

Annexure No.	51 E
SCAA Dated	29.02.2008

**BHARATHIAR UNIVERSITY COIMBATORE 641 046**  
**DEPARTMENT OF PHYSICAL EDUCATION**  
**P.G. DIPLOMA IN EXERCISE THERAPY AND SPORTS**  
**REHABILITATION**  
**for Regular Candidates with effect from the Academic Year 2007-2008**  
**Onwards**

**Regular**

**Need of the course**

The fact remains that most programmes are organized and run outside of the schools and the most Exercise therapist, fitness instructors and leaders in these programmes have little training. People want to exercise in a way that provides no medical risk and also ensures that they reach their fitness goals quickly. This requires some experience, which is what certification is meant to ensure. With the fitness industry growing so rapidly, it becomes increasingly important that persons at all levels in the industry have specific training to do their jobs competently.

**Objectives of the course**

- To produce well-trained Exercise therapist and sports Rehabilitants.
- To spread the message of positive health as taught in exercise therapy and Sports rehabilitation to the people in a systematic and scientific manner.
- To provide a proper perspective and insight into various aspects of exercise therapy and sports rehabilitation to the Exercise therapist and sports Rehabilitants.

**Regulations**

**Eligibility**

Candidate for admission to the P.G. Diploma in Exercise Therapy and Sports Rehabilitation (P.G.D.E.T.& S.R) should have passed the bachelors degree examination for a recognized university or accepted by the syndicate as equivalent there to subject

to such conditions as may be prescribed there-of , the applicant should enjoy average level of health and be free from serious illness or defect.

### **Duration of the course**

The course is for a period of one academic year

### **Course of study**

Candidates shall be permitted to do the P.G. Diploma course concurrently with their P.G. Degree. The course of study shall comprise theoretical instructions, supervised practical training in fitness exercises and practice teaching as well as systematic maintenance of lesson plans.

### **Distribution of Teaching Hours**

There shall be ten papers in all. There shall be a total number of 360 actual contact hours in each semester. Each theory paper shall have 75 hours and practical paper 60 hours. There shall be eight theory and two practical papers.

### **Examinations**

The examination shall comprise continuous internal assessment throughout the course period, followed by the university examinations at the end of the course. Candidates shall be required to register for the entire examinations at the first appearance. A candidate who does not pass the examination in any subject (a) shall be permitted to appear in such subject in the subsequent examinations. For theory internal Marks 20 and External Marks 55 shall be fixed and 25 marks internal 75 marks external for practical papers .

### **Schemes of Examination**

The scheme of examination shall be as follows: There shall be eight theory papers of 75 marks each and two practical of 100 marks each. The practical examination shall consist of Teaching, Demonstration and Viva-voce examination.

**The scheme shall be as Follows**

<b>Sl No.</b>	<b>Title of the papers</b>	<b>Exam Hours</b>	<b>Internal Marks</b>	<b>Uni. external Marks</b>	<b>Total Marks</b>
<b>I Semester</b>					
01	Anatomy & Physiology of Human Body	3	20	55	<b>75</b>
02.	Kinesiology and Biomechanics	3	20	55	<b>75</b>
03.	Principles of Exercise Therapy	3	20	55	<b>75</b>
04.	Physical Therapy Modalities	3	20	55	<b>75</b>
<b>II Semester</b>					
05.	Yoga therapy	3	20	55	<b>75</b>
06	Sports rehabilitation	3	20	55	<b>75</b>
07	Sports medicine	3	20	55	<b>75</b>
08	Health fitness and wellness	3	20	55	<b>75</b>
09	Practical – I –Demonstration of Exercise and Therapeutic Modalities	3	25	75	<b>100</b>
10	Practical – II –Teaching ability and Lesson plan	3	25	75	<b>100</b>
<b>Total marks</b>					<b>800</b>

### **Passing Minimum**

A candidate shall be declared to have passed in each paper if he/she secures not less than 50% of the prescribed maximum marks for continuous internal assessment and the University Examination. He/She shall be declared to have passed the whole examination and qualified for the P.G.Diploma if he/She passes in all the eight papers.

