

APPLIED NUTRITION AND DIETETICS

PLACEMENT: II SEMESTER

THEORY: 3 cred credits (60 hours)

Theory: 45 hours

Lab : 15 hours

DESCRIPTION: The course is designed to assist the students to acquire basic knowledge and understanding of the principles of Nutrition and Dietetics and apply this knowledge in the practice of Nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Identify the importance of nutrition in health and wellness.
2. Apply nutrient and dietary modifications in caring patients.
3. Explain the principles and practices of Nutrition and Dietetics.
4. Identify nutritional needs of different age groups and plan a balanced diet for them.
5. Identify the dietary principles for different diseases.
6. Plan therapeutic diet for patients suffering from various disease conditions.
7. Prepare meals using different methods and cookery rules.

COURSE OUTLINE

T – Theory

Unit	Time (Hrs)	Learning Outcomes	content	Teaching/ Learning Activities	Assessment Methods
I	2 (T)	Define nutrition and its relationship to Health	<p>Introduction to Nutrition</p> <p><i>Concepts</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Definition of Nutrition &amp; Health</li> <li><input type="checkbox"/> Malnutrition – Under Nutrition &amp; OverNutrition</li> <li><input type="checkbox"/> Role of Nutrition in maintaining health</li> <li><input type="checkbox"/> Factors affecting food and nutrition</li> </ul> <p><i>Nutrients</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Classification</li> <li><input type="checkbox"/> Macro &amp; Micronutrients</li> <li><input type="checkbox"/> Organic &amp; Inorganic</li> <li><input type="checkbox"/> Energy Yielding &amp; Non-Energy Yielding</li> </ul> <p><i>Food</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Classification – Food groups</li> <li><input type="checkbox"/> Origin</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>

II	3 (T)	Describe the classification, functions, sources and recommended daily allowances (RDA) of carbohydrates  Explain BMR and factors affecting BMR	<p><b>Carbohydrates</b></p> <ul style="list-style-type: none"> <li>• Composition – Starches, sugar and cellulose</li> <li>• Recommended Daily Allowance (RDA)</li> <li>• Dietary sources</li> <li>• Functions</li> </ul> <p><b>Energy</b></p> <ul style="list-style-type: none"> <li>• Unit of energy – Kcal</li> <li>• Basal Metabolic Rate (BMR)</li> <li>• Factors affecting BMR</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> <li>• Models</li> <li>• Display of food items</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>
III	3 (T)	Describe the classification, Functions, sources and RDA of proteins.	<p><b>Proteins</b></p> <ul style="list-style-type: none"> <li>• Composition</li> <li>• Eight essential amino acids</li> <li>• Functions</li> <li>• Dietary sources</li> <li>• Protein requirements – RDA</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> <li>• Models</li> <li>• Display of food items</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>
IV	2 (T)	Describe the classification, Functions, sources and RDA of fats	<p><b>Fats</b></p> <ul style="list-style-type: none"> <li>• Classification – Saturated &amp; unsaturated</li> <li>• Calorie value</li> <li>• Functions</li> <li>• Dietary sources of fats and fatty acids</li> <li>• Fat requirements – RDA</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> <li>• Models</li> <li>• Display of food items</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>
V	3 (T)	Describe the classification, functions, sources and RDA of vitamins	<p><b>Vitamins</b></p> <ul style="list-style-type: none"> <li>• Classification – fat soluble &amp; water soluble</li> <li>• Fat soluble – Vitamins A, D, E, and K</li> <li>• Water soluble – Thiamine (vitamin B1), Riboflavin (vitamin B2), Nicotinic acid, Pyridoxine (vitamin B6), Pantothenic acid, Folic acid, Vitamin B12, Ascorbic acid (vitamin C)</li> <li>• Functions, Dietary Sources &amp; Requirements – RDA of every vitamin</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> <li>• Models</li> <li>• Display of food items</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>
VI	3 (T)	Describe the classification, functions, sources and RDA of minerals	<p><b>Minerals</b></p> <ul style="list-style-type: none"> <li>• Classification – Major minerals (Calcium, phosphorus, sodium, potassium and magnesium) and Trace elements</li> <li>• Functions</li> <li>• Dietary Sources</li> <li>• Requirements – RDA</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> <li>• Models</li> <li>• Display of food items</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer</li> <li>• Very short answer</li> </ul>

