Introduction to Nutrition

Course Text

Smith, Anne, et al. *Wardlaw's Contemporary Nutrition*. 12th ed., Mcgraw-Hill Education, 2022.

The text is provided digitally as part of the course enrollment. Students may find used, new, or rental print copies by searching for the ISBN.

Course Description

This course explores:

- The types of nutrients you need
- How your body uses nutrients
- How nutrition affects your health
- How your nutrient needs change at different stages of your life

This course also explores how psychology, society, and your own values and beliefs affect what and how you eat.

Course Objectives

After completing this course, students will be able to:

- Describe the characteristics of essential nutrients and evaluate the use of scientific research to determine nutrient needs.
- Examine the various factors that make a healthy diet and design menus using MyPlate and Dietary Guidelines.
- Delineate the relationship between nutrition and the functions of each system of the human body.
- Outline the functions of proteins and discuss the effects of deficiency and excess intake.
- Evaluate the nutritional role and deficiency symptoms for each vitamin.
- Assess the importance of water and minerals to the human body.
- Evaluate the nutrient needs of adults and older adults.
- Describe problems associated with obesity and discuss how it can be treated.
- Discuss healthy ways to buy, prepare, cook, and preserve food.
- Outline the causes and effects of a few eating disorders and discuss the possible modes of treatment.
- Outline the health concerns related to carbohydrate intake.
- Assess the health concerns related to lipid intake.

- Suggest dietary recommendations for normal growth and development for infants, preschoolers, school-age children, and teenagers.
- Recommend a food plan to be followed during pregnancy and lactation.

Course Prerequisites

There are no prerequisites to take Introduction to Nutrition.

Important Terms

In this course, different terms are used to designate tasks:

- **Proctoring**: all final exams require proctoring which can be completed conveniently from your home. A webcam is required.
- **Tutoring**: memberships include online tutoring for students to access with any content/subject related questions in the place of faculty. If your tutor is not able to answer your questions please contact a student advisor.
- **Practice Exercise**: A non-graded assignment to assist you in practicing the skills discussed in a topic.
- **Homework**: Ungraded, content-focused exercises providing feedback. You have unlimited attempts.
- **Quiz**: A short graded topic-based assessment.
- **Exam**: A longer, cumulative graded assessment

Academic Integrity Statement

Academic integrity is the pursuit of scholarly activity in an honest, truthful and responsible manner. Violations of academic integrity include, but are not limited to, plagiarism, cheating, fabrication and academic misconduct. Failure to comply with the Academic Integrity Policy can result in a failure and/or zero on the attempted assignment/examination, a removal from the course, disqualification to enroll in future courses, and/or revocation of an academic transcript.

Course Completion Policy

In order for a course to be considered complete, all required coursework must be attempted, submitted, and graded. Required coursework consists of graded assignments. Any Academic Integrity Policy violations may prevent a course from being considered complete.

Course Evaluation Criteria

Your score provides a percentage score and letter grade for each course. A passing percentage is **70%** or higher.

There are a total of 1000 points in the course:

Topic	Assessment	Points Available
4	Graded Exam 1	125

Topic	Assessment	Points Available
8	Graded Exam 2	125
8	Graded Midterm Exam	200
12	Graded Exam 3	125
16	Graded Exam 4	125
17	Graded Final Exam	300
Total		1000

Course Topics and Objectives

Topic	Topic	Subtopics	Objectives
1	Nutrition and You	• Classes and Sources of Nutrients • The Need to Eat • Scientific Research to Determine Nutrient Needs • Nutrition and Changing Lifestyle	• Describe the characteristics of essential nutrients and classify the sources of nutrients. • Explain the factors that influence the desire to eat. • Evaluate the use of scientific research to determine nutrient needs. • Appraise the impact of a changing lifestyle on the North American diet and discuss how the problem of undernutrition in North America can be resolved.
2	Designing a Healthy Diet	• Healthy Diet • Nutrition Assessment • Diet Plans • Food Labels	• Explain the various factors that contribute to a healthy diet. • Summarize the ABCDEs of nutritional assessment. • Evaluate MyPlate and Dietary Guidelines as diet planning tools and design a menu using MyPlate and Dietary Guidelines. • Analyze the nutrition facts on food labels.

Topic	Topic	Subtopics	Objectives
3	Human Physiology	• Cell Biology • Physiological Systems • The Digestive Process • Common Problems with the Digestive System	• Trace the contribution of the constituents of food to the normal functioning of cellular components. • Delineate the relationship between nutrition and the functions of each system of the human body. • Explore the relationship between nutrition and the functions of each part of the digestive system. • List the common problems with the digestive system and evaluate the possible modes of treatment.
4	Carbohydrates	• Types of Carbohydrates • Carbohydrates in Foods • Digestion and Absorption of Carbohydrates • Health Concerns Related to Carbohydrate Intake	• Describe the structure of various types of carbohydrates. • Compare and contrast the different types of carbohydrates in food sources, sugar alcohols, and alternative sweeteners. • Explain how carbohydrates are digested by the body and assess its nutritional role. • Outline the health concerns related to carbohydrate intake.
5	Lipids	• Types of Lipids • Lipids in Foods • Digestion and Absorption of Lipids • Health Concerns Related to Lipid Intake	• Identify and describe each group of lipids. • Compare and contrast the different groups of lipids in food sources. • Explain the process of digestion and absorption of lipids and summarize its nutritional role in the body. • Assess the health concerns related to lipid intake.

