Course Information Form (CIF)

Course Code: BIO 120

Course Title: Fundamentals of Nutrition

Department: Natural Sciences
PCS Code: 1.1 - Baccalaureate/Transfer
CIP Code: 19.0501
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-0-3
Credit Hour Distribution:

Lecture: 3	Lab: 0	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Examines food sources and the functions of nutrients, principles of weight management, nutrition requirements during the life cycle, and the relationship between nutrition and health. Stresses practical application of nutrition concepts and explores current nutrition controversies.

General Course Objectives

Students will evaluate functions and food sources of required nutrients; apply the rationale behind the nutrient facts panel and MyPlate.gov; develop nutrient labels, ingredient lists and eating plans; interpret information of food labels; relate principles of energy balance and guidelines and standards for weight management; examine relationship between diet and chronic disease and explain the basic principles of food safety.

Minimum Placement Levels

English	Reading	Math
Placement out of ENG 099	Placement out of CCS 098	None

Prerequisites

None

Methods of Evaluation

9-11 objective module exams, 9-11 module assignments, 9-11 graded discussions, 1-3 special assignments, and 1 comprehensive final exam.

Instructional Materials and Additional Supplies

Nutritional Sciences From Fundamentals to Food, Current edition; McGuire; Wadsworth/Cengage Learning 9780357853368

Course Content

General Learning Outcomes (GLOs)

- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Food Choices	1. List reasons why people choose to eat specific foods. 2. Interpret the reasons people need food. 3. Describe sources of reliable nutrition information. 4. Discuss what a healthy diet looks like.	4	0	0
Nutrition Standards and Guidelines	1. List six nutrient categories. 2. Explain the rationale behind RDA. 3. Describe chronic health problems related to diet. 4. Summarize recommendations regarding levels of fat, carbohydrate, and protein in the diet. 5. Define nutrient density. 6. Name six food groups in MyPlate.gov and describe principles behind its organization. 7. Demonstrate the ability to use MyPlate in diet planning. 8. Interpret information on food labels and understand the standards used on food labels such as the RDA and DRV.	4	0	0
Digestion	1. Label major parts of the digestive system and describe their functions. 2. Label accessory organs and glands. 3. Review structure and functions of cells, enzymes, and hormones. 4. Discuss problems that can surface with digestion.	4	0	0
Carbohydrates	1. Describe the importance of monosaccharides, disaccharides, and polysaccharides in human nutrition, including structures and food sources. 2. Define dietary fiber; distinguish between soluble and insoluble fiber in terms of food sources and functions in the body. 3. Trace the digestion and absorption of carbohydrates. 4. Explain the role of specific enzymes and hormones important in CHO digestion. 5. Explain the role of glucose in the body.	4	0	0
Lipids: Fats, Oils, Phospholipids, Cholesterol, and Heart Disease	1. Discuss the major functions, structures, and food sources of triglycerides/triacylglycerides, phospholipids, and cholesterol. 2. Name the essential fatty acids, their functions, and their food sources. 3. Describe differences between saturated, mono-unsaturated fatty acids, polyunsaturated fatty acids, and trans fats. 4. Trace the digestion and absorption of lipids, including the important enzymes and hormones involved. 5. Describe the lipoproteins and their link to the development of heart disease. 6. Discuss risk factors for heart disease. 7. Demonstrate the ability to plan a low-fat diet. 8. Describe the artificial fats currently in use today and consider the impact of their use on nutrient intake and health.	4	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Proteins, Amino Acids, and Vegetarian Diets	1. Describe the basic structure of amino acids, and describe the structure and general functions of proteins in the body. 2. Trace digestion and absorption of proteins, including important enzymes and hormones. 3. Describe protein quality and amino acid profiles as they pertain to protein needs. 4. Name food groups supplying protein in the U.S. Exchange System. 5. Define incomplete and complete proteins. 6. Explain how to use the method of mutual supplementation to meet protein needs. 7. Discuss the pros and cons of different forms of vegetarianism. 8. Describe protein quality and amino acid profiles as they pertain to protein needs.	4	0	0
Diet Analysis Project	1. Measure and record food intake. 2. Use a web-based program to access, retrieve, and process information. 3. Interpret the output and reflect on how to improve dietary patterns/choices.	2.5	0	0
Fat-Soluble Vitamins	1. Identify food sources of fat soluble vitamins; describe major functions and deficiency and toxicity symptoms of all vitamins. 2. Describe general difference between fat- and water- soluble vitamins. 3. Describe role of vitamins A and E as antioxidants.	2	0	0
Water Soluble Vitamins	1. Identify food sources, general functions, and deficiency and toxicity symptoms of water soluble vitamins. 2. Interpret the role of B vitamins in energy metabolism. 3. Discuss how food should be selected, stored, and prepared to preserve vitamin content. 4. Summarize arguments for and against the use of supplements. 5. Explain the role of folic acid in reducing the risk of neural tube defects.	2	0	0
Water	1. List major functions of water in the body. 2. List sources of water. 3. Describe ways water is lost from the body.	1	0	0
Major Minerals	1. Identify food sources and general functions of the major minerals. 2. List factors that affect calcium absorption. 3. Define osteoporosis hyponatremia and hypertension, and describe factors that may contribute to the development of diseases affected by the major minerals. 4. Identify calcium-rich foods. 5. Demonstrate the ability to plan a diet that meets the RDA for calcium.	2	0	0
Trace Minerals	1. Name the major functions, food sources, and deficiency symptoms of iron, iodine, and zinc. 2. Describe the general functions of trace minerals. 3. Identify factors that affect iron absorption.	1	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Energy Balance and Weight Control	1. Describe indirect methods of assessing obesity, including BMI, weight/hip ratio, fat-folds, underwater weighing, bioelectrical impedance, etc. 2. Name major components of energy expenditure. 3. Define basal metabolic rate and list factors that can affect it. 4. Review inherited metabolic and environmental factors that can contribute to obesity. 5. Explain how the body adapts to different types of diets, such as a very low calorie diet, a very low carbohydrate diet, a mixed diet, etc. 6. Discuss the importance of reduced calorie intake, behavior change, and exercise in long-term weight loss programs.	3	0	0
Eating Disorders	1. List the diagnostic criteria for the different types of eating disorders now recognized. 2. Describe behavioral and psychological characteristics of people with eating disorders. 3. Describe the medical and health problems resulting from eating disorders. 4. Describe treatment and long-term outlook.	1	0	0
Food Safety	1. List principles of safe food handling, including ways to minimize the risk of food-borne illness. 2. Examine current topics related to food safety.	4	0	0
Calculation of Nutrients	1. Calculate word problems associated with all objectives covered in class. 2. Evaluate how calculations play a major role in the science of nutrition.	2.5	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0