### **Classification of successful candidates**

Those who secure 60% and above of the maximum marks shall be declared to have passed First class. Those who secure 50% and above but below 60% shall be declared to have passed in Second Class.

### **Award of PG Diploma**

A Candidate shall be eligible for the award of the P.G. Diploma if he/She has passed all the examinations prescribed thereof.

## SEMESTER-I - PAPER – I PG DET -2007-08 ONWARDS

### ANATOMY & PHYSIOLOGY OF HUMAN BODY

#### Unit I:

Constructional units - cells - tissues - organs - systems frame work of human body - classification of bones - axial and appendicular selection and their functions.

#### Unit II:

Muscular system - - structure and functions of the muscular system.

#### Unit III:

Circulatory system - structure and function of the circulatory- system.  
Respiratory system - structure and function of the Respiratory system

#### Unit IV:

Joint - define - types of joint - location and action of the muscles at various joint - shoulder girdle shoulder joint, elbow joint- wrist joint hip joint knee joint, ankle joint, trunk, head and neck.

#### Unit V

Nervous system - structure and function digestive system – structure and functions.

#### Reference:

1. Anthony & Kothoff: Text Book of anatomy and Psychology C.V. Mosby & Co.,
2. Astran Pond K. Rodahl. 1986. "Text book of work physiology "New York : Mc. Grow - hill..
3. Evelyn C. Pearce (1986) Anatomy to Physiology fro Nurses. Sixteenth edition Oxford University Press Calcutta.
4. Edward L. Fox, Donald K. Mathews (1981) the Physiology Basis of physical Education and Athletics. CBS College publishing. Third Edition.
5. Essential Of physical Education
6. William E.Prentice, (1988) Rehabilitation Techniques in sports medicine, second edition Health south rehabilitation corporation , Brimingham, Alabama
7. W.C.Brown Devries , (1986) Physiology of exercise for physical education and athletics , Dubuque, iowa
8. Rasch P.(1989) Kinesiology and applied anatomy . Philadelphia , Lea & Febiger.

9. Corbin C. Noble. L. (1985) Flexibility: a major component of physical fitness exercise programs . American alliance for health and physical education .

## **SEMESTER-I - PAPER – II PG DET -2007-08 ONWARDS KINESIOLOGY AND BIOMECHANICS**

### **Unit I:**

Definition and meaning of kinesiology - aims and objective of kinesiology - need and importance of knowledge of kinesiology for the exercise therapist - functions and classification of human skeleton - articulations structure and classification - structure and functions of muscles - movements around the joints - two joint muscles - ankle of pull.

### **Unit II :**

Muscles of upper extremity - the shoulder region - trapeziums - prepectorails major - deltoid - biceps brachi - triceps - teres major - latissimus dorsi - supresinatus and infra-spinatus. Muscles of the elbow - branchialis - brachio- radioils - ancones.

### **Unit III :**

Muscles of the lower extremity - hip joint - retus fencris - sartorus - hamstring groups - Biceps femoris, semi membranous semi tendinous gluteus maximums, gluteus minimus and medius - knee joint muscles quadriceps group rectus femoris vastus medialis, vastus laterallis and vastus inter medius muscles of the ankle joint gastrocinimus soleus, tibiralis posterior and tibalis anterior, muscles of the trunk rectus abdominus, internal oblique and external oblique errector spine.

### **Unit IV:**

Muscular analysis of Fundamental Movements – Walking, Running Throwing, Catching, Pulling, Pushing, Striking, Hanging.

### **UNIT - V**

Joint flexibility : Factors influencing joint flexibility - Flexibility and injuries – Techniques for increasing joint flexibility –Active and Passsive stretching-Ballistic Stretching –PNF Stretching –Measuring joint range of motion.

