

IV SEMESTER

NUTRITION AND DIETETICS

CLINICAL NUTRITION AND DIETETICS II

Code: MSND401

Hours: 52

Instructions/week: 04

Total marks: 100

Theory: 70

IA: 30

OBJECTIVES:

- To impart indepth knowledge regarding diet, life style in acute and chronic diseases.
- To learn the effect of various diseases on nutritional status, and nutrient and dietary requirements.

UNIT I

8 hours

- Diseases associated with Gastro Intestinal Tract (GIT)- Pathophysiology, Etiology, symptoms and Medical Nutrition Therapy – Peptic ulcer, Gastritis, Flatulence, diarrhoea, constipation, Malabsorption syndrome, Crohn’s disease and Ulcerative colitis, Irritable Bowel Syndrome, Steatorrhea, Gluten sensitivity, Lactose intolerance.

UNIT II

12hrs

- Nutritional management of renal diseases – etiology, pathophysiology, symptoms and medical nutrition therapy in renal disorders- Acute and chronic glomerulonephritis, Nephrosis, Acute renal failure, Chronic renal failure, Renal calculi
- Types and principles of dialysis
- Kidney transplant

UNIT III

10 hrs

- Diseases of cardiovascular system – etiology, risk factors, symptoms and dietary management of hypertension, atherosclerosis, congestive heart disease, ischemic heart disease.
- Hyperlipidemia – brief review of lipoproteins and their metabolism, blood lipid profile and dietary lipids.

UNIT IV

12 hrs

- Diseases of nervous system - Nutritional management in dysphagia, epilepsy, hyperkinetic behavior syndrome.
- Musculoskeletal System- Etiology and dietary treatment in arthritis and osteoporosis.
- Nutritional management of physiological stress and wound healing.
- Dietary management for trauma, sepsis.

UNIT V

10 hrs

- Nutrition in Gout – etiology, symptoms and dietary management.
- Nutrition in cancer – Etiology, eating problems in cancer, cancer therapy and dietary management.
- Burns- Stages of burns, metabolic changes, Nutritional management
- Surgery-Physiological response, metabolic consequences, stages of convalescence, dietary management.
- HIV infection and AIDS - Epidemiology, transmission of HIV, clinical manifestation, dietary management and control.

NUTRITION AND DIETETICS

CLINICAL NUTRITION AND DIETETICS –II

PRACTICALS

Code: HSND 401 P
No. of Weeks: 13
Instructions /week: 4

Total marks: 50
Practicals: 35
IA : 15

UNIT I

Planning and preparation of diet for acute glomerular nephritis

UNIT II

Planning and preparation of diet for hypertension

Planning of diet for Atherosclerosis

UNIT III

Case studies and presentation on Nephrotic syndrome

UNIT IV

Planning of diet in Gout

UNIT V

Planning of diet for burns

Planning of pre and post operative diets

REFERENCES:

1. Modern Nutrition in health and Disease, 10th edition by Maurice E. Shils
2. Alfred H. Katz, Prevention and Health, the Haworth, press, New York 1999
3. Krause Food and Nutrition Care Process, 14th edition
4. Sareen S, 2005 Advanced Nutrition in human metabolism, 4th edition, USA
5. IAPEN, BAPEN webseries
6. International Life Science Institute Present Knowledge in Nutrition- latest edition
7. Acharya, K.T., (1998) A historical Dictionary of Indian Foods, Oxford Publishing Co
8. Antia, F.P. and Philip A. Clinical Dietetics and Nutrition, 4th Ed.

9. Bamji, M.S. Rao, P.N. and Reddy. Text book of Human Nutrition. 1996. Oxford and IBH publishing housing.
10. Garrow, J.S. and James WPT. Human Nutrition and Dietetics, 9Ed.
11. Williams, S.R. Nutrition and Diet Therapy, 6thEd. Jones Mirror College, Publishing.
12. Sharon Rady Rolf and Ellie Whitley,(2018), Understanding Normal and Clinical Nutrition, 11 th edition,2018.

SEMESTER IV
NUTRITION AND DIETETICS
NUTRITION IN CRITICAL CARE

Code: HSND 402
Hours: 52
Instructions/week: 04

Total marks: 100
Theory: 70
IA: 30

OBJECTIVES:

- To understand the physiology and special nutritional requirements of the critically ill.
- To know about special nutritional support techniques and feeding formulation to meet their nutritional needs.

