Department of Higher Education, Govt. of M.P.  
Semester wise syllabus for Postgraduates  
As recommended by Central Board of Studies and  
Approved by H.E. the Governor of M.P.  
M.Sc. (Home Science)  
Food and Nutrition  
SEMESTER-IV  
PAPER-1 Health and Fitness  

Objectives  
- Understand the components of health and fitness and the role of nutrition in these. Make nutritional, dietary and physical recommendations to achieve fitness and well-being.  
- Develop ability to evaluate fitness and will.  

UNIT-I  

(A) Body Composition  
(1) Methods  
   (a) Chemical analysis  
   (b) Nutritional anthropometry  
   (c) Skin fold thickness  
   (d) Body density  
   (e) Dilution technique  
   (f) 40K Analysis  
   (g) Other methods: Concept  
(2) Compositional changes concept  
   (a) Human foetal development  
   (b) Material weight gain - Distribution composition  
   (c) Compositional changes between birth and maturity  
   (d) Compositional changes with weight changes: Physical activity, Obesity.  

(B) Holistic approach to the management of fitness and health: Nutrition, Exercise, Physical fitness and health inter-relationship  
   (a) Energy input and output  
   (b) Diet and Exercise
UNIT-II

(A) Effect of specific nutrients on work performance and physical fitness. Shifts in carbohydrate and fat metabolism, mobilization of fat stores during nutrition in sports: Sports specific requirements. Diet manipulation. Pre-game and Post game meals.

UNIT-III


(B) Diet for persons with high energy requirements stress and starvation.

UNIT-IV

(A) Defining nutrition goals/guidelines appropriate to health, fitness and prevention and management of Chronic degenerative disease diabetes mellitus CV disorders, bone, health and cancer.


UNIT-V

(A) Nutrition and exercise regimes for pre and post natal fitness.

(B) Alternative systems for health and fitness like ayurveda yoga, meditation vegetarianism and traditional diet.

(C) Nutrition Management in special conditions: Space travel, high altitudes, low temperatures submarines.
References

1. Annual Reviews of Nutrition, Annual Review Inc. California USA
4. World Reviews of Nutrition and Dietetics.
Journals

1. Nutrition Reviews
2. America Journal of Clinical Nutrition
4. European Journal of Clinical Nutrition
5. International Journal of Vitamin and Nutrition Research
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M.Sc. (Home Science)
Food and Nutrition

SEMESTER-IV
PAPER-II - Clinical & Therapeutic Nutrition

Objectives

1. Understand the etiology, physiological and metabolic anomalies of acute and chronic diseases and patient's need.
2. Know the effects of various diseases on nutritional requirement and nutritional status.
3. Be able to recommend and provide appropriate nutritional care for prevention and treatment of various diseases.
4. Orient the students with all the important state of art methodology applied in Nutritional assessment and surveillance of human group.
5. Develop specific skills to apply the most widely used methods.

UNIT I

A) Nutritional care in Cardio-vascular disorders.
1. Hypertension-
   a) Definition.
   b) Criterion
   c) Types
   d) Causes
   e) Nutritional Management
   f) Drugs.
9. Hyperlipidemia
   a) Lipoproteins and their metabolism
   b) Classification of hyperlipidemia
   c) Clinical and Nutritional aspects of hyperlipidemia
   d) Dietary Care

3. Coronary Heart Diseases (CHD)
   a) Atherosclerosis
      i) Etiology
      ii) Pathogenesis
   b) Risk factors associated with CHD
   c) Management of CHD
      i) Dietary Management
      ii) Exercise
   d) Prevention of CHD

UNIT-II

A. Cerebrovascular disorder and nutritional management
   a. Pathogenesis
   b. Etiology
   c. Nutritional

P. Diet in Disease of endocrine pancreas
   a) Etiology
   b) Classification
   c) Symptoms and diagnosis
   d) Management clinical vs. Chemical control
   e) Insulin Therapy
   f) Oral hypoglycemic drugs
   g) Glucose monitoring at home
   h) Dietary care with and without insulin
   i) Specific Diabetic food
   j) Sweetness and sugar substitutes
   k) Diabetic coma
   l) Insulin reaction
   m) Patient education
UNIT III

A. Nutritional care in Hypoglycemia
   (1) Hypoglycemia
       (a) Symptoms
       (b) Types
           (i) Reactive Hypoglycemia
           (ii) Idiopathic Hypoglycemia
       (c) Dietary treatment

B. Nutritional care for patient with disease of kidney
   (1) Review of physiology and function of normal kidney
   (2) Nephritis
       (a) Classification
       (b) Etiology
       (c) Characteristics
       (d) Nutritional care and management