**References:**

1. Brower, Marion. R " Efficiency of human movement. Philadelphin. W.B. Saundersco., 1996.
2. Cooper, John, M. and R.B. class coul kinesiology st louis. C.V. Mospy C., 1963.
3. Wells, Kathorine F and kadhryn lulten, kinesiology scientific basis of human motion ( 6<sup>th</sup> ed) philodelphin, saunder college.
4. Time – Life Books, Amsterdam . (1988) The body in motion, Agility and Co-ordination.
5. Challes H. Shea David L. Wright(1997) An Introduction to Human Movement.
6. Shaw. D. (2003) Sports Biomechanics. Chawia Offset printer Delhi.
7. Susan I. Hall(1953) Basic Biomechanics.
8. McClure Anderson(2003) Biomechanics or Human Motion.
9. Dhananjay Shaw .Dr. (2000) Mechanical Basis of Biomechanics.
- 10.Uppal Kumar Panda(2004) Biomechanics in Physical Education and Exercise science.
- 11.W.C.Brown Devries , (1986) Physiology of exercise for physical education and athletics , Dubuque, iowa
- 12.Rasch P.(1989) Kinesiology and applied anatomy . Philadelphia , Lea & Febiger.

## SEMESTER-I - PAPER – III PG DET -2007-08 ONWARDS

### PRINCIPLES OF EXERCISE THERAPY

#### Unit I:

Aims and principles of therapeutic exercise, Pre-Participation health screening, starting positions muscle work, effects and uses (standing, kneeling, sitting, lying hanging) role of exercise in the modern society

#### Unit II:

Types of movement - active movement - classification (free exercise, assisted exercise, resisted exercise and resisted exercise) passive - movements - classification relaxed passive movement -passive manual mobilization techniques.

#### Unit III:

Techniques of mobilizing joints, joints of the foot - ankle joint - knee joint - hip joint - joint of the pelvis. shoulder girdle - shoulder joint elbow joint radio - ulnar joint - joint of the hand - joints of the vertebral column.

#### Unit IV:

Technique of strengthening the muscles, Types of muscle work - range of muscle work - types of exercise used to strengthen muscles resistance exercise programme for the muscles of the foot. (invertors and evertors) muscles of the ankle (Plantar flexes and dorsiflexors) muscles of knee (flexor and extensors) muscles of the hip (hip extensors, flexors, abductors, adductors, medial rotators, lateral rotators) muscles of the pelvic floor - muscles of the trunk - muscles of the extensors and flexors of the spine - muscles of the shoulder girdle -muscles of the shoulder flexors, and extensors - rotators muscles of the elbow flexors and extensors - muscles of the spinners and pronators - muscles of the wrist extensions and flexors - muscles of the flexors and extensors of the head and neck.



**Unit V:**

Posture: meaning and values of good posture causes of poor posture -posture examinations - New York state posture test - iowa state posture test - proper use of body in sitting standing, lifting, pushing and walking.

**Reference:**

1. K.Chandra shekar "Sports Physiotherapy"
2. Christopher M. Norris (1993) Sports injuries Diagnosis and Management for physiotherapists.
3. Jeff Ray K. Riffer(1985) Sports and Recreational injuries
4. Dr. R. G. Venkata Reddy(2005). Sports injuries prevention and control.
5. David Hpesrin(1999) Third Edition. The Injured Athlete.
6. Vivian Grisogono, John Murray (1984) sports injuries A self –help guide.
7. Mountcastle VS: (1980) Medical physiology , ed St Louis ,Mosby.
8. Lephart Sm Fu Fh , Irrang Jj (1991). Et al: Proprioceptive characteristics of trained and untrained college females . Med Sci Sports Exerc Supplement 23.
9. Lephart Sm. (1993)Functional Rehabilitation , Baltimore. Wiliams & wilkins Pub.
- 10.Gray P.(1954)The microchemist 's formality and guide , New york . Pub .