UNIT I

8 hrs

- Hospital diets – clear fluid diet, full fluid diet, bland and soft diet, normal diet, special diets.
- Enteral nutrition for critically ill patients, nutritional requirements, indication/complications, routes and administration.
- Types of enteral formulas, complications.

UNIT II

12 hrs

- Parenteral nutrition in critically ill patients, nutritional requirements, routes and administration.
- Parenteral formulas, calculation of the feed, commercial formulas available in the market, significance and advantages and disadvantages of commercial formulas, home made feeds, Oral nutritional supplements.
- Refeeding syndrome, complications of parenteral therapy and enteral therapy, rehabilitation diets, and palliative care.

UNIT III

10 hrs

- Critically ill patients –Importance of nutrition in trauma, stress, sepsis, nutritional assessment, choice of nutrients.
- Nutrients for immunity, and role of prebiotics and probiotics (fibre) in critical illness.
- Nutrition support in patients with cancer.

UNIT IV

12 hrs

- Nutritional assessment and nutritional intervention of HIV patients
- Nutritional consideration in critically ill patients, organ transplantation, multiple organ failure. Feeding critically ill obese patients.

UNIT V

10 hrs

Nutritional Support in Special conditions (critically ill)-

- Pediatrics- Nutritional assessment, Nutritional Requirements, Nutritional Intervention
- Nutritional support in burns.

REFERENCES

1. Modern Nutrition in health and Disease, 10th edition by Maurice E. Shils
2. Alfred H. Katz, Prevention and Health, the Haworth, press, New York 1999
3. Krause Food and Nutrition Care Process, 15th edition
4. Sareen S, 2005 Advanced Nutrition and human metabolism, 7th edition, 2016, USAIAPEN, BAPEN webseries
5. International Life Science Institute Present Knowledge in Nutrition- latest edition 2012
6. Achayya, K.T., (2001) A historical Dictionary of Indian Foods, Oxford Publishing Co
7. Antia, F.P. and Philip A. Clinical Dietetics and Nutrition, 4th Ed, 2002.
8. Bamji, M.S. Rao, P.N. and Reddy (2019,) Text book of Human Nutrition, 4th edition, Oxford and IBH publishing housing.
9. Garrow, J.S. and James WPT. Human Nutrition and Dietetics, 10th Ed.

10. Williams, S.R., Essentials of Nutrition and Diet Therapy, 12th Ed. Jones Mirror College Publishing, 2018.
11. Sharon Rady Rolf and Ellie Whitley,(2018), Understanding Normal and Clinical Nutrition, 11 th edition,2018.

SEMESTER IV
NUTRITION AND DIETETICS
a. FOOD SERVICE MANAGEMENT

Code: MSND 403
Hours: 52
Instructions/week: 04

Total marks: 100
Theory: 70
IA: 30

OBJECTIVES

- To gain knowledge on requirements and management of various food service establishments.
- To know the types of food cost involved and the methods to control them.
- To know the types and variety of foods available in the market
- To learn to purchase, receive and store different foods.

UNIT I

10 hours

Management of Food Service Establishments

- Managing, Planning, Organizing, Directing, Coordinating, Controlling and Evaluating
- Tools of management – Tangible and Intangible tools
- Management of resources – Natural environment, Work environment
- Principles of Management of food service establishment

Type of food service establishment:

- Commercial, Non Commercial Service, Street – mobile food unit.
- Temporary food service establishment, vending machine, food court, High risk food

UNIT II

10 hours

Organisation of Space and Equipment in Food Service Establishment

- Kitchen Space – Size and types, Developing kitchen plan, Work simplification
- Features to be considered in kitchen designing
- Storage Space – Types of storage

- Factors to be considered while planning storage spaces
- Service Area – Location
- Structural designing and planning storage spaces
- Equipment – Classification of equipment
- Selection of equipment, designing , installation and operation, purchase, care and maintenance of equipment

UNIT III

12 hours

Food Management

- Characteristic of food – Types of food, quality and quantity, Sensory quality and nutritional quality
- Food purchasing – Importance, types – open market, formal, negotiated and wholesale
- Receiving and Food storage – Delivery methods, General guidelines for storing perishable and non perishable foods
- Menu Planning – Importance of menu planning, types of menus – Al a carte, tabled’hote and combination

Food service- Style of service-Self service and vending, tray service, waiter-waitress service, portable meal

Delivery and Service of Foods:

- Food service systems : Conventional, Commissary , ready prepared, assembly service
- Clearing and winding up after service, Customer relations

UNIT IV

10 hours

Food Purchasing, Selection and Storage

- Food Purchase- Food purchasing procedure, Selection of foods, purchasing methods
- Important points to be observed for various food commodities
- Importance of sanitary procedures while preparing, cooking and holding of foods.

