

BHARATHIDASAN UNIVERSITY

(Accredited with A+ Grade by NAAC in the Third Cycle)

TIRUCHIRAPPALLI - 620 024

DEPARTMENT OF PHYSICAL EDUCATION & YOGA



Post Graduate Diploma in Fitness Management (PGDFM)

Under CBCS with effect from the academic year 2021-22 onwards

REGULATIONS, SCHEME OF EXAMINATIONS AND SYLLABUS



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P.G. Diploma in Fitness Management (PGDFM)

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REGULATIONS, SCHEME OF EXAMINATIONS AND SYLLABUS

ELIGIBILITY

Candidate for admission to the P.G. Diploma in Fitness Management should have passed the bachelors degree examinations from a recognized university or accepted by the syndicate as equivalent there to subject to such conditions as may be prescribed thereof. The applicant should enjoy an average level of health and be free from serious illness or diseases.

DURATION OF THE COURSE

The course is for a period of one year annual pattern.

PERSONEL CONTACT PROGRAMME

Personal contact programme will be fixed as for with other P.G. Diploma regulations fixed by the Department of Physical Education.

SCHEME OF EXAMINATION

The examination shall be conducted on Non-semester basis. The scheme of examination shall be as follows. There shall be four theory papers and one practical paper of 100 marks each. The practical examination shall consist of Demonstration, Teaching and Viva-voce examination.

PASSING MINIMUM

The passing minimum be 50% of maximum marks in each subject.

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 P.G. DIPLOMA

A candidate shall to eligible for the award of the P.G. Diploma if he/she has passed of the examinations prescribed thereof.

COURSE STRUCTURE

Paper	Course title	Subject code	Credit	Exam hours	Internal	External	Total
CC-I	Fitness and Wellness	21PGDFM1	5	3	40	60	100
CC-II	Introduction to the Human body structure and functions	21PGDFM2	5	3	40	60	100
CC-III	Methodology of Fitness training	21PGDFM3	5	3	40	60	100
CC-IV	Facility Management	21PGDFM4	5	3	40	60	100
CP-I	Fitness practical and teaching practice	21PGDFMP	5	3	40	60	100

Programme Outcomes

- The Learners thoughtfully trained in their choice sub-fields of Physical Education **possess / practice / propagate** relevant **Work / Job /Career Competences**.
- The Learners in the chosen sub-fields of Physical Education exhibit characters of **Seasoned-Spirited** citizens respecting the **Community** wellbeing.

Programme Specific Outcomes

- To integrate the study of childhood, social context of physical fitness.
- To update the subject knowledge, pedagogical knowledge and communication skills.
- To attain the skills and knowledge on competitive exams, national and state level eligible test and other equivalent competitive exam in the field of fitness and physical education.
- The programme comprises of theory as well as practical courses and teaching practice.
- To learn the fundamental movements and principles of training methods.
- The programme gives practical exposure to the various fitness training.
- Adequate training will be given in teaching fitness.
- Capability of getting employment as fitness trainers and coaches in Private institutions and organisation.



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P.G. Diploma in Fitness Management (PGDFM)

CC-I

Fitness and Wellness (21PGDFM1)

Credit: 5

Objectives

- To study the fundamental concepts of wellness, health and fitness, & its types.
- To provide basic knowledge on principles of sports training and to educate on exercise & diet.

Unit-I

Meaning & Definition: Fitness, Physical fitness – General & Specific fitness – Need & importance of Physical fitness. Meaning and definition of Wellness and Health. Dimensions of fitness (physical and mental). Relationship between fitness, wellness and health. WHO definition of health. Dimension of health. Health problems. Health Education. Maintaining health – diet, role of science and role of public health. Occupational health and safety. Health policy, Health.

Unit-II

Types of Physical fitness: 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) — Physical fitness assessment - Field tests & Laboratory tests. Qualities and Qualifications needs for Fitness instructor.

