

Human Nutrition

Course Code: NFE- 113 (Theory - 3 credits)

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Class	Content of the discussion	Method / Remarks
Contextualization	Basic facts and principles of human nutrition are presented. Study includes the physiological factors of food intake and utilization with emphasis on nutrition education for dietary improvements of groups and individuals. Emphasis is placed on the science of nutrition, the study of nutrients and of their ingestion, digestion, absorption, transport, metabolism, interaction, storage and excretion. Food group plans, the Dietary Guidelines, Food Exchange System, Recommended Dietary Allowances and other standards are reviewed to serve as a foundation for food selection.	iQAC
Objectives	At the end of this course the students will be able to: <ol style="list-style-type: none"> 1. To be able to discriminate in dealing with a vast amount of nutrient information. 2. Make decisions concerning nutrient claims, separating fact from fallacy. 3. Recognize the consequences of over nutrition, under-nutrition, and malnutrition. 4. Describe the principle of caloric balance. 5. Apply the concepts of nutrition in personal food selection. 6. Assist others in planning healthy adequate diets. 7. Identify the major nutrients, their functions, interactions, and needs of the body. 8. Select and use appropriate guidelines for food selection and provide for adequacy, balance, calorie control, moderation, variety, and density. 9. Describe the role of proper nutrition for athletes and others involved in physical activity. 10. Identify signs, physical consequences, and a referral system for common eating disorders. 11. Recognize and advocate the principles of nutrition that promote health and prevent disease throughout the life cycle. 	
Lecture: 1 Introductory Class and know-how about DIU-BLC	<ul style="list-style-type: none"> • Learning philosophy and Blended Learning System (BCL). • Quiz and Exam Procedures. • Assessment criteria. 	PPT

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Lecture: 2 Basics of Human Nutrition	<ol style="list-style-type: none"> 1. What is the study of human nutrition? 2. Nutrients: definition and classification 3. How body utilizes nutrients? 4. Conceptual framework for understanding human nutrition from multidisciplinary point of view 	<p>Game</p> <p>Videos</p>
Lecture: 3-4 Cell and Tissue	<ol style="list-style-type: none"> 1. What is cell? 2. Structure and function of sub-cellular organelles 3. Tissues- definition and classification 	<p>PPT</p> <p>Video</p>
Quiz- 1 (one) + Video Demonstration		
Lecture: 5-6 Body Composition	<ol style="list-style-type: none"> 1. Definition and use 2. 5 levels: atomic, molecular, cellular, tissue, whole body 3. Percentage of nutrient components at each level 	<p>Demonstration</p> <p>Video</p>
Lecture: 7-8 Body Fluid and Compartments	<ol style="list-style-type: none"> 1. Intravascular, interstitial and intracellular 2. Composition of body fluids 3. Fluid and solute movement between compartments 4. disorders of the fluid balance: edema and dehydration 	<p>Demonstration</p> <p>Model</p> <p>Video</p>
Lecture: 9-10 Carbohydrates	<ol style="list-style-type: none"> 1. Sources, 2. Classification 3. Basic chemical structure: monosaccharides, disaccharides and polysaccharides; fischer and Haworth projections; D and L configurations 4. Functions of carbohydrates in human body 5. Glycosidic bond 6. Reducing and non reducing sugars; aldose and ketose 	<p>Visual Presentation</p> <p>Video</p>
Lecture: 11-12 Proteins	<ol style="list-style-type: none"> 1. General structure and properties 2. Amino acids- structure, classification and function 3. General functions of proteins 4. Methods for estimating protein quality 	<p>PPT</p> <p>Model Video</p>
Quiz- 2 (Two) + Video Demonstration		
Lecture: 14 Fats	<ol style="list-style-type: none"> 1. Definition 2. Classification - on the basis of chemical composition, fatty acids, requirement, sources 3. Structure of lipids 	<p>PPT</p> <p>PDF</p> <p>Articles</p>
Lecture: 15 Fat Soluble Vitamins	<p>Vitamins- A, D, E, K</p> <ol style="list-style-type: none"> 1. Definition, classification, chemical name, general function, 2. Food sources, 3. Deficiency disease and Toxicity 	<p>PPT</p> <p>PDF</p> <p>Videos</p>
Lecture: 16-17 Water Soluble Vitamins	<p>Vitamins- B Complex and C</p> <ol style="list-style-type: none"> 1. Definition, classification, chemical name, general function, 2. Food sources, 3. Deficiency disease and Toxicity 	<p>PPT</p> <p>PDF</p> <p>Videos</p>
Quiz- 3 (three) + Video Demonstration		
Lecture: 19 Minerals	<ol style="list-style-type: none"> 1. Definition, classification, chemical name, general function, 2. Food sources, 3. Deficiency diseases and toxicity 	<p>PPT</p> <p>News Link</p>

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Lecture: 20 Malnutrition	1. Malnutrition- definition, consequences, causes 2. Double burden of malnutrition 3. Protein Energy Malnutrition	PPT PDF Videos
Lecture: 21 Nutritional Status	1. Definition, BMR/BMI definition and estimation, relationship between nutrition and health 2. Calculation of BMI and BMR	PPT PDF Videos
Lecture-22	Presentation and Assignment	Video

References:

1. Normal and Therapeutic Nutrition- C. H. Robinson
2. Advanced Text Book on Food and Nutrition- Vol-1, M. Swaminathan
3. Food Science- N. N. Potter
4. Text Book of Human Nutrition- M. S. Bamji, N. P. Rao and V. Reddy (eds)
5. Human Nutrition in the Developing World- Latham MC.
6. Introduction to Human Nutrition- Michael J Gibney (2nd edition)
7. Principles of Human Nutrition- Martin Eastwood (2nd edition)

Course Assessment:

1. Class attendance	: 7
2. Class test (quiz)	: 15 (average of 3 classes)
3. Assignment and Presentation	: 13 (8+5)
5. Midterm Examination	: 25
6. Final Examination	: 40

Total 100