

Semester II

Fundamentals of Food Science and Nutrition

Objectives:

The course will enable the students to:

1. Understand the inter-relationship between food, nutrition and health
2. Know the methods and principles involved in cooking.
3. Understand the knowledge of food science and the changes occurring during food preparation
4. Know the methods and principles involved in cooking.
5. Learn to relate foods with their nutrient content

Course	T C	Pr C	Th C	Int M	Ext M	Total
Fundamentals of Food Science and Nutrition	4	2	2	25	75	100

Fundamentals of Food Science and Nutrition Theory

Module No.	Objectives	Content	Assessment
1	<p>This will enable students to:</p> <ol style="list-style-type: none">1. Know nutritional aspects of foods and their functions.2. Understand the importance and role of macronutrients in health3. Identify food sources4. Understand the principles of food science and discuss the relation between Food Science and Nutrition	<p>Introduction to Nutrition</p> <p>1: Terms used in Nutrition and Health. Definitions - Health, Nutrition, Nutrients, Foods, Diet, R.D.A., Balanced diet, Malnutrition, Under nutrition, Over nutrition, Optimum nutrition.</p> <p>2: Five Food Groups and Food guide, relationship between food and nutrition, functions of food, classification of nutrients, factors affecting food consumption and food acceptance.</p> <p>Macronutrients</p> <ol style="list-style-type: none">1. Carbohydrates2. Proteins3. Fats4. Water <p>- Classification, functions, sources,</p>	<p>25 Marks</p> <p>Quiz / assignments</p>

		requirements, deficiencies - Digestion, Absorption, Transport - Food Science principles	
2	This will enable students to: 1. Know the role of Vitamins and minerals in health 2. Identify the color pigments in foods 3. Understand the changes in color pigments	Micronutrients: Classification of Vitamins: A, D, E, K, Thiamin, Riboflavin, Niacin, Ascorbic Acid and Minerals: Calcium, Iron and Iodine - Functions, deficiencies sources, requirements - Digestion, Absorption, transport - Conservation of nutrients Color Pigments	25 Marks Quiz / assignments

Fundamentals of Food Science and Nutrition Practical

Objectives:

The course will enable the students to:

1. Relate weight and measures of raw foods with cooked amounts and associate them with serving size.
1. Apply the knowledge of food science and observe the changes occurring during food preparation.
2. List rich food sources of various nutrients and plan and prepare recipes

Module No.	Objectives	Content	Assessment
1	This will enable students to: 1. Understand the concept of portion size 2. Know the specified amounts and proportion of ingredients used in the recipe	Basics of Food Preparation 1. Cereal, pulse, milk, egg and vegetable and fruit preparation - Weights and measures - Standardization, portion size - Methods of food preparation - Food Science principles	25 marks Quiz

	<p>3. Understand the basic scientific principles and the preparation of food</p> <p>4. Learn the preparation methods to optimize nutrient content and conserve nutrients</p>	<ul style="list-style-type: none"> - Calculation of nutrients - Conservation of nutrients 	
2	<p>This will enable students to:</p> <p>1. Plan recipes and calculate nutrients</p> <p>2. Understand and relate the principles of food science to the preparation and methods to conserve nutrients</p>	<p>Plan and Prepare Recipes for One Serving:</p> <ul style="list-style-type: none"> - Energy: high and low calorie - Proteins - Calcium - Iron - Vitamin C - Vitamin A B- complex vitamins 	<p>25 marks</p> <p>Planning and Cooking</p>

References:

1. Mudambi, S.R. and Rajgopal, M.V. (2012), *Fundamentals of Foods and Nutrition* New Age International Pvt. Ltd.
2. Food Science 1st Edition (2012) Sheth Publications. Maharashtra State Board of Secondary and Higher Secondary education Pune.
3. Roday S. (2012) *Food Science and Nutrition* (2nd Ed.) Oxford University Press.
4. Joshi S. (2009) *Nutrition and Dietetics* McGraw Hill Higher Education
5. Robinson, and Lawler (1990) *Normal and Therapeutic Nutrition* (17th Edn) Macmillan Pub. Co.
6. Guthrie Helen (1986) *Introductory Nutrition*, Mosby College Publishing. Times Mirror
7. Wardlaw G.M (1997) *Contemporary Nutrition, Issues and Insights*, 3rd Edition Tata McGrawHill Inc. Boston.
8. Guthrie H. A. and Frances M. (1994) *Human Nutrition* William C Brown Pub.