Food Storage:

- General Guidelines for Storage of food - Dry Storage, Refrigerated Storage, Freezer Storage , Importance of pest control

UNIT V**10 hours****Standardisation of Food and Patent Regulations and Financial management**

- Steps involved in formulation and standardization of recipes, significance of food standardization. Patent laws- Definition, Evolution of IPR, Patent rights in India

- Food product labeling - purpose

Financial management:

- Component of cost, Behavior of cost, Concept of contribution and breakeven

Cost control:

- Importance of cost control, Factors affecting losses, Methods of controlling food cost and labour cost

REFERENCES

1. Sethi M and Mahan S (Revised 2nd edition, 2007)). Catering Management, An Integrated Approach. New Age International (P) Ltd
2. Andrews S (2009) Food and beverage service : Training Manual 2nd edition. New Delhi Tata McGraw Hill.
3. Bessie Brooks West and Levelle Wood MS (1988). Food Service in Institutions (6th ed.). John MacMillan Publishing Co., New York
4. Harris N (1984) Meal management (6th ed.). New York : Mac Millan.
5. Wailey BH (1986) Production management handbook. U.K. : Gower Publishing.
6. Kotas R (1981). Accounting in hotel and catering industry. publisher- Thomson Learning; 4th Revised edition edition (Jun 1981)
7. Fuller J and Thomas S (2006). Modern Restaurant Service, Amazon
8. Kotler P and Keller K (2008). Marketing Management (13th ed.). Prentice Hall, USA.

SEMESTER IV
NUTRITION AND DIETETICS
b. NUTRITION IN EMERGENCIES

Code: MSND 402
Hours: 52
Instructions/week: 04

Total marks: 100
Theory: 70
IA: 30

OBJECTIVES

- Familiarize students with various natural emergencies and disasters
- Understand the impact on nutrition and health status and special nutritional arising out of these situations
- Understand strategies for nutritional rehabilitation management of the health of emergency affected populations.

UNIT I

12 hrs

- Definition of disaster
- Classification of disasters

Natural disasters

- Water and climate – cyclone, flood, tornado, Hurricane, flood, drought, tidal wave, Tsunami
- Earth related – Earth quake, volcanoes, landslides and Avalanches
- Risk and Disaster Management with software applications

Manmade disasters

- Nuclear Explosions and War
- Accidents, mine flooding and stampede

UNIT II

10 hrs

Disaster Management

- Nutrition Management during disaster, Immediate rescue and first aid including physiological aid, Organization and Nutritional surveillance and Individual screening, Supply of food, Assessment of food needs in emergency situations, Food distribution strategy- define and reaching the vulnerable group, Mass and supplementary feeding, Therapeutic feeding.

UNIT III

12 hours

- Assessment of food nutritional relief, local foods in rehabilitation, organizations for mass feeding food distribution, transportation and storage, feeding centers, Sanitation and hygiene.
- Nutritional support system in relief and rehabilitation, surveillance of nutritional status in emergency relief situations such as flood, cyclone, earthquake, drought, war etc.

UNIT IV

8 hrs

- Control of communicable diseases – Surveillance and Treatment
- Causes of malnutrition in emergency situation
- Major and specific deficiencies in disasters and treatment

UNIT V

10 hrs

- Global warming – Challenges for food security in India
- Water – Safe water supply
- Sanitation and Hygiene, Role of immunization and Sanitation

REFERENCES

1. Goyet, Fish V, Seaman, J and Geijact (1978).The management of nutritional emergencies in large populations WHO, Geneva
2. Refuge Nutrition Information System (RNIS) Newsletters UNACC/SCN subcommittee on Nutrition
3. Beradley, A Woodruff and Arabella Duffield (July 2000) Assessment of Nutritional status in emergency affected populations. Adolescents special supplement, UNACC.SCN sun committee on nutrition.
4. Young H, Means C (1998) Acceptabilty and use of cereal – based foods in refugee camps. Oxfain Working paper, Oxfam publishing Oxygen, U.K
5. UNHCR (1999) UNHCR Hand books of emergencies 2nd edition Geneva UNHCR.
6. WHO website for emergencies