Topic	Topic	Subtopics	Objectives
6	Proteins	• The Building Blocks of Proteins: Amino Acids • Proteins in Foods • Digestion and Absorption of Proteins • Functions of Proteins	• Trace the formation of proteins from amino acids. • Explain the various plant and animal sources of proteins. • Explain the process of digestion and absorption of proteins in the body. • Outline the functions of proteins and discuss the effects of deficiency and excess intake.
7	Fitness and Weight Control	• Energy Balance • Weight Estimation • Fitness and Nutrition • Treatment of Obesity • Popular Diets	• Describe the concept of energy balance and explain how the amount of energy used by the body is measured. • Evaluate the various ways to estimate healthy weight and obesity. • Outline the relationship between nutrition and fitness. • Describe problems associated with obesity and discuss how it can be treated. • Evaluate the consequences of some popular diets.
8	Vitamins	• Classification of Vitamins • Digestion of Vitamins • Functions of Vitamins • Vitamin Supplements	• Identify food sources of fat-soluble and water soluble vitamins. • Explain the process of digestion and absorption of vitamins in the body. • Evaluate the nutritional role and deficiency symptoms for each vitamin. • Evaluate the use of vitamin supplements.
9	Water and Minerals	• Water and Minerals • Functions of Water • Classification of Minerals • Functions of Minerals	• State the functions of water in the body. • Classify minerals into major and trace and identify food sources of major and trace minerals.

Topic	Topic	Subtopics	Objectives
		• Mineral Deficiency and Excess	• Describe the nutritional role of minerals in the body. • Identify and explain problems associated with deficient and excess intake of minerals and recommend appropriate treatment.
10	Sports Nutrition	• Energy Sources • Dietary Advice for Athletic Performance • Dietary Advice for Endurance Performance • Fitness Program	• Explain how the different constituents of food help produce energy for physical activity. • Assess the dietary requirements for athletes. • Evaluate the need for a specialized diet before, during, and after endurance exercise. • Design a fitness program.
11	Eating Disorders	• Healthy Attitudes Towards Food • Anorexia Nervosa • Bulimia Nervosa • Some More Eating Disorders	• Summarize the importance of cultivating healthy attitudes towards food. • Outline the causes and effects of anorexia nervosa and discuss the possible modes of treatment. • Evaluate the causes and effects of bulimia nervosa and discuss the possible modes of treatment. • Create a tabular representation of the causes and effects of eating disorders such as binge eating and the female athletic triad.
12	Food Safety	• Prevention of Foodborne Illness • Treatment of Foodborne Illness • Food Additives and Pesticides	• Discuss healthy ways to buy, prepare, cook, and preserve food. • List some of the common microorganisms that contaminate food and discuss the symptoms

Topic	Topic	Subtopics	Objectives
		• Environmental Contaminants	and possible treatments of foodborne illness. • Assess the need for chemical additives and pesticides and evaluate their impact on health. • List the sources of environmental contamination in food and discuss how their toxic effects can be prevented.
13	Global Nutrition	• Food insecurity, nutrition security, hunger, and malnutrition • Global nutrition	• Examine malnutrition in the United States, and highlight several programs established to combat suboptimal nutrition. • Examine global nutrition, and evaluate the factors related to health outcomes. • Outline possible solutions to malnutrition in the developing world. • Evaluate the consequences of malnutrition during critical periods in a person’s life.
14	Nutrition in Pregnancy	• Diet During Pregnancy • Common Problems in Pregnancy • The Process of Lactation • Advantages of Breastfeeding	• Correlate the physiological changes that occur in a pregnant woman with the consequent changes in dietary requirements. • Recommend dietary plans to tackle common problems associated with pregnancy. • Describe the physiological process of breastfeeding and recommend a food plan for a breastfeeding mother. • Outline the advantages of breastfeeding and explain the nutritious qualities of human milk.
15	Nutrition from Infancy	• Nutritional Needs of Infants	• Evaluate the nutritional needs of infants and suggest dietary

Topic	Topic	Subtopics	Objectives
		• Nutritional Needs of Preschoolers and School-Age Children • Nutritional Needs of Teenagers	recommendations for normal growth and development. • Assess the nutritional needs of preschoolers and school-age children and suggest dietary recommendations for normal growth and development. • Correlate the nutritional needs and concerns of a teenager with strategies to overcome nutritional problems.
16	Nutrition in Adulthood	• Nutrition Needs of Young and Middle-Aged Adults • Nutrition Needs of Older Adults	• Summarize the dietary requirements of young and middle aged adults and analyze the nutrition related problems of adulthood. • Discuss the nutritional implications of old age and evaluate the nutrient needs of old age.
17	Review	• Review	• Review and final assessment

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