



P.G.Diploma in Nutrition and Dietetics

Year	I	Course Type: Core Compulsory Course No:NDC101 Course Title: Human Nutrition	Credits	4
Semester	I		Hours/wk	4

Objectives	<ol style="list-style-type: none">1. To enable the students to understand Needs of nutrition for human and their role in living healthy life2. To present and discuss methods of determining nutrient requirements for humans and discuss the current figures of nutritional requirements3. To enable them to translate the knowledge into practical guidelines for dietary needs of humans at different stages of life4. To enable them to understand the application of the recent knowledge of nutrition.
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COURSE CONTENT / SYLLABUS-THEORY & PRACTICAL

Unit I	<p>Energy Metabolism and Carbohydrates</p> <ol style="list-style-type: none">1. Energy: Basic Concepts<ul style="list-style-type: none">• Definition and Components of Energy Requirement• Factors Affecting Energy Expenditure and Requirement• Methods of Estimation of Energy Expenditure and Requirements• Current recommendations for energy intake of different age, sex groups• Disorders of energy metabolism : Obesity and under nutrition• Short term and long term weight maintenance (Gut fill cues, Glucostat theory, Lipostattheory)2. Carbohydrates<ul style="list-style-type: none">• Digestion, absorption and utilization ,• Functions&Classification of Carbohydrates• Regulation of Blood Glucose Concentration• Simple and Complex carbohydrates, Non-starch polysaccharides and fibre constituents and their role in Nutrition.• Glycaemic Index , Glycaemic load and Satiety index: Clinical implications• Disorders related to carbohydrate metabolism• Modification of Carbohydrate Intake for Specific Disorder
Unit II	<p>Proteins& Lipids</p> <ol style="list-style-type: none">1. Proteins<ul style="list-style-type: none">• Classification, Food Sources• Digestion, Absorption and Transport, Functions• Improvement of Quality of Protein in the Diet• Human requirements for proteins (RDA)• Methods of Estimating and Assessing protein Requirements at Different StagesLife Cycle• Protein Deficiency2. Lipids<ul style="list-style-type: none">• Basic Facts

	<ul style="list-style-type: none"> • Types of Fats and its Metabolism (digestion, absorption, transport) • Functions of Fat and Oils • Assessment of Lipid status • Nutritional Requirements of Fats and Oils, Visible and invisible fats in diets • Excessive Fat Intake: Changing Trends in Dietary Intake Eating Out • Diseases: Association and Preventive Measures
Unit III	<p>Fat Soluble Vitamins – A, D, E, K & Water Soluble Vitamins (Thiamine, Riboflavin, Niacin, Pyridoxine, Folic acid, Ascorbic acid, Biotin)</p> <p>1. Fat Soluble Vitamins – A, D, E, K</p> <ul style="list-style-type: none"> • Basic Facts • Structures of vitamins • Digestion, absorption, transport and metabolism • Food Sources of Vitamins • Bioavailability : Modulators • Function • Assessment of vitamin status • Interaction with other nutrients • Toxicity and deficiency • RDA <p>2. Water Soluble Vitamins (Thiamine, Riboflavin, Niacin, Pyridoxine, Folic acid, Ascorbic acid, Biotin)</p> <ul style="list-style-type: none"> • Basic Facts • Structures of vitamins • Digestion, absorption, transport and metabolism • Food Sources of Vitamins • Bioavailability : Modulators • Function • Assessment of vitamin status • Interaction with other nutrients • Toxicity and deficiency • RDA
Unit IV	<p>Minerals (Calcium, Phosphorous, Iron, Copper, Zinc, Iodine) & Trace elements (Selenium, Chromium, sodium, Potassium)</p> <ul style="list-style-type: none"> • Sources • Digestion, absorption, transport, metabolism • Biochemical function • Deficiency and toxicity • RDA • Interaction with other nutrients

References

Books

1. Mahan KL and Stump SE (2007). Krause's Food and Nutrition Therapy (12th ed.).
2. Saunders Publishing Shils ME, Olson JA, Shike M, Ross AC, Cabellaro B and Cousins RJ (2006). Modern nutrition in health and diseases. (10th ed.). Lippincott, Williams and Wilkins publications.
3. Indian Council of Medical Research. Nutrient requirements and Recommended Dietary Allowances for Indians. Latest edition.
4. Bredanier C. Advanced Nutrition
5. Human energy requirement (2004). Report of a joint FAO/WHO/UNU Expert consultation, Rome, 17-24 October 2001. FAO, Food & Nutrition technical Report series 1.
6. Longvah, T., Ananthan, R., Bhaskarachary, K., & Venkaiah, K. (2017). Food Composition Tables. Hyderabad: National Institute of Nutrition.
7. కండామెంట్స్ ఆండ్ క్యూస్ యెండ్ న్యూట్రిషన్

Journals

1. Journal of Nutrition
2. American Journal of Clinical Nutrition.
3. International Journal of Food Science and Nutrition.
4. Nutrition Research.