Unit-III

Meaning: Exercise, Training, Conditioning. Training load – Adaptation – Recovery– Warm-up – Cool down - Repetition – Set – Bout –Volume – Intensity – Density. Principles of Sports training (Progressive, Continuity, Planned & Systematic, Cyclicity). Basic method of Conditioning: Continuous (slow, fast) – Interval (intensive, extensive) – Repetition methods. Types of Contraction: Isometric (Concentric & Eccentric), Isotonic, and Isokinetic. Overload. Injuries: Contusion & Strains. Height, Weight, Heart rate and BMI

Unit-IV

Walking – Jogging – Running - Spot running – Bounding strides – High knee action – Fast arms - Hopping – Skipping - Stepping on the bench - Side stepping – Sand running, Uphill running -Swimming – Cycling - Free hand exercises – Exercises with partner - Callisthenics – Aerobics. Flexibility exercises. Stretching: Neck, Shoulder, Biceps, Triceps, Waist, Gluteal, Quadriceps, Inner thigh, Hamstring and Calf. Weight training – Resistance training - Plyometric, Swiss ball exercise, Medicine ball exercise, Band exercise, Ladder exercise and Wall bar exercise.

Unit-V

Functions of food – composition of food: Carbohydrate, proteins – fats – Vitamins – Minerals – Water – Fast food – Vegetarian Diet – Balance diet – Nutritive values of food stuffs. Nutrition during Training – Dietary allowance and daily values. Food guide pyramid. Interview the client – History & Medical clearance. Selecting right equipment. Safety consideration. Role of fitness instructor.

REFERENCES

- Anderson, Bob., Pearl, Bill., and Burke, Edmund R., (2001). *Getting in Shape Workout Programs for Men & Women*. Mumbai: Jaico Publishing House.
- Baechle, Thomas. R, & Earle, Roger. W., (2000). *Essentials of Strength Training and Conditioning*. 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.
- 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.

Course Outcomes

- Understand the fundamental concepts of fitness and physical fitness.
- Acquired the knowledge on types of fitness.
- Given clear idea about wellness and health.
- Studied the principles of sports training.
- Given fair idea about injuries.
- Learned the various technical terms used in fitness and wellness.
- Attained the knowledge on callisthenics, aerobics and weight training.
- Provided the basic knowledge on balance diet.



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Credit:5

CC-II Introduction to the Human body structure and functions (21PGDFM2)

Objectives

- To provide basic knowledge about human anatomy and physiology.
- To study and understand the various systems in the human body and their functions.

UNIT- I

Meaning & definition of Anatomy and Physiology – Need and importance of knowledge of Anatomy & Physiology in Fitness personals - Various Systems and Organs of the body - Structure and function of Cells - Structure and function of various types of tissues. Skeletal system. Classification of bones (regular, irregular & triangular) - Classification of joints – Ball and socket joint, Hinge joint, Gliding joint, pivot joint, saddle joint, condyloid joint. Influences of training / exercises / conditioning on Skeletal Systems.

UNIT- II

Respiratory System – Structure and Function of Lungs – Gas Exchange, Vital Capacity-Effect of training / exercises / conditioning on Cardio-respiratory Systems.Circulatory System – Heart Structure and Functions – Cardiac Cycle, Cardiac Output. Influences of training / exercises / conditioning on Circulatory System.

UNIT- III

Digestive System - Structure and Functions - Digestive Track- Mouth, Salivary Glands, Pharynx, Esophagus, Stomach, Pancreases, Liver, Gall Bladder, Small Intestine and Large intestine. Structure and function – skin and kidneys.Impact of exercises on Digestive System.

UNIT- IV

Endocrine System –Endocrine Glands- Structure and functions of endocrine glands – Pineal, Pituitary, Thyroid, Parathyroid, Thymus, Pancreas, and Adrenal &Gonades (Sex Glands) – Impact of fitness training on Endocrine Glands.Influences of exercises on Endocrine Systems.

UNIT- V

Nervous System – Neuron - Central Nervous System (CNS): Brain and Spinal Cord – Peripheral Nervous System (PNS): Cranial Nerves and Spinal Nerves – Autonomic Nervous System (ANS): Sympathetic Division and Parasympathetic Division. Influences of exercises on Nervous System. Immune system: Components organs of immune system and functions of immune system. Reproductive system: Anatomy of male and female reproductive system.

