable and its types -Reliability, Validity & Objectivity. Pilot study, Selection of test, collection of data, Test administration-Quantitative and Qualitative research design - Simple experimental design and Complex experimental design (Concepts) - Experimental design- Single group design, reverse group design, quasi experimental design, static group, random group and related group design- Components of thesis.

Unit -III

Meaning and definition of statistics - Types of statistics - Measures of central tendency, Variability- Normal curve - reliability - sampling process - Different types of sampling - sampling theory - Mean - Standard deviation - independent 't' test, Dependent 't' test - level of confidence - Degrees of freedom - standard scales, t-scale, 6 sigma scale, Hull scale, Z scale - graphs - line, bar, phi diagram, frequency polygon and histogram- Percentile.

Unit- IV

Need and importance of analysis of variance- One way analysis of variance (problem) and post hoc tests- scheffe's test, Newman keuls test, Duncan multi range test, Turkey HSD test- Two way analysis of variance-post hoc test factorial designs (problems)-repeated measures of analysis of variance (problems) Analysis of covariance- One Way- Two Way - Concepts - MANOVA - MANCOVA (Concepts) Meaning of Meta-analysis- uses of meta- analysis in physical education.

Unit- V

Pearson product moment correlation (problems), Partial (problems) and multiple correlations- Wherry Doolittle method- concept- chi-square (problems) - Rank order correlation (problems), Regression- analysis- meaning and advantages of SPSS. Statistical tools available in SPSS. SPSS interpretation of descriptive statistics, correlation, t-test and ANOVA, ANCOVA output results.

REFERENCE

- Berg, Kris E., & Richard, W., Latin. (1994). *Essentials of modern research methods in health Physical Education and recreation*. New Jersey: Prentice hall.
- Best, John W., & James, V., Kahn. (1992). *Research in Education*. New Delhi: Prentice Hall India.
- Clarke, David H., & Clarke, H., Harrison. (1984). *Research process in physical education, Recreation and Health*. Newjery: prentice Hall.
- Diane, C., Blankenship. (2010). *Applied Research and Evaluation Methods in Recreation*. Champaign: Human kinetics.
- Jerry, R., Thomas, Jack, K., Nelson & Stephen, J., Silverman. (2010). *Research methods in Physical Activity. Sixth Edition*. Champaign: Human Kinetics.
- Rothstein, Anne., L. (1985) *Research Design and Statistics for Physical Education*. New Jersey: Prentice Hall
- William, A., Pitney & Jenny, Parker. (2009). *The Qualitative Research in Physical activity and The Health Professions*. Champaign: Human Kinetics.

YOGA AND PHYSICAL FITNESS

Unit-I

Definition and Meaning of Yoga - Aims of yoga - History of yoga (Thirumoolar & Patanjali) - Astanga yoga - yama, niyama, asana, pranayama, prathyahara, dharana, dhyana and Samadhi. Types of yoga - raja yoga, bhakti yoga, jnana yoga, karma yoga, mantra yoga, laya yoga, hatha yoga and kriya yoga - schools of yoga - kaivalyadhama, bihar school of yoga.

Unit-II

Yogic view of the body (pancha kosha) - annamaya kosha, manomaya kosha, pranamaya kosha, vigyanmaya kosha and anandamaya kosha - Definition of kundalini - form of kundalini - three gunas and mental nature - Patanjali view of abhyasa & vairagya - antaraya - the five affliction (pancha klesha) - avidya, asmita, raga, dwesha and abhinivesh - develops the viveka.

Unit-III

General principles of yogic practices - Definition mitahara - types of food (sattvic, tamasic & rajic food) meaning of mitahara (yogi diet) and various diet - ideal place of (hut) yogi practices - time - concept of asana - stretching mechanism - effect of physiology of breathing mechanism - principles of yogic practices - asana, pranayama, kriya and meditation - Bandha - types bandha mulabandha, jalandrabandha, uddiyanabandha and jivhabandha - Definition & meaning of mudras - types mudra.

Unit-IV

yogic technique, benefits and precaution of various asana & pranayama - Asana - sukaasana, siddhaasana, artha padmaasana, padmaasana, swathikaasana, vajraasana - shanthisana (shavaasana), makarasana - sirasana, sarvangasana, halasana, viparitarani, matysyasana, pawanamuktasana, setubandhasana, bhujangasana, arthashalabhasana, dhanurasana, pachimotasana, vakrasana, arthamatsyendraasana, parvatasana, tadasana, vrikshasana, trikonasana, mayurasana, chakrasana & suryanamaskar - pranayama - types of pranayama anulomaviloma, suryabhedan, ujjayi, bhastrika, biramari, shitali, shikharri, plavin and murcheha .

Unit-V

kriya - neti (jala neti & sutra neti), dhauti - (vastra dhauti & danda dhauti), nauli, basti, Kapalabakti, trataka - definition & meaning of meditation - types of meditation - sthula dhyana, jyoti dhyana and sukuma dhyana- Effect of yoga on various system of human body - Respiratory system - Circulatory system - Nervous system - Digestive system - Reproductive system - Skeletal system - Muscular system - Endocrine system.