VII	7 (T) 8 (L)	Describe and plan balanced diet for different age groups, pregnancy, and lactation	<p>Balanced diet</p> <ul style="list-style-type: none"> <li>• Definition, principles, steps</li> <li>• Food guides – Basic Four Food Groups</li> <li>• RDA – Definition, limitations, uses</li> <li>• Food Exchange System</li> <li>• Calculation of nutritive value of foods</li> <li>• Dietary fibre</li> </ul> <p>Nutrition across life cycle</p> <ul style="list-style-type: none"> <li>• Meal planning/Menu planning – Definition, principles, steps</li> <li>• Infant and Young Child Feeding (IYCF) guidelines – breast feeding, infant foods</li> <li>• Diet plan for different age groups – Children, adolescents and elderly</li> <li>• Diet in pregnancy – nutritional requirements and balanced diet plan</li> <li>• Anemia in pregnancy – diagnosis, diet for anemic pregnant women, iron &amp; folic acid supplementation and counseling</li> </ul> <p>Nutrition in lactation – nutritional requirements, diet for lactating mothers, complementary feeding/ weaning</p>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Meal planning</li> <li>• Lab session on <ul style="list-style-type: none"> <li>○ Preparation of balanced diet for different categories</li> <li>○ Low cost nutritious dishes</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Short answer</li> <li>• Very short answer</li> </ul>
VIII	6 (T)	Classify and describe the common nutritional deficiency disorders and identify nurses' role in assessment, management and prevention	<p><b>Nutritional deficiency disorders</b></p> <ul style="list-style-type: none"> <li>• Protein energy malnutrition – magnitude of the problem, causes, classification, signs &amp; symptoms, Severe acute malnutrition (SAM), management &amp; prevention and nurses' role</li> <li>• Childhood obesity – signs &amp; symptoms, assessment, management &amp; prevention and nurses' role</li> <li>• Vitamin deficiency disorders – vitamin A, B, C &amp; D deficiency disorders – causes, signs &amp; symptoms, management &amp; prevention and nurses' role</li> <li>• Mineral deficiency diseases – iron, iodine and calcium deficiencies – causes, signs &amp; symptoms, management &amp; prevention and nurses' role</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> <li>• Models</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>
IX	4 (T) 7 (L)	Principles of diets in various diseases	<p><b>Therapeutic diets</b></p> <ul style="list-style-type: none"> <li>• Definition, Objectives, Principles</li> <li>• Modifications – Consistency, Nutrients,</li> <li>• Feeding techniques.</li> <li>• Diet in Diseases – Obesity, Diabetes Mellitus, CVD, Underweight, Renal diseases, Hepatic disorders Constipation, Diarrhea, Pre and Post-operative period</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Meal planning</li> <li>• Lab session on preparation of therapeutic diets</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>

X	3 (T)	Describe the rules and preservation of nutrients	<b>Cookery rules and preservation of nutrients</b> <ul style="list-style-type: none"> <li>• Cooking – Methods, Advantages and Disadvantages</li> <li>• Preservation of nutrients</li> <li>• Measures to prevent loss of nutrients during preparation</li> <li>• Safe food handling and Storage of foods</li> <li>• Food preservation</li> <li>• Food additives and food adulteration</li> <li>• Prevention of Food Adulteration Act (PFA)</li> <li>• Food standards</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Charts/Slides</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>
XI	4 (T)	Explain the methods of nutritional assessment and nutrition education	<b>Nutrition assessment and nutrition education</b> <ul style="list-style-type: none"> <li>• Objectives of nutritional assessment</li> <li>• Methods of assessment – clinical examination, anthropometry, laboratory &amp; biochemical assessment, assessment of dietary intake including Food frequency questionnaire (FFQ) method</li> <li>• Nutrition education – purposes, principles and methods</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> <li>• Demonstration</li> <li>• Writing nutritional assessment report</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Evaluation of Nutritional assessment report</li> </ul>