REFERENCE

Anderson .T. Mc. Clerg, (1961).*Human Kinetics and Analyzing Body Movements*, London: William Heinman Medical Books Ltd.
Davis, D.V. (1989). *Gray's Anatomy*, London: Longmans Green & Co. Ltd.
Murugesh, N, (2006). *Basic Anatomy and Physiology*, Madurai: Sathya Publishers.
Pearce, Evelyn B. (1979) *Anatomy and physiology for Nurses*, London: Faber and Faber Ltd.
Prarce, J.W. (1984). *Anatomy for students and Teachers of Physical Education*, London: Edward Arnold & Co.

Course Outcomes

- Provided basic knowledge about the human anatomy and physiology.
- Learned the need and importance of anatomy and physiology in the field of Physical Education.
- Acquired the knowledge about various systems and organs of the body.
- Gain knowledge on Skeletal and Cardio- respiratory systems.
- Attaining the basic concept of Digestive and Endocrine systems.
- Learned the fundamentals of Nervous Immune and Reproductive systems.
- Studied the various systems in the human body and their functions.
- Attaining the basic concept of impact of exercises / training on various systems.



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P.G. Diploma in Fitness Management (PGDFM)

CC-III

Methodology of Fitness training (21PGDFM3)

Credit: 5

Objectives

- To study and understand the various principles and methods of sports training.
- To provide the basic knowledge about periodisation.

UNIT – I

Training : Meaning of training – Basic Principles of training – The FITT Principles – frequency – intensity – time – type. The five 'R's. Principles: Range of motion – Resistance – Repetitions – Rest – Recovery. Basic principles in training – Specificity – overload principal (load Progression) – Reversibility. Points on Fitness and Training: Medical check-up, selection of equipment. Breathing regulation selection of right exercise – over training – muscle bounders diet habits.

UNIT – II

Type of Training Methods : Weight training – Circuit training – General training – specific circuit internal training – Anaerobic training intensity – Frequency – Density. Fartlek training – plyometric training – Cross training concurrent training of various combinations – single bout and multiple bout exercise training – Aerobic training – Intensity - Duration – Frequency type of exercise.

UNIT – III

Components of General Fitness and Specific fitness – Warming up – cool down -conditioning exercise – Health habits-Rest – Recreational Needs – Periodisation in training – Single Periodisation – Double periodisation and multiple Periodisation. Pre-season, completion season-off season-Factors Determining Season-preparation of training schedules: Long Term plan-Short term plan – Macro Cycle – Meso Cycle and Micro Cycle.

UNIT – IV

Theory and practice of strength development: - Structure – Maximum strength – Elastic strength – Strength endurance – Absolute strength – relative strength – Isotonic – Isometric - Isokinetic training. Designing Weight training Programme: Development of strength for static muscle activity – Development of strength for Dynamic muscular activity – Development of strength by eccentric activity – Development of strength by Ballistic activities – Development of maximum strength – Development of Elastic strength – Development of strength endurance – Unit construction for strength – Development – Micro cycle construction.

UNIT – V

Flexibility – types of flexibility – benefits of flexibility. Modern Resistance Training Systems: Constant resistance – Variable resistance – Accommodating resistance. Modern Techniques of over load: Blitzing – forced repetitions – cheating – Negative repetition – pre exhaustion – Pyramid training - Super set – Compound repetition – Triple drop. Cooper test, Beep test, Yo – Yo Endurance test, Yo – Yo intermittent endurance test, Yo – Yo intermittent recovery test, Pacer test, Legar shuttle test, Multi-stage fitness test.