**SEMESTER-I - PAPER – IV PG DET -2007-08 ONWARDS  
PHYSICAL THERAPY MODALITIES**

**Unit I:**

Electrotherapy:- electricity and conductor elector - magnetic condition - current from ac main supply - dangers with electrical instruments use of the constant current - uses of high and low frequency currents.

**Unit II :**

Hydrotherapy: Cryotherapy and its uses end modalities - thermotherapy and its use and modalities (hot - packs, contrast bath, hot water fomentation, whirlpool, bath steam bath)

**Unit III:**

Actino therapy : Physics of heat and light and radiant energy - infra red rays - ultraviolet rays - sources - effects and uses - techniques of infra red and ultra violet radiation

**Unit IV:**

Short wave diathermy – ultrasound - Tens – inferential therapy – and its uses and applications .

**Unit V :**

Massage therapy - brief history of massage - points to be considerable in giving massage - classification of the manipulation. Used in massage - stroking manipulation pressure - manipulation - percussion manipulation - vibrations and shaking - physiological effects of general massage on different systems of the body.

**Reference:**

1. Shekar K.C(2005) Sports Physiotherapy . Khel Sanitya Kendra Published.
2. Chandra Shekar K. (2003) Sports Physiotherapy
3. Randall L. Brddon(2000) physical medicine and Rehabilitation second edition.
4. Maureen E Neistadt, Elizabeth Biesedell Crepeaur (1998) Willard & Spackman's Occupational therapy. Ninth Edition.
5. Daniel N. Kulund(1998). The Injured Athlete second edition.
6. Basmajin J. (1978). Therapeutic exercise , Balitomore, Wilkins & Wilson Pub .
7. Kisner, C.Colby (1985) , Therapeutic exercise foundations and techniques , Philadelphia , FA Davis pub .

8. Paris S. (1979) The spine :Course note book , Atlanta , Institute press.
9. Stoddard A. (1969) Manual of osteopathic practice. London , Hutchin pub .
- 10.Maitland , (19) Extremity Manipulation , Butter worth Pub.
11. Maitland , (19) Vertebral Manipulation , Butter worth Pub .

**SEMESTER-II - PAPER – V PG DET -2007-08 ONWARDS**

**YOGA THERAPY**

**Unit - I**

Meaning and importance of yoga therapy – Different kinds of yogic practices – limitation of yoga as therapy – Yogic concept of human body – Annamaya Kosha – Pranayama Kosha – Anomaya Kosha – Vijnanamaya Kosha – Anandamaya Kosha – Principles of Yogic Management .

**Unit - II**

Basic principles of yogic therapy (via) Purification of mind and body , Correct Psychological attitudes, Psycho psychological reconditioning , Diet regulation -mental Tranquity – Need for correct diagnosis – Patient – Education and follow up measures: Yogic therapy : yoga Asanas - Pranayama -Physical exercise –Diet-Regulation of habit and conduct massage –mimetic treatment.

**Unit - III**

Nature of the Aliment –Breathing Training - Treatment –Treatment of the following disorders –Hypertension-Heart Disorder –Asthma, Diabetes- Obesity –Rheumatism –Muscular Atrophy – Polio –Tonsillitis

**Unit – IV**

Nature –Breathing –Treatment (Yogic Practice ) of the following. Tuberculosis (TB) – Indigestion-Paralysis –Liver and Kidney Disorder - Short sight –seminal disorder-ulcer-colitis.

**Unit – V**

Therapeutic application of yoga for executive jobs: Stress and tension- Anxiety –Depression –Frustration-Aggression-Anger and hostility –fatigue

and nervousness. Role of yoga in the prevention and rehabilitation of sports injuries.