XII	3 (T)	Describe nutritional problems in India and nutritional programs	<p>National Nutritional Programs and role of nurse</p> <ul style="list-style-type: none"> <li>• Nutritional problems in India</li> <li>• National nutritional policy</li> <li>• <i>National nutritional programs</i> – Vitamin A Supplementation, Anemia Mukht Bharat Program, Integrated Child Development Services (ICDS), Mid-day Meal Scheme (MDMS), National Iodine Deficiency Disorders Control Program (NIDDCP), Weekly Iron Folic Acid Supplementation (WIFS) and others as introduced</li> <li>• Role of nurse in every program</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture cum Discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Very short answer</li> </ul>
XIII	2 (T)	<p>Discuss the importance of food hygiene and food safety</p> <p>Explain the Acts related to food safety</p>	<p>Food safety</p> <ul style="list-style-type: none"> <li>• Definition, Food safety considerations &amp; measures</li> <li>• Food safety regulatory measures in India – Relevant Acts</li> <li>• Five keys to safer food</li> <li>• Food storage, food handling and cooking</li> <li>• General principles of food storage of food items (ex. milk, meat)</li> <li>• Role of food handlers in food borne diseases</li> <li>• Essential steps in safe cooking practices</li> </ul>	<ul style="list-style-type: none"> <li>• Guided reading on related acts</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz</li> <li>• Short answer</li> </ul>
XIII	2 (T)	<p>Discuss the importance of food hygiene and food safety</p> <p>Explain the Acts related to food safety</p>	<p>Food safety</p> <ul style="list-style-type: none"> <li>• Definition, Food safety considerations &amp; measures</li> <li>• Food safety regulatory measures in India – Relevant Acts</li> <li>• Five keys to safer food</li> <li>• Food storage, food handling and cooking</li> <li>• General principles of food storage of food items (ex. milk, meat)</li> <li>• Role of food handlers in food borne diseases</li> <li>• Essential steps in safe cooking practices</li> </ul>	<ul style="list-style-type: none"> <li>• Guided reading on related acts</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz</li> <li>• Short answer</li> </ul>

Food born diseases and food poisoning are dealt in community health Nursing I

## Bibliography :

- 1) Shubhangi Joshi, Nutrition and Dietetics 2 nd edition, Tata McGraw – Hill publishing company Limited, New Delhi, 2002.
- 2) Dr. M. Swaminathan, Handbook of Food and Nutrition, The Bangalore printing and publishing Co. Ltd. (Banglore press) 2004.
- 3) C. Gopalan, B. V. Ramasastri and S.C. Balasubramanian Nutritive value of Indian Foods, National Institute of Nutrition, Indian Council of Medical Research, Hyderabad 1999.
- 4) Joshi V.D. Handbook of Nutrition and Dietetics vora medical publications, 1999.
- 5) Kusum Gupta (L. C.Guple, Abhishek Gupta) Food and Nutrition Facts and Figures, 5th edition Jaypee brothers Medical publications (P) Ltd., New Delhi, India 2003.
- 6) T. K. Indrani, Nursing Manual of Nutrition and Therapeutic Diet, 1st edition Jaypee Brothers medical publishers (P) Ltd., 2003.
- 7) Antia – Clinical Dietetics and Nutrition, ed., 4th .

## Suggested Assessment/ Evaluation Methods

<b>Scheme of Internal Assessment of theory out of 25 marks</b>					
<b>Sr. No</b>	<b>Theory</b>	<b>Quantity</b>	<b>Marks</b>	<b>Round off</b>	<b>Final Round off IA</b>
<b>1.</b>	Class Test I		50 marks	30	Out of 15
<b>2.</b>	Class Test II		75 Marks	30	
<b>3.</b>	Written Assignment	2	50	10	Out of 10
<b>4.</b>	Seminar/Microteaching/individual presentation	2	50	12	
<b>5.</b>	Group project/Work/Report	1	50	6	
<b>6</b>	Attendance	(95-100%: 2 marks, 90-94: 1.5 marks, 85-89: 1 mark, 80-84: 0.5 mark, <80: 0)		2	
<b>(Marks of each component to be rounded of the respective columns marks and the final IA need to be calculated out of 25 (15+10).</b>					