SEMESTER IV
NUTRITION AND DIETETICS

c. MATERNAL AND CHILD NUTRITION

Code: MSND 403
Hours: 52
Instructions/week: 04

Total marks: 100
Theory: 70
IA: 30

OBJECTIVE

- To enable the students to understand the role of nutrition during pregnancy lactation and infancy.
- Get acquainted in the growth and developmental changes from conception till adolescence

UNIT I

10 hrs

- Importance of maternal nutrition- Meaning and objectives of maternal and child health.
- Health problems of mother and child in India
- Current Scenario of maternal and child nutrition in India. Vital statistics related with mother and child.
- Nutritional aspects of embryogenesis

UNIT II

10 hrs

- Physiological and psychological changes during pregnancy
- Importance of prenatal and postnatal nutrition
- Management and importance of antenatal care
- Complications of pregnancy
- AIDS during pregnancy

UNIT III

10 hrs

- Physiology and Endocrinology of lactation
- Composition of human milk
- Lactation amenorrhea and effects of lactose feeding on maternal health
- Factors affecting breast feeding
- Breast Feeding Vs Bottle feeding

- Guidelines in infant feeding and complimentary feeding

UNIT IV

10 hrs

- Growth and development during infancy, Immunization schedule
- Nutritional requirements of infants
- Preterm, low birth weight infants, implications for feeding and management
- Weaning and principles in preparing complimentary food supplements
- Nutritional management in diarrhoea and lactose intolerance

UNIT V

12 hrs

- Maternal and child Malnutrition: etiology and management of under nutrition and over nutrition.
- Nutritional challenges and nutrition for children with special needs
- Maternal and child health programs in India
- Supplementary feeding programs- Midday Meal Program and ICDS

REFERENCES

1. Bamji, M.S. Rao, P.N. and Reddy. Text book of Human Nutrition. 1996. Oxford and IBH publishing housing.
2. Mahan, L.K & Ecott- Stump, S.(2000): Krause's Food, Nutrition and Diet Therapy
3. Park A. Text book on Preventive and Social Medicine XIX Edition 2007.
4. Whitney. E.R. and S.R Kolfes (2002) Understanding Nutrition 9 ed.Wadsworth Thomson Learning,Australia.
5. Thompson, L.U. (1993) Potential Health Benefits and problems associatedwithantinutrients in foods. Food Research International. 26; 134 – 149.
6. Gibson, G.R. and M.B. Roberfroil (1999) ColoricMirobio, Nutrition andhealth, Kluwer Academic Publishers

IV SEMESTER
NUTRITION AND DIETETICS
PAEDIATRIC AND
GERIATRIC NUTRITION

Code: MSND 404
Hours: 52
Instructions/week: 04

Total marks: 100
Theory: 70
IA: 30

OBJECTIVES:

- Understand the growth, development and nutritional requirements of children
- Get an insight and knowledge on inborn errors of metabolism and pediatric critical care.
- Understand the theoretical frame work in the study of ageing,
- Impart effective interventions for care of the elderly.

UNIT I

8 hrs

- Normal growth in children – formulae for average weight and height in children (birth to 12 years).
- Factors affecting normal growth in children – milestones
- Nutritional requirements of children and dietary guidelines.

UNIT II

10 hrs

- Dietary management in gastrointestinal tract, liver and kidney diseases
- Nutritional support in diarrhoeal disease: Acute diarrhea – nutritional management, Oral Rehydration Therapy (ORT), fluid and electrolyte therapy, persistent diarrhoea – pathogenesis and dietary management.
- Constipation - dietary management
- Dietary management in Irritable Bowel Syndrome (IBD), Crohn's disease, Ulcerative colitis-
- Renal diseases – dietary management in nephrotic syndrome, acute renal failure and chronic renal failure.

