

## NUTRITION

Revised 12/6/2011

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<b><u>Course Number</u></b>	BIO 240
<b><u>Prerequisite(s)</u></b>	ENG 101, Math 101, BIO 100 or CHEM 100 or BIO 112
<b><u>Co-requisite(s)</u></b>	None
<b><u>Course Description</u></b>	<p>This course is an introduction to the essential aspects concerning the science of nutrition. Particular emphasis will be on the classes of nutrients and their physiological uses in the body. Body energy requirements and the nutritional status of the world will also be considered. The importance of organic polymers and monomers, vitamins, coenzymes, mineral cofactors, and other essential nutrients in metabolism, especially ATP synthesis will also be addressed. Current dietary recommendations, including the government's "My Plate", reading and understanding FDA regulated dietary labeling as well as current theory on the role of exercise and diet in maintaining general health will be discussed. Students will keep a personal 3 day nutritional diary including nutritional and caloric content and will be expected to present an oral presentation to the class on a current issue in nutrition.</p>
<b><u>Course Outcomes</u></b>	<p>Students should be able to demonstrate:</p> <ol style="list-style-type: none"><li>1. Rationality, logic and coherence through critical thinking;</li><li>2. Their ability to express themselves effectively in quantitative and qualitative terms;</li><li>3. The scientific method of inquiry;</li><li>4. Their ability to access, retrieve, synthesize and evaluate information.</li></ol>
<b><u>Textbook(s)</u></b>	<b><u>Contemporary Nutrition, Gordon M. Wardlaw and Anne M. Smith, 8th edition, McGraw-Hill</u></b> <b>ISBN #978-0-07-304054-7</b>
<b><u>References</u></b>	N/A
<b><u>Other Required Materials, Tools, and Equipment:</u></b>	Any additional resources (handouts) will be provided to the Student by the Instructor.
<b><u>Method of Instruction:</u></b>	Lecture and discussion, demonstrations, audio-visual materials, on-line resources, projects, quizzes and written exams.

<b><u>Grading System:</u></b>	90 - 100	=	A
	80 - 89	=	B
	70 - 79	=	C
	60 - 69	=	D
	Below 60	=	F

<b><u>Grade Calculation Method:</u></b>	Lecture exams (120 pts. each) x 5	=	600
	Food log/physical activity journal	=	100
	Presentation	=	100
	Final Exam (required)	=	200
		=	
		=	1000

**Attendance Policy:**      **See Student Handbook Pages 77-80**  
**The withdrawal date for Spring semester will be 4/2/12.**

**Academic Conduct:**      **ACADEMIC DISHONESTY**  
  
**Please See Student Handbook Page 98**  
  
**CELLULAR PHONES, PAGERS/BEEPERS**  
  
**Please See Student Handbook Pages 76-77**

**Class procedures:**      **Biology requires no one miss over 10 hours of lecture.**  
Preparation:  
1. Read over the material before coming to class.  
2. Come prepared to do the work each day.  
3. Be in your place with lecture notes at the beginning of each class period.  
4. Pay careful attention to the printed instructions.  
5. Be considerate of your class associates. Your activities may disturb them so they are unable to benefit from the lecture.  
6. Report immediately to the instructor any emergencies or injuries that occur.

**Accommodations:**      Students who need special accommodations in this class because of a documented disability should notify Student Disability Services by calling (864) 592-4818, toll-free 1-800-922-3679; via email through the SCC web site at [www.sccsc.edu/resources/disabilities](http://www.sccsc.edu/resources/disabilities); or by visiting the office located in the East Building Room 30-B on the SCC Central campus. Contacting Student Disability Services early in the semester gives the College an opportunity to provide necessary support services and appropriate accommodations.

**Course**  
**Competencies &**  
**Objectives:**

Upon completion of this course the student should be able to:

- I. Identify diet and lifestyle factors important in promoting health and preventing disease.
  - A. Identify classes and sources of nutrients, evaluate nutrient composition and calculate calorie (kcal) content of foods and diets.
  - B. Develop a healthy eating plan using “My Plate”, Dietary Guidelines, Recommended Dietary Allowances (RDAs), and other dietary standards.
  - C. Describe the components of the nutrition label and health claims and descriptors allowed on labels.
  - D. Outline the overall processes of digestion and absorption in the gastrointestinal tract and the role played by the liver, gallbladder and pancreas. Identify the major nutrition-related gastrointestinal health problems and approaches to treatment.
- II. Identify and explain the energy nutrients and the role of energy balance on health.
  - A. Explain the basic structure, function, digestion and absorption of carbohydrates, lipids, and proteins.
  - B. Distinguish between the different types of carbohydrates, lipids, and proteins and identify food sources of each. Differentiate our body’s use of and need for the different types of carbohydrates, lipids, and proteins.
  - C. Describe energy balance and uses of energy by the body. Compare methods of determining body composition.
  - D. Evaluate methods of weight-reduction including popular diets, behavior modification, physical activity, and surgery.
- III. Define the micronutrients vitamins and minerals. Describe the role of water, vitamins and minerals in promoting growth, development and maintenance of the body and in regulating body processes.
  - A. Classify vitamins as fat soluble or water soluble and list the major functions and deficiency symptoms of each vitamin. List major food sources of each vitamin.
  - B. Classify minerals as major or trace minerals and list the major functions and deficiency symptoms of each mineral. List major food sources of each mineral.
  - C. Explain the functions of water in the body. Discuss the importance of maintaining proper water balance, including methods of determining hydration status and fluid replacement during exercise.
- IV. Describe the relationship between nutrition and fitness and sports and eating disorders.

- A. Explain the effect of proper nutrition on achieving and maintaining physical fitness.
  - B. Discuss the different energy sources used by muscles during different types of exercise and discuss appropriate diets for different types of athletes.
  - C. Define the major eating disorders. Discuss causes, symptoms, and effects of anorexia nervosa, bulimia nervosa, and binge-eating disorder.
  - D. List the common microorganisms which cause food-borne illnesses and associated symptoms. Describe methods of preventing food-borne illness.
- V. Describe nutrition as it relates to specific life stages.
- A. List major physiological changes that occur in the body during pregnancy and how nutrient needs are altered. Identify which nutrients may need to be supplemented during pregnancy and why.
  - B. Describe the extent to which nutrition affects infant growth and psychological development. Discuss nutrition concerns specific to preschool children, school-age children and teenagers.
  - C. Describe how physiological changes that occur during adulthood affect nutritional needs. Identify nutrition-related health issues of adults and make recommendations to promote healthy aging.