

P.G. DIPLOMA IN NUTRITION, HEALTH& FITNESS (PGDNHF)

OBJECTIVES:

- To aware about basic misconceptions about Nutrition, Health, Fitness and public health problem.
- To provide employment and knowledge in Nutrition, fitness and health education field.
- To help students/sportsman in planning, organizing, implementation and evaluation of Nutrition, health and fitness programme.

ELIGIBILITY: Any Graduation Degree (10+2+3) or equivalent from recognized University (Preference will be given to Physical Edu. & Sports background)

ADMISSION CRITERIA: Merit will be decided as Per Marks Obtained in Graduation (those having physical education degree/diploma 50% marks will be added with 50% marks of general Graduation)

DURATION : 1 Yr. & 2 Yr. (Add on course)

MEDIUM : English & Hindi

CREDIT : 32 each course has 8 credits

TUITION FEE : Rs. 12,000/- (One Year course)
Rs. 6,000/- per year (Add on course)

PROGRAMME STRUCTURE:

Paper S. No.	Name of Theory Paper	University Exam Marks		Sessional Marks	Total Marks	
		Max	Min	Max	Max	Min
I	Foundation & History of Physical Education	75	27	25	100	36
II	Introduction to Anatomy & Physiology of Exercise	75	27	25	100	36
III	Fitness Management	75	27	25	100	36
IV	Health Education	75	27	25	100	36

There will be Four Compulsory Courses (papers) for annual basis course, two papers per year for add-on course. It is compulsory to clear paper in previous year. Supplementary or Back will be in Final Year Papers only.

In add-on course, the completion of minimum duration i.e. one year a candidate will be examined by the means of written examination of three hours duration in each course paper and will be promoted to final year. The maximum marks for each course paper shall be 100 marks.

To pass the Examination a candidate will have to obtain a minimum of 36 percent marks in aggregate (External 75 and Internal 25 taken together).

The marks obtained in internal assignment and term end examination shall be shown separately in the mark sheet. The successful candidate shall be classified as per the following table-

First Division	-	60% and above
Second Division	-	48% to less than 60%
Pass	-	36% to less than 48%

No Division shall be awarded for the Previous Year (Add on course)

PG DIPLOMA IN NUTRITION, HEALTH & FITNESS
Paper I: FOUNDATION AND HISTORY OF PHYSICAL EDUCATION

A. Principle of Physical Education :

1. Introduction : Meaning of the term Principle-Sources Principles of Physical Education-related subjects.
2. Aims and objectives of Education and Physical Education.
3. Definition of Education and Physical Education Physical Culture-Physical Training.
4. Biological Foundation of Physical Education : Hereditary traits ; Unsynchronised development ; Reciprocal innervation ; Differences between boys and girls during the period of adolescence ; Somato type classification according to Sheldon and Kretschmer ; Exercise a biological necessity; Growth; structure; function; body Mechanics.
5. Sociological Foundation-gregarious instinct; individual and society, Desire for recognition and response Social groups and their significance-family, community, School state-Nations; Democratic thinking; Leaders and Followers, respect of individual : equality; National integration.
6. Psychological Foundations of Physical Education.
Importance and implication of psychological elements in physical education; Psycho-physical Unit, Conditions and factors effecting Learning.
7. Programme Planning in Recreation : General Principles of programme construction-Types of Recreational activities-indoor and outdoor games. Arts and Craft, Drama, Music, hobbies, aquatics dancing, nature study, hiking Evaluation of programme.
8. Leadership and Techniques of Leadership : Type of Leaders and their qualification - Career aspects of Recreation.

B. History of Physical Education:

1. Physical Education In Ancient Greece :Sparta, Athens, Origin and development of Ancient Olympics.
2. Physical Education In Ancient India : Advent of Aryans; Epic Age; Philosophic Age; Buddhist Age. Mohammedan Period., Influence of Great Britain and U.S.A., Y.M.C.A. and its contributions; Teacher Training in Physical Education. All India Council of Sports; Coaching Schemes, National Physical Efficiency Drive. National School Games Federation; Association of Inter-University Board of Sports.
3. Great names in Modern Indian Sports,

Books Recommended:

1. *Bucher, Charles A. Foundation of Physical Education St. Louis The C.V. Mosby Co. 1972.*
2. *Nixon E.E. & Cozen, F.W. An introduction to Physical Education, Philadelphia. W.B. Saunders Co. 1969*
3. *Obertenffer, Dalbert Physical Education, New York, Harper & Brothers Publisher, 1970.*
4. *Sharma, J.R. Introduction to Physical Education, New York A.S. Barnes & Co. 1964.*
5. *William J.F. The Principles of Physical Education. Philadelphia, W.B. Saunders Co. 1964.*