UNIT III

12 hrs

- Cardiovascular diseases- Congenital heart disease – etiology, factors affecting growth and Nutritional management.
- Juvenile diabetes - Medical nutrition therapy, nutritional requirement, insulin regime, exercise.
- Nutrition for children with special needs-Allergies, common food allergens(milk, egg, soy, fish and peanuts)and intolerance,
- Diagnosis, treatment and dietary management -skin, respiratory tract, GI tract.

UNIT IV

10 hrs

- Definition of ageing, senescence, old age or aged people, Gerontology and geriatric nutrition.
- Introduction to geriatric care- concept of gerontology
- Ageing - Biology of ageing
- Physiological,psychological and biochemical changes during old age
- Dietetics of Geriatric care- Nutritional requirement and general dietary guidelines for elderly, food requirement, dietary modification.

UNIT V

12 hrs

- Major nutritional and health problems during old age-osteoporosis, obesity, neurological dysfunction, Anaemia, Malnutrition and constipation, Infection and Immunity, Degenerative disorders in elderly-Dementia, Alzheimer, Parkinson's disease
- Disorders of GIT
- Disorders of Pancrease – Senile Diabetes
- Infection of Respiratory system

NUTRITION AND DIETETICS

PAEDIATRIC AND GERIATRIC NUTRITION

Code: MSND 404P
Hours: 13
Instructions/week: 04

Total marks: 50
Practicals: 35
IA: 15

UNIT I

Assessment of Anthropometric Measurement using Growth Charts for SAM and MAM Children

UNIT II

Planning of diet for Diarrhoea/ARI

UNIT III

Planning and preparation of Nutrient Dense recipes for children/elderly

UNIT IV

Survey on nutritional assessment of paediatric/geriatric population using various tools

UNIT V

Planning and preparation of diet for constipation in elderly

REFERENCES

1. Madhu Sharma, Pediatric Nutrition in Health and Disease, 1st edition, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi, 2013
2. K. E. Elizabeth, Fundamentals of Pediatrics, 2nd Edition, Paras Publishers, Hyderabad, 2002
3. Suraj Gupta (Ed), Recent advances in Pediatrics – Nutrition, Growth and Development, Special Volume 20, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, 2010.
4. Clinical Dietetics Manual- Indian Dietetic Association, 2011
5. Bali, P.A (2001) care of the Elderly in India. Changing configurations, Indian Institute of Advanced study, Shimla.
6. HSUJENG Handbook of Geriatric Nutrition

7. John E Morley and David R, (2007), Thomas Geriatric Nutrition.
8. Suraj Gupte (2012), Pediatric Nutrition
9. Mehra,S.R., and Sharma S.R., (2018), Maternal and child Nutrition

IV SEMESTER
NUTRITION AND DIETETICS
DISSERTATION AND VIVA VOCE

Code: MSND 405
Viva voce 30 marks

Total Marks: 100
Dissertation: 70

- Topic of dissertation to be chosen from any broad area of Nutrition and Dietetics. It should be started at the end of the third semester and should be completed at the end of fourth semester.

The dissertation project should include:

1. Abstract
2. Introduction
3. Objectives of the Study
4. Review of Literature
5. Materials and Method
6. Results and Discussion
7. Summary and Conclusion
8. References

- Project work to be carried individually.
- Project to be allotted at the beginning of the third semester to facilitate students to carry out during semester break.
- Faculty members of the respective colleges /departments should serve as guides.
- The copy of the dissertation to be submitted to the University for Evaluation.
- Evaluation of dissertation has to be done by external examiner appointed by the University for 100 marks.
- The project viva voce examination will be held at the Bishop Cotton Women's Christian College, Department of Nutrition and Dietetics by one external examiner and one Internal examiner for 30 marks (PPT – 10 marks, Presenttaion-10 marks, viva voce-10 marks).

JOURNAL REFERENCES

- Indian Journal of Nutrition and Dietetics
- Journal of food and nutrition research
- Critical Reviews in Food Science and nutrition
- Annual Review of Nutrition journal
- Advances in Nutrition
- Journal of Food Science and biotechnology (springer)
- Journal of nutrition health and Ageing
- European Journal of Nutrition
- European Journal of Nutrition
- International food Research Journals
- Clinical Nutrition Journal
- International journal of Food Science and Nutrition
- International Food Research Journal
- Aquatic Food Product Technology
- Elsevier's Nutrition Journals
- Journal of Human Nutrition and Dietetics
- American journal of clinical Nutrition
- Journal of Academy of Nutrition and Dietetics