**Reference:**

1. Grimbsy O. (1981), Fundamentals of Manual therapy: Course work book , Norway , Sorlands Fysikalske Institute .
2. Sri Ananda: The Complete Book of Yoga Harmony of Body and Mind (Orient Paper Backs: Vision Book Pvt. Ltd., 1982)
3. Moorthy A.M. (2004). Yoga Therapy Teachers Publishing House.
4. Kuvalyanadna swami & S.L. Vinekar " Yogic Therapy" its basic principles  
methods central health education & bureau, Govt. of India,New delhi.
5. Stress disorders and its management by yoga: by Dr.K.N.Udupa, Mothilal banarsi dass publishers pvt. Ltd, Delhi, 1980 (second edition)
6. Yoga and medicine: by Steven F. Brena. Penguin books, New York, 1972,The art of survival: a guide to yoga
7. Collected papers on yoga- Edited by Swami Digambarii, Kaivalyadhamam, Lonavala, 1975.
8. Bhole, M.V., Karambelkar, P.V. and Gharote , M.L (1970) “ effect of yoga practices on vital capacity”- A preliminary communication , ind. Jour.chest.dos.,Vol.XII,
9. Bhole, M.V., Karambelkar, P.V. and Gharote , M.L (1970) “ effect of yoga training on vital capacity” and Breath holding time”, Yoga Mimamsa , Vol, XII,3
10. Balasubramaniam, B and pansare , M.S(1986): “Effect of yoga on cardiovascular efficiency”, Unpublished work, Paper read in state conf. of sports medicine, Nagpur, Feb.1986 .

**SEMESTER-II - PAPER – VI PG DET -2007-08 ONWARDS**

**THERAPEUTIC EXERCISES AND SPORTS REHABILITATION**

**UNIT:- I**

Meaning and Definition of therapeutic exercise-role of therapeutic Exercise in the modern society-types of therapeutic exercise Passive, active and resistive – principles of therapeutic exercise. The pedagogy of therapeutic exercises- requirement of for successful teaching – factors influencing the intensity of therapeutic exercises- teaching of cases- procedure in the conduct of therapeutic exercises.

**UNIT- II**

Fundamental Pathological condition and prescription of exercises for, shoulder Girdle-shoulder joint-mid region of the spine-thorax-cervical spine-occipital – pelvis-lumbar region of the spine-Hip joint – knee –Ankle Joint –foot.

**UNIT:- III**

Posture-meaning and value of good posture-causes of poor posture- postural Examination –proper use of the body in sitting, standing and walking.

**UNIT :- IV**

Description – symptoms-Diagnosis – Prescription of exercise for – forward head –Round shoulders –Kyphosis –Thoracic Kyphosis-Lordosis – Scoliosis-correction of the Lumbar curve-Pelvic inclination- relieve Sacroiliac strains – Knock knee-bow leg – flat foot.

## **UNIT:- V**

Meaning and definition of Physical rehabilitation – Need and scope of Physical

Rehabilitation. - Technique of Physical rehabilitation. Equipments required for rehabilitation – Traction unit, sliding seat-shoulder wheel. Select in – maintenance –safety and adaptation of equipments.

### **Reference:**

1. David Hpesrin(1999) Third Edition. The Injured Athlete.
2. Michael Hurson(2001) Third Edition. Sports Injuries recognition & Management.
3. Dr. R. G. Venkata Reddy(2005). Sports injuries prevention and control.
4. Christopher M. Norris (1993) Sports injuries Diagnosis and Management for physiotherapists.
5. Jeffrey K. Riffer(1985) Sports and Recreational injuries.
6. Vivian Grisogono, John Murray (1984) sports injuries A self –help guide.
7. Mc.Gurdly, J.H., The Physiology of Exercise, Philadelphia, Lea & Febiger, 1928.
8. Huxley, H.E.: Physical Education Handbook, Englewood Cliffs, N.J.: Prentice Hall, Inc., 1971.
9. Grimbsy O. (1981), Fundamentals of Manual therapy: Course work book , Norway , Sorlands Fysikalske Institute .
10. Daniel N. Kulund(1998). The Injured Athlete second edition
11. Kisner, C.Colby (1985) , Therapeautic exercise foundations and techniques , Philadelphia , FA Davis pub .
12. Paris S. (1979) Mobilization of the spine , phys ther :9:988.