C. Nephritic syndrome
   (1) Etiology
   (2) Characteristics
   (3) Nutritional care and management

D. Acute and Chronic renal failure
   (1) Etiology
   (2) Types
   (3) Nutritional care and management

UNIT IV

Nutritional care for patients having surgery and burns

(A) Surgery
   (1) Pre operation nutritional care
   (2) Post operative nutritional care
       (b) Gastric surgery
       (c) Gall bladder surgery
       (d) Colon surgery
       (e) Tonsil surgery
       (f) Oesophageal surgery
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UNIT-V

Nutritional care HIV immune suppressed patients and management of infancy and
childhood nutritional problems.

i. HIV diseases and AIDS
   (a) Nutritional problems associated with HIV diseases
   (b) Role of diet and nutritional support

ii. Diets for immune suppressed patients

iii. Nutritional management of
   (a) Kwashiorkor
   (b) Marasmus
   (c) Vitamin A deficiency

iv. Latest researches and concepts in management of various
    lifestyle problems.

Practical:

1. Planning calculation and preparation of diets mentioned in theory.
2. Interpretation of patient data and diagnostic tests and drawing up of patient
diet prescription using a case study approach
3. Follow up acceptability of diet prescription, compliance, discharge diet plan.
4. Preparation of diet counseling aids for common disorders.
5. Spotting.
References
1. Manual of Dietetics Practice - Briona Thomas
2. Nutrition in Health and Disease - Anderson
4. Basic Nutrition and Diet Therapy - William 10/c
5. Nutrition and Diet Therapy - William 10/c
6. Food Nutrition and Dietetics
7. Nutrition and Diet Therapy - Stanfield
8. Modern Nutrition in Health and Disease - Robert S. Goodhart
10. Nutrition in Critical Care - Zaroga
11. Fundamentals of Clinical Nutrition 93 - Webster
12. Dietetics - Shrilaxmi
13. Nutrition and Dietetics - Shubhangini Joshi
14. Human Nutrition and Dietetics - Davidson Passmore
15. Clinical Dietetics and Nutritional F.P. Anita
16. Textbook of Nutrition and Dietetics - Kumud Khanna Bhat
Objectives:
This course is designed to:
- Provide an understanding of composition of various foodstuffs.
- Familiarize students with changes occurring in various foodstuffs as a result of processing and cooking.
- Enable students to use the theoretical knowledge in various application and food preparations.
- Create awareness regarding current trends, issues and researches in various aspects of food and nutrition.

UNIT-I

UNIT-II
(C) Fish and Sea Food: Types and composition, Storage and changes; storage changes during processing. By products and newer products.

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UNIT III


(B) Fruits and Vegetables: Plant anatomy, structure and composition: enzymes in fruits and vegetables, flavour constituents, plant phenolics, pigments, post-harvest changes: texture for fruits and vegetables. Effects of storage, processing and preservation.

UNIT IV

(A) Leavened Products: Leavening agents, biologically leavened and chemically leavened products. Butter and dough.

(B) Salt and Constituents.

(C) Spices and Condiments: Composition, flavouring extracts, natural and synthetic.

UNIT V

(A) Biotechnology in Food:
- Algae as food spindle
- Organocellulose
- Nanocellulose
- Low cost nutrients
- Supplement
- Space foods
- Food irradiation
- Packaging of foods
- Food safety and Standards, Quality standards
- Entrepreneurship in Management
Practical:

Food Science


5. Gelation: Gelation, gel strength and factors effecting gelation. Ability to foam.

UNIT-I

(A) Women in family and community:
Demographic Changes, Menarche, Marriage Fertility Morbidity, Mortality,
Life Expectancy, Sex Ratio, aging and Widowhood female headed families.

(B) Women and Work:
Environment stress production activities, Nutrition, Health and gender,
Living condition, Occupational health, Health facilities.

UNIT-II

(A) Current Nutrition and Health Status of Women and Children in India
(B) Policies and programmes for promoting maternal and child nutrition
(C) Changing Concepts and controversies in Maternal and Child Nutrition

UNIT-III

(A) Women’s role their resource and contribution to family and community a
effect on nutritional status:
(B) Effect of urbanization on Women:
Impact of economic policies, industrialization, and globalization women.
(C) Concept of small family, methods of family planning, merits and demerits

UNIT-IV

Women and Health
Health Facilities
Gender and Health
- Health seeking behaviour
- Women and AIDS

Women and Nutrition
Situation of women in global and local context
Improving the Nutritional and Health Status
Interventions through the life cycles.

UNIT-V

A) Policies and Legislations.
CEDAW (Conventions on Eliminations of all forms of Discriminations Against Women)
WRLL (Women’s Right to Life and Health)

B) Empowerment of Women
Role of Education and various National Schemes.