REFERENCE

- Batman p .and Van Capelle M.(1995) *The Exercise Guide to Resistance training* FITAU Publications. Australia.
- Bezi, G.et.al, (1973) "Mitochondrial Enzymatic adaption of Skeletal muscle to endurance training" *J.Appl.Phyiology*. 34.107.
- Buskirk, E.R. and H.L Taylor (1957) "Maximal Oxygen intake and its relationship to body composition", *J.Applied Physiology*, 11:72-78.
- Buskrik, E.R.P.F Lampietro and D.E Base, (1958) "Work Performance after Dehydration: Effects of Physical Conditioning and Heat Acclimatization". *J. Appl. Physiology* . 12: 189-194.
- Dick, Frank W. (1980) *Sports Training Principles*. London. Lepus Books
- Fleck S.J. and Kramer W.J. (1997) *Designing Resistance Training programs* Second Edition. Human Kinetics.

Course Outcomes

- Provided the basic knowledge about training and its principles.
- Attained the fundamental knowledge of types of training methods.
- Studied the components of general and specific fitness.
- Preparation of training schedule of both long and short terms was learned
- Given fair idea about periodisation and its types.
- Provided the theory and practice of strength and flexibility development.
- Learned the modern technique of overload.
- Gained Knowledge about fitness assessment aspects.



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Credit:5

CC-IV Facility Management & Weight management (18PGDFM4)

Objectives

- To acquire knowledge infrastructure facilities and maintenance of facilities.
- To provide the basic knowledge about weight management.

UNIT - I

Developing Infrastructure facilities – fitness center: Construction of fitness center size – measurements – facilities of floor exercise – aerobics – swimming pools – indoor and outdoor facilities – facilities for fitness evaluation and medical aid – Audiovisual facilities – Reception room – facilities showers and toilet.

UNIT - II

Maintenance of facilities – Multi gym - weight training equipments- weight plates – Dumbbells – Barbells – Bench press – lat pull down – Low pulley – Shoulder press – Triceps extension – Peck duck – lateral raise – leg extension – leg curl – Hip adductor – Hip abductor – Roman bench – Smith machines- Abdominal conditioner – Aerobic – Indoor – Outdoor – Swimming pools – Electrical machines – Exercise bikes – Treadmill – Hydraulic machines – Criteria to be followed in the selection of equipments – Body wraps – Elastic straps – Vibrating machines.

UNIT – III

Body Composition and Weight management: Over weight – Obese – Methods of determining, estimated percent body fat - Skin fold thickness – Body mass index – Waist to Hip ratio – Hydrostatic weighting - Girth measurement technique – Electrical Impedance method.

UNIT – IV

Weight control fads and fallacies – Body warps – Diet pills and Aids – Diet programming – Fasting. Methods of weight management: Principles of weight management and fat control: Diet and fat control - physical activities – Combination of physical activity and diet control – Estimating diet daily caloric requirement.

UNIT - V

Behaviour modification – Record keeping – Developing a support system – Reward system - Avoid self defeating behaviours – Committed lifelong maintenance. Swiss ball exercise, Medicine ball exercise, Band exercise, Ladder exercise and Wall bar exercise. Core Exercises. Bulgarian bag, Kettlebell, Theraband exercises, stair climber, colour band, Medicine ball circuit. Bull worker. Cone drills

REFERENCE

- Edward T. Howley B. Dov Franks (1986) *Health Fitness instructor's Handbook* second edition.
- Howley. E.T and Franks B.D. (1997) *Health Fitness Instructor's handbook*. Third Edition. Champaign Illinois: Human kinetics,
- Lindle J. (1997) *Aquatic Fitness Professional Manual*. Florida: Aquatic Exercise Association.
- Pyke F.S. (1991) *Better Coaching – Advanced Coach's Manual*. Australian Coaching Council.
- Steven Roy and Richard Irvin, (1983) *Sports medicine prevention, evaluation management and rehabilitation*; New Jersey. Prentice Hall inc..
- Thomas D. Fathey Gayle Hutchinson, (1992) *Weight training for women*. California: Mayfield publishing company.

Course Outcomes

- Studied the development of infrastructural facilities.
- The maintenance of facilities was learned.
- Provided knowledge about the body composition and weight management.
- Created awareness on body mass index.
- Provided basic knowledge about the methods of weight management.
- Given fair idea about diet management.
- Studied the concept of behaviour modification and support system.
- Gain knowledge of training equipment.