**SEMESTER-II - PAPER – VII PG DET -2007-08 ONWARDS**

**SPORTS MEDICINE**

**Unit I:**

Definition of and meaning of sports injuries - need and importance of knowledge of sports injuries - prevention of injuries during exercise and training . common types of injuries - skin injuries, bone injuries ,muscle injuries, joint injuries nerve injuries and internal injuries and inflammations common injuries to the head and face and to the spin.

**Unit II:**

Common injuries of the foot and ankle region and rehabilitation exercise programme for the foot and ankle joint.

**Unit III :**

Common injuries of the hip thigh and knee region and rehabilitation exercise programme for the knee and hip joint.

**Unit IV:**

Common injuries of the shoulder girdle and shoulder joint and rehabilitation exercise programme for the shoulder girdle and the shoulder joint.

**Unit V :**

Common injuries of the elbow forearm, wrist and hand and rehabilitation exercise programme for the elbow forearm wrist and hand.

**Reference:**

1. Starauess. R.H. (1984) Sports medicine W.B. Saundas Co., Philadelphia.
2. Williams J.G.P. and Sperch P.N. Sports Medicine Edward Arnold London. 1976.
3. Randall Z. Braddom(2000) Physical Medicine and Rehabilitation, Second edition.
4. Ryan Allan J.Predi All Man Sports Medicine Academic press , London 1974.
5. Chandra Shekar K. (2003) Sports Physiotherapy
6. Randall L. Brddon(2000) physical medicine and Rehabilitation second edition.
7. Jensen, C.R. and Schultz G.W., Applied Kinesiology, New York, McGraw Hill Book Company 1970.
8. Mc.Gurdly, J.H., The Physiology of Exercise, Philadelphia, Lea & Febiger, 1928.
9. Hawley,G. The Kinsiology of corrective Exercise. Philadelphia: Lea and Febiger, 1937
- 10) Cookson J. Kent B. Orthopdic manual therapy : an over view . The extremities ,Phys ther association 59:136. 1979

## **SEMESTER-II - PAPER – VIII PG DET -2007-08 ONWARDS**

### **HEALTH FITNESS AND WELLNESS**

#### **Unit I:**

Introduction to physical fitness and wellness definition and meaning of physical fitness - brief historical relevant of exercise and physical fitness future changes, strategies for increasing physical fitness in India - values of physical fitness relationship between fitness, health and wellness.

#### **Unit II:**

Nutrition and Diet for Health, care - Definition of the terms - nutrients, Diet, food balance diet nutritional status , nutritional assessment in mal nutrition and Dietitian - function of nutrition in the body nutrition and dietary manipulations need and importance of carbohydrate, protein and fat during conditioning and training and high level performance.

#### **Unit III:**

Physiological response to physical activity and assessment techniques - effect of Physical activity on various systems of the body - health benefits of physical activity - assessment of cardio-respiratory fitness, musculoskeletal fitness, flexibility and body composition and Individual exercise prescription.

#### **Unit IV :**

Exercise and aging - physical activity and aging, physiological changes with aging - exercise prescription for credo - respiration fitness , musculoskeletal fitness. Flexibility and weight control. Physical activity and life expectancy - individual exercise prescription coronary heart disease, hypertension, diabetes asthma, obesity and arthritis and other disabilities harmful effects of too much exercise.

**Unit V :**

Promotion of health and prevention disease - definition, meaning and factors that influence health - guiding principles of health and health education - communicable diseases and their prevention - communicable diseases and their prevention and therapeutic aspects - chronic diseases like hypertension risk factors of coronary heart disease Asthma, Diabets and obesity and their prevention and management environmental and occupational hazards and first - Aid.

