Course Number and Title: BIO 115 Nutrition

Campus Location:
Georgetown, Dover, Stanton, Wilmington

Effective Date:
2018-51

Prerequisite:
ENG 090 or ENG 091, SSC 100 or concurrent

Co-Requisites:
None

Course Credits and Hours:
3.00 credits
3.00 lecture hours/week
0.00 lab hours/week

Course Description:
This course covers the basic principles of nutrition and their application to health and well-being of humans throughout the life cycle. The role of diet therapy in the prevention and treatment of disease is included.

Required Text(s):
Obtain current textbook information by viewing the campus bookstore - https://www.dtcc.edu/bookstores online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:
None

Schedule Type:
Classroom Course
Hybrid Course
Online Course

Disclaimer:
None

Core Course Performance Objectives (CCPOs):

1. Identify the factors of diet planning that influence nutritional status. (CCC 6)
2. Identify the role of carbohydrates, fats, and proteins in the body. (CCC 6)
3. Describe the role of water, vitamins, and minerals in nutrition, including their functions, food sources, and effects of deficiency and toxicity. (CCC 6)
4. Analyze the pathway of the digestion, absorption, and metabolism. (CCC 6)
5. Relate changes in nutritional needs to growth and development. (CCC 6)
6. Discuss the use of modified diets in the prevention and treatment of selected disease processes. (CCC 6)
7. Assess personal nutritional status. (CCC 6)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Identify the factors of diet planning which influence nutritional status.
   1. Explain the diet planning principles, which include adequacy, balance, calorie control, moderation, and variety.
   2. Describe physical, psychological, and economical factors that influence diet.
   3. Identify and describe Recommended Dietary Allowances (RDA).
   4. List key and current recommendations of the Dietary Guidelines for Americans.
   5. Describe the current Food Guide Pyramid.
   6. Calculate the caloric needs for male and female.
   7. Describe the importance of interpreting food labels, and discuss current food labeling laws.
   8. Describe the diets of lactovegetarians, ovovegetarians, and vegans.
   9. Evaluate the credibility of nutrition information.
2. Identify the role of carbohydrates, fats, and proteins in the body.
   1. List the six classes of nutrients.
2. Describe the characteristics and functions of carbohydrates, fats, and proteins.
3. Distinguish between simple and complex carbohydrates, fiber, monosaccharides, and polysaccharides.
4. Name the monosaccharides, disaccharides, and list three food sources of each.
5. Describe the digestion and metabolism of carbohydrates.
6. List the three classes of lipids found in the body and in foods.
7. Distinguish between saturated and unsaturated fats.
8. Describe the function of cholesterol in the body.
9. Describe the digestion and metabolism of lipids.
10. Define amino acid, protein, essential amino acid, enzymes, hormones, denaturation, complete protein, and incomplete protein.
11. Distinguish between essential and nonessential amino acids.
12. Describe the digestion and metabolism of proteins.

3. Describe the role of water, vitamins, and minerals in nutrition, including their functions, food sources, and effects of deficiency and toxicity.
   1. Define dehydration, water intoxication, water balance, ions, and electrolytes.
   2. Describe the characteristics of vitamins, in general.
   3. List the main classes of vitamins, and describe their similarities and differences.
   4. List the main food sources, major functions, deficiencies, and RDA of common vitamins.
   5. Differentiate between major minerals and trace minerals in the body.
   6. Examine the role of water in the human body.
   7. Evaluate the consequences of vitamin and mineral deficiencies and toxicities.

4. Describe the pathway of the digestion, absorption, and metabolism.
   1. Diagram the major organs of the gastrointestinal tract, and explain their functions.
   2. Discuss the role of enzymes and hormones secreted during the process of digestion.
   3. Evaluate the difference between chemical and physical digestion.
   4. Evaluate the digestion, absorption, and metabolism of carbohydrates, proteins, and fats.

5. Relate the changes in nutritional needs to the growth and development.
   1. Define energy, calorie, obesity, hunger, appetite, and basal metabolic rate (BMR).
   2. List the factors affecting basal metabolic rate and total metabolic rate.
   3. Define empty calories.
   4. Describe nutrient needs during pregnancy.
   5. Discuss appropriate weight gain in pregnancy.
   6. Compare and contrast breast and bottle feeding.
   7. Define fetal alcohol syndrome, gestational diabetes, toxemia, and hyperemesis gravid.
   8. Discuss the nutritional needs throughout childhood.
   10. Discuss the current thinking on food allergies.
   11. Describe the effect of mental illness on nutrition status.
   12. Describe the effects that prolonged illness can have on nutrition status.
   13. List effects of aging on nutritional status.
   14. Discuss the energy and nutrient needs of the older population.
   15. Describe food habits and choices of older adults.
   16. Identify the role of the immune system and its relation to nutrition status.

6. Describe the use of modified diets in the prevention and treatment of selected disease processes.
   1. List the problems associated with overweight and underweight.
   2. Describe two common eating disorders, including classic characteristics, family unit, physical and emotional changes, diagnosis, and treatment.
   3. Describe the underlying factors and the causes of weight imbalance.
   4. List the three main components of successful weight loss strategies.
   5. Define reflux, esophagitis, hiatal hernia, gastritis, peptic ulcer, and diarrhea.
   6. Describe the symptoms of reflux and three treatment measures to prevent it.
   7. Describe the symptoms and treatment of gastritis.
   8. List the causes, risk factors, symptoms, treatment, nursing, and dietary implications of peptic ulcers.
   9. Describe the dietary management of severe diarrhea.
   10. Describe the dietary management of the following conditions: pancreatitis, cystic fibrosis, inflammatory bowel disease, Crohn's disease, and colitis.
   11. Define diabetes mellitus, and discuss nutritional treatment and control.
   13. State the location and function of the gallbladder and the function and composition of bile.
   14. Describe the dietary management of a patient with gallstones.

7. Assess personal nutritional status.
   1. Describe the characteristics of a healthy weight loss program.
   2. List the characteristics of people who are successful with weight maintenance.
Evaluation Criteria/Policies:
Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>92 - 100</td>
<td>A</td>
</tr>
<tr>
<td>83 - 91</td>
<td>B</td>
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<tr>
<td>75 - 82</td>
<td>C</td>
</tr>
<tr>
<td>0 - 74</td>
<td>F</td>
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</tbody>
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Students should refer to the [Student Handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):
None

Disabilities Support Statement:
The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.