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Credit:5

CP-I Fitness practical and teaching practice (21PGDFMP)

Objectives

- To acquire basic knowledge about exercises.
- To provide practical exposure for exercises.

UNIT -I CALISTHENICS / FREE EXERCISES

Arm Swinging – Forward – downward – Side wards and circling backward – Trunk bending forward & backward – Leg-(Hands on hips) Hopping with leg swinging sideways – Arm circles with hops — Jumping jack – Prone alternating arm and leg raises – Prone alternating arm raises – Pelvic raises – Squat thrusts – Running in place –Knee push – ups Dips from bench –Sit – ups – Leg rises – Trunk curl – ups –Trunk twister – Trunk side bends – Trunk raises – Half squats – Squat jumps – Inner thigh lift – Knee hug.

UNIT – II STRETCHING EXERCISES

Heel cord stretch – Adductor stretch – Hamstring stretch – Quadriceps stretch – Pectorals stretch –lower back stretch – Upper back stretch – Triceps stretch – Deltoid stretch – Internal rotation stretch (Shoulder) – External rotation stretch (shoulder) – Piriformis stretch – Iliopsovas stretch – Upper calf stretch – Lower calf stretch –Forearm and wrist stretch –Legs apart seated hamstring stretches –Bicep stretch – gluteus stretch – abdomen stretch – oblique stretch.

UNIT – III A) BARBELL EXERCISES

Shoulder press – Bench press – Arm curl – Reverse curl – Wrist curl – Wrist roll - Upright rowing – Bent over rowing – Bent arm pullover – Triceps extension – Good morning – Trunk twist – Half squat – Heel raise – Dead lift – Hack squat – Side bends – shoulder press.

B) DUMBBELL EXERCISES Shoulder press – One arm rows – Dumbbell fly – Lunges with dumbbells – Squats – Dumbbell curl – Triceps extension – Standing calf raise with dumbbell – Dumbbell laterals – Wrist curl – Supination – Pronation – Inward rotation of the shoulder (rotator cuff) - Outward rotation of the shoulder – Shoulder shrug – front raise – lateral raise.

UNIT – IV WEIGHT MACHINES

Lat pull down – Low pulley – Peck deck – Lateral raise – Bench press – Shoulder press – Leg curl – Leg extension – Leg press – Abdominal crunch – Hyper extension – Hip adductor – Hip abductor – Hack squat – Half squat – Roman Bench – Abdominal conditioner – Dipping – Chinning – Leg raise.

UNIT – V A) AEROBIC TRAINING EQUIPMENTS

Treadmill (Motorised) – Stationary Bicycle – Stepper – Rowing machine – Exercise cycle – Double burner – Manual treadmill.

B) AEROBIC EXERCISES Walking – Jogging – Running – Swimming – Stepping on the bench – Skipping – Spot running – Side stepping.

C) TEACHING PRACTICE- Preparation of Lesson plan. Essentials of good lesson plan: Concepts, needs, planning of teaching fitness. Models of lesson plan.

REFERENCE

- Batman, P. and Van, Capelle M., (1995) *The Exercise Guide to Resistance training*. Australia: FITAU publications.
- Dick, Frank W., (1980) *Sports Training Principles*. London: Lepus Books.
- Fleck, S.J. and Kraemer, W.J., (1997) *Designing Resistance Training Programs*. Second Edition. Champaign: Human Kinetics.
- Newton, Harvey., (2010). *Explosive lifting for Sports*. Champaign: Human Kinetics.
- Sandler, David., (2010). *Fundamental Weight Training*. Champaign: Human Kinetics.

Course Outcomes

- Acquired practical knowledge of fitness.
- Provided practical knowledge about the callisthenics and free hand exercises.
- Studied the stretching exercise and its benefits.
- The barbell and dumbbell exercises were learned.
- Trained on weight machines of various kinds.
- Given fair idea bout aerobics.
- Learned the need of lesson plan in fitness training.
- Preparation for lesson plan for fitness training was studied.