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Paper II : INTRODUCTION TO ANATOMY AND PHYSIOLOGY OF EXERCISE

Anatomy:

1. Character of living bodies (animal)
2. Cell and its parts - cell division - cellular basis of life.
3. Heredity.
4. A brief account of Evolution and Evolutionary adaptation of man.
5. Tissues in the Human body and the general arrangement of the body.
6. The arrangement of the skeleton. Functions - of the skeleton Ribs and Vertebral column and the extremities. Sex differences in the skeleton - Arches of the feet. General classification of the joints of the body and examples for each type.
7. Types of muscles in the body and their differences.
8. Blood and circulatory system -
Constituents of blood and their function - Functions of blood-Blood groups and blood transfusion-clotting of blood-Structure of the heart-Properties of the heart muscle, circulation of blood-cardiac cycle, blood-pressure-Pulse, Blood vessels-Lymph and Lymphatic circulation.
9. The Respiratory System :
The Respiratory passage- the lungs and their structure and exchange of gases in the lungs-mechanism of respiration.
10. The Digestive System :
A brief study of the structure and functions of the Tongue, Teeth, Salivary glands, stomach, small and Large Intestines, Pancreas and the Liver.
11. The Excretory System :
Brief account of the structure and functions of the kidneys and the skin.
12. The Ductless glands :
A Brief account of the functions only of Pituitary. Thyroid. Parathyroid, Adrenal and the sex glands.
13. Nervous Systems :
The Neuron-Function of the cerebrum and cerebral localisation, Function of the cerebellum, Medulla and spinal cord-Reflex. Arc-Autonomic Nervous system and Central Nervous System.
14. Special Senses : A brief account of the structure and functions of the Eye and Ear.

Physiology of Exercise:

1. Physiological concept of health and fitness.
2. Effect of exercise on the various systems of the body with special emphasis on the circulatory and respiratory systems.
3. Muscle contraction in sports:
 - (a) Properties and composition of voluntary muscles.
 - (b) Minute structure of voluntary muscles.
 - (c) Changes in muscle contraction.
 - (d) Nerve control of muscular activity.
 - (e) Conditions effecting muscular contraction.
 - (f) Relation between duration and severity of exercise.

- (g) Warming up.
- (h) Conditioning.
- (i) Training.
- (j) Physiological factors affecting skill, strength and endurance.
- (k) Stitch and cramps.
- (l) Aging changes in muscle.

Physiology Practical (for sessional work only)

The students will attend demonstration and perform experiments themselves.

Section - I : Experimental Physiology

1. To study the electrical apparatus use for stimulating excitable tissues and recording muscular contraction.
2. To draw the simple muscle curve.
3. To demonstrate the effect of repeated stimuli.
4. To demonstrate the effect of fatigue on simple muscle nerve preparation.
5. To demonstrate the effect of temperature on simple muscle nerve preparation.
6. To demonstrate the effect of load on muscular contractions.
7. To demonstrate the effect of various strengths of Stimuli on a simple muscle curve.
8. To draw the curve of complete and incomplete tendon.

Section - II : Human Experiments

1. To listen the breath sound by means of stethoscope
2. To listen the heart sound by means of the stethoscope.
3. To study the effect of exercise on Pulse rate.
4. Howard step up test.
5. To find the vital capacity by means of the spirometer.
6. To record chest movements by means of Pneumograph.
7. To study the effect of rate movement, load and obstruction to blood supply on the onset of fatigue by means of Ergograph.
8. To find out reaction time.
9. Demonstrate reflex action e.g. knee joint.
10. To test vision with Snellue's Test Chart.
11. To test colour vision by Ischiara's Chart.

Section - III : Chemical Experiments

1. To demonstrate the presence of reducing Sugar in the given solution.
 - (a) Benedict's Test
 - (b) Fehling's Test
2. To demonstrate the presence of starch in Rice-Potato wheat flour etc.
3. To demonstrate the presence of proteins in -
 - (a) egg white
 - (b) egg flour
4. To examine the normal urine -
 - (a) Quantity
 - (b) Specific gravity
 - (c) Turbidity
 - (d) Chemical test for Urea and Uric acid.
5. To find the percentage of Hemoglobin in human blood.

