Introduction to Nutrition

Course Text

- Wardlaw, Gordon M. and Anne M. Smith. Contemporary Nutrition, Updated Eighth Edition, McGraw-Hill. ISBN: 9780077354817 [This text is available as an etextbook at purchase or students may find used, new, or rental copies at this link]

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

Upon completion of this course students should 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 MyPyramid 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:
- 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

Course Evaluation Criteria

StraighterLine provides a percentage score and letter grade for each course. See Academic Questions section in FAQ for further details on percentage scores and grading scale. A passing percentage is 70% or higher.

If you have chosen a Partner College to award credit for this course, your final grade will be based upon that college's grading scale. Only passing scores will be considered by Partner Colleges for an award of credit.

There are a total of 1000 points in the course:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Assessment</th>
<th>Points Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Topic 1 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>Topic 2 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Topic 3 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>Topic 4 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Topic 5 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>Topic 6 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>Topic 7 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>Topic 8 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>Graded Midterm Exam</td>
<td>125</td>
</tr>
<tr>
<td>9</td>
<td>Topic 9 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>Topic 10 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>Topic 11 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>12</td>
<td>Topic 12 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>13</td>
<td>Topic 13 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>14</td>
<td>Topic 14 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>15</td>
<td>Topic 15 Quiz</td>
<td>25</td>
</tr>
<tr>
<td>16</td>
<td>Graded Final Exam</td>
<td>500</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

Course Topics and Objectives
<table>
<thead>
<tr>
<th>Topic</th>
<th>Topic</th>
<th>Subtopics</th>
<th>Objectives</th>
</tr>
</thead>
</table>
| 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 MyPyramid and Dietary Guidelines as diet planning tools and design a menu using MyPyramid and Dietary Guidelines.  
● Analyze the nutrition facts on food labels. |
| 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 | ● Identify and describe each group of lipids.  
● Compare and contrast the different groups of lipids in food sources. |
<table>
<thead>
<tr>
<th>Lipids</th>
<th>Proteins</th>
<th>Fitness and Weight Control</th>
<th>Vitamins</th>
<th>Water and Minerals</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Explain the process of digestion and absorption of lipids and summarize its nutritional role in the body.</td>
<td>- 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.</td>
<td>- 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.</td>
<td>- 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.</td>
<td>- State the functions of water in the body. Classify minerals into major and trace and identify food sources of major and trace minerals. 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.</td>
</tr>
<tr>
<td>Page</td>
<td>Topic</td>
<td>Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 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  
- Environmental Contaminants  
- Discuss healthy ways to buy, prepare, cook, and preserve food.  
- List some of the common microorganisms that contaminate food and discuss the symptoms 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   | 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. |
| 14   | Nutrition from | - Nutritional Needs  
- Evaluate the nutritional needs of |
<table>
<thead>
<tr>
<th>Infancy</th>
<th>of Infants ● Nutritional Needs of Preschoolers and School-Age Children ● Nutritional Needs of Teenagers</th>
<th>Infants and suggest dietary 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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Nutrition in Adulthood</td>
<td>Nutrition Needs of Young and Middle-Aged Adults ● Nutrition Needs of Older Adults</td>
</tr>
<tr>
<td>16</td>
<td>Review</td>
<td>Review</td>
</tr>
</tbody>
</table>