REFERENCES

- Gharote, M.C. (2012). *Applied Yoga*, Kaivalyadhama S.M.Y.M. Samiti, Lonavla,pune.
Gore, M.M. (2012). *Anatomy and Physiology of Yogi Practices*, New Age Books, New Delhi, India.
Gerstein. N. (2004). *Guiding Yoga's Light lessons for yoga Teachers*, Pendragon Publishing.
Swami Digambarji. *Gheranda Samhita*, Kaivalyadhama S.M.Y.M. Samiti, Lonavla, pune..
Swami Digambarji. (1998). *Hatha Pradipika*, Kaivalyadhama S.M.Y.M. Samiti, Lonavla, pune.
Swami Kuvalayananda. (1993). *Asana*, Kaivalyadhama S.M.Y.M. Samiti Lonavla,pune.

Swami Kuvalayananda. (2005). *Pranayama*, Yoga Mimasa Publication, Lonavla, pune..

Swami Muktibodhananda. (2009). *Hatha Yoga Pradipika*, Bihar School of Yoga, Mungaer, Bihar.

Swami Niranjanananda Saraswati. (2010). *Prana and Pranayama*, Bihar School of Yoga, Mungaer, Bihar.

Swami Satyananda Saraswati. (2008). *Four Chapters on Freedom*, Bihar School of Yoga, Mungaer, Bihar.

SPORTS TRAINING

Unit-I

Meaning & Definition of Sports training and coaching- aim and tasks (objectives) of sports training- principles of sports training- systematization of sports training process. Basic methods of conditioning: characteristics and common variations of basic methods of conditioning – effects of basic methods of conditioning – definition, types and factors (features) of training load – adaptation process and conditions of adaptation- concept of over load and its types- causes and symptoms of over load – tackling of over load – judgment of training load – concept of recovery and factors affecting pace of recovery- means of recovery.

Unit-II

Meaning & Definition of strength and its importance – factors determining strength – types of strength – characteristics of strength training. Meaning & Definition of speed and factors determining it – forms of speed – means and methods of speed training – speed barrier. Meaning & Definition of endurance and its benefits- forms of endurance- factors determining endurance- aerobic power requirements for different sports – means and methods of endurance training- effect of different methods of endurance training - Meaning & Definition of flexibility and its importance - factors determining flexibility – forms of flexibility – methods of flexibility training – Meaning & Definition of Co-coordinative abilities and its importance – characteristics of co-coordinative abilities - different co-coordinative abilities affecting sports performance.

Unit-III

Definition of technique. Technical training – characteristics of technique –methods of technique training – causes of faults and their correction. Concept of planning and its importance – principles of planning – factors involved in planning – system of planning. Periodization: Sports form and Top form. Aim and contents of periods, preparatory, competition and transitional period – periodical cycles, Macro cycle, Meso Cycle and Micro cycle – types of periodization and duration of the periods.

Unit-IV

Meaning & Definition: Fitness, Physical fitness – General & Specific fitness – Need & importance of Physical fitness – Types: Performance related Physical fitness and Health related Physical fitness – Performance related Physical fitness Components (Speed, Strength, Endurance, Agility, Power and Flexibility) - Health related Physical fitness Components (Cardio-respiratory Endurance, Muscular Strength, Muscular Endurance, Flexibility and Body Composition) —Meaning: Exercise, Training, Conditioning, overtraining, detraining – Training

load – Adaptation – Recovery – Repetition – Set – Bout – Volume – Intensity – Density. Interval (intensive, extensive) – Repetition methods. Types of Contraction: Isometric (Concentric & Eccentric), Isotonic, and Isokinetic.

Unit-V

Walking – Jogging – Running – Spot running – Bounding strides – High knee – Fast arms – Hopping – Skipping – Stepping on the bench – Side stepping – Sand running, Uphill running – Swimming – Cycling – Free hand exercises – Exercises with partner – Callisthenics – Aerobics. facilitation. Weight training – Resistance training – Plyometric, Swiss ball exercise, Medicine ball exercise, Band exercise, Ladder exercise and Wall bar exercise. Barbell Exercises, Weight Machines, Aerobic Training Equipments.

REFERENCES

- Baechle, Thomas. R. & Earle, Roger. W., (2000). *Essentials of Strength Training and Conditioning*. Champaign: Human Kinetics.
- Baechle, Thomas. R. & Earle, Roger. W., (2012). *Weight Training*. Champaign: Human Kinetics.
- Brooks, Douglas. S., (2004). *The Complete Book of Personal Training*. Champaign: Human Kinetics.
- Fahey, Thomas. D., (2005). *Weight Training Basics*. New York: McGraw-Hill.
- Heyward, Vivian. H., (2010). *Advanced Fitness Assessment and Exercise Prescription*. Champaign: Human Kinetics.
- John Shepherd (2007). *Sports Training*, U.S: A Firefly Book.
- Newton, Harvey., (2010). *Explosive lifting for Sports*. Champaign: Human Kinetics.
- Sandler, David., (2010). *Fundamental Weight Training*. Champaign: Human Kinetics.
- Singh, Hardayal, (1995). *Science of Sports training*. New Delhi: D.V.S. Publications.
- Uppal, A.K. (2009). *Science of sports training*. New Delhi: Publishers of books on physical education & sports sciences.