Books Recommended :

1. *Gupta Manju and Gupta M.C. - Body and Anatomical Science (Hindi) Delhi Swaran Printing Press, 1980*
2. *Sharma R. D. Health and Physical Education (Hindi) Gupta Prakashan, 1979.*
3. *Singh Sujana, Anatomy of Physiology and Health Education Repair, Jeet Publications, 1979 (Hindi).*
4. *Pearca Evelyn, C. Anatomy and Physiology for Nurses (Hindi) London, Faber & Faber Ltd. 1962.*
5. *Karpovich, Peter V. Philosophy of Muscular Activity London W.B. Saunders Co. 1959.*
6. *Morehouse, L.E. & Fillerm J. Physiology of Exercise St. Louis The C.V. Mosby Co. 1967.*

P.G. DIPLOMA IN NUTRITION, HEALTH AND FITNESS
Paper III FITNESS MANAGEMENT

1. Introduction

- (a) Concept of Fitness and Wellness and their significance in Modern times.
- (b) Scope of Fitness s Trainer.
- (c) Health and Fitness Components.
- (d) Health Screening, Health conditions that affect Physical Activity and Medication.
- (e) Clients Preferences, Expectations and Life Style information.
- (f) Physical Screening.
- (g) General Principles of Training.

2. Exercises for Fitness & Designing of the programme.

- (a) Training consideration while selecting nature of exercise.
- (b) Understanding suitability and forms of exercise for Fitness.
 - Calisthenics
 - Aerobics/Dance
 - Weight Training
 - Yoga
 - Other forms of exercise
- (c) Designing Fitness Programme for:
 - Sedentary and active Population
 - Different Age Groups
 - Different Fitness levels
- (d) Relationship of Exercise with heart rate, equation for calculating heart rate zones for various exercise intensities.
- (e) Designing Weight Reduction Training Programme
- (f) Fitness and Rehabilitation Training Consideration for:
 - Obese Age Adult
 - Diabetic Subjects

3. Nutrition and Energy

- (a) Nutrition Calorie consumption, weight variation due to dietary habit.
- (b) Physiological and Metabolic changes during exercise.
- (c) The Energy Support (Aerobic and Anaerobic).
- (d) Recommended nutritional intakes.
- (e) Dietary guidelines.
- (f) Nutrient needs for people with different life style.
- (g) Sport Nutritional Myths

4. Establishment and management of Fitness Center and Legal issues.

- (a) Selection of training organization of trainer.
- (b) Layout of Health Clubs/Fitness Center.
- (c) Procurement of Equipments and their maintenance.
- (d) Personal Management.
 - Legal Responsibilities.
 - Facilities
 - Equipments

- Supervision
- Instruction
- Safety Guidelines
- Exercise recommendation and testing
- Indemnity Bond

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Paper - IV HEALTH EDUCATION

I: Health and Wellness

- (a) Achieving Personal Health
- (b) Mind-Body Communications
- (c) Managing Stress

II: Making Decisions About Health Care

- (a) Being a wise Health Care Consumer
- (b) Selecting a Health Care Practitioner
- (c) Understanding Health Care Financing
- (d) Health Care Issue Today

III: Eliminating Tobacco Alcohol Use :

- (a) Why People Smoke
- (b) Physiological Effects of Tobacco
- (c) Smoking and Disease
- (d) Quitting Smoking
- (e) History of Alcohol Use
- (f) How Alcohol Affects the Body
- (g) Other affects of Alcohol
- (h) Alcohol Abuse and Alcoholism

IV: Exploring Alternate Medicines:

- (a) Meaning of Alternate Medicine
- (b) Alternate Medicine (Ayurveda, Homeopathy, acupuncture, Herbal Medicine, Naturopathy, Therapeutic Massage)
- (c) Choosing a Alternate Medicine
- (d) Critical Thinking about Health

V: Working Towards Healthy Environment

- (a) Outdoor Pollution
- (b) Indoor Pollution
- (c) Pesticides
- (d) How Human Pollution Growth Affects Us

VI: Basic Concepts in Nutrition : Food, Nutrition and Health

Macro nutrients - I : Carbohydrates and Water,

Macro nutrients - II : Proteins and Lipids,

Macro nutrients - I : Vitamins,

Macro nutrients - II : Minerals, Planning Balanced Diets

Meal Planning : Principles of Meal Planning & Meal Planning for the Adult

Meal Planning for Pregnant and Lactating

Macro nutrients - II : Minerals, Planning Women, Meal Planning for Infants and

Preschoolers, Meal Planning for the School Child and Adolescent Deficiency

Disease - I : PEM and Xerophthalmia Major Deficiency Disease - II : Anaemia and Iodine

Deficiency Disorders, Other Nutritional Problems, Nutrition and Infection, Dietary

Management of Obesity, Coronary Heart Disease and Diabetes Mellitus, Maternal Malnutrition