**Reference:**

1. Edward T. Howley B. Dov Franks(1986) Health Fitness instructor's Handbook second edition.
2. Gordon Edlin, Eric Golanty ,. Kelli McCormack Brown(1997) Essentials for Health and Wellness. Jones and Bartlett Publishers.
3. Anita Bean(1998) Food for Fitness.
4. Uppal . A.K. (2004) Physical Fitness and Wellness Friends publications India.
5. Stephen I. Bull (1999) Adherence issues in sports and exercise. British Library Cataloguing in Publication.
6. Edward L. Fox, Donald K. Mathews(1981) The Physiological Basis of Physical Education Athletics third Edition CBS College Publishing.
7. Aidely, D.J., Physical Activities and Recreational Programmes, Cambridge: Cambridge University Press, 1971.
8. Huxley, H.E.: Physical Education Handbook, Englewood Cliffs, N.J.: Prentice Hall, Inc., 1971.
9. Bucher, C.A., Foundations of Physical Education, Saint Louis, C.V.Mosby Company, 1974.
10. Barrow, H.M., Man and His Movement: Principles of his Physical Education, Philiadelphia, Lea & Febiger, 1973.
11. Schiotz .E. Criyax J. (1978), Manipulation past and present , London , William Heinermann Medical books pub .

## **SEMESTER-II – PG DET - 2007-08 ONWARDS**

### **PRACTICAL - I**

#### **UNIT -I**

1. Demonstration of massage techniques
2. First aid treatments for various injuries

#### **UNIT - II**

1. Demonstration of uses of various equipments:
2. Traction unit
3. Sliding seat
4. Shoulder wheel
5. Infra - red
6. Ultra violet
7. Short wave diathermy
8. Wax bath

#### **UNIT- III**

1. Bandaging
2. Circular, spiral, spiral reverse, Figure of eight etc.

#### **UNIT –IV**

1. Cryo therapy

#### **UNIT- V**

1. Thermo therapy

#### **Reference Books**

- 1) Steven Roy and Richard Irvin, Sports medicine prevention, evaluation management and rehabilitation; New Jersey. Prentice Hall inc. 1983.
- 2) John. H.C Colson and Frank W. Colson; Progressive exercises therapy in rehabilitation and physical education; Bombay, K.M. Varghese Company, 1983
- 3) David Sutherland Muckle: An outline of fractures and dislocations, Bombay, K.M. Varghese Company 1982.

**SEMESTER-II – PG DET - 2007-08 ONWARDS  
PRACTICAL - II**

**UNIT:- I**

Fitness Evaluation: physical activity attitude assessment – assessing Health – disease Risk factors – calories expended in life style physical activities – nutritional analysis of various diet.

**UNIT :- II**

Calculating Target Heart rates for moderate Physical activities using percentage of Heart Rate Reserve Method – Evaluating Cardiovascular fitness.

**UNIT :-III**

Evaluating Flexibility – planning and lodging stretching exercises. Evaluating muscle strength – Evaluating muscular endurance – planning and logging muscle fitness exercises free weights or resistance machines and calisthenics care of the back and neck.

**UNIT :-IV**

Basic principles and methods relevant to practice teaching of Exercise Therapy activities.

**UNIT :-V**

Preparation by the students systematic lesson plans for the physical activities/exercises taught during the course and daily maintenance of a journal with plans for lesson. Actual conduct of five Exercise Therapy lessons in the class and another five lessons in Exercise Therapy centers under proper supervision and competent evaluation.

**Reference:**

1. Batman P. and Van Capelle M.(1995) The Exercise Guide to Resistance training . FITAU publications. Australia.
2. Fleck S.J.and Kraemer W.J. (1997) Designing Resistance Training Programs. Second Edition. Human Kinetics,
3. Dick, Frank W. (1980) sports Training Principles. London Lepus Books

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