**BIOL 323: The Physiology of Nutrition and Disease**  
Spring 2007; Sections #1 (CRN 21312) & #2 (CRN 22369); Monday 5:30 – 8:15 pm; 3.0 units

Instructor: Alyssa Jacobs - Email: ajacobs@csusm.edu  
Office Hours: Mon. & Wed. 12 - 12:50 pm MH, room 348 & Thurs. 12:00 – 1 pm SCI2, room 141 or by appt.

**Text:** NUTRITION CONCEPTS & CONTROVERSIES, 10th Edition, by Frances Sizer and Eleanor Whitney [copy on 2 hr reserve at Kellogg Library].  
**Supplemental reading and additional course materials will be posted at the BIOL 323 WebCT site:**  
http://courses.csusm.edu/resources/students.htm

**Course Description**  
Interest in nutrition is increasing as new links between nutritional factors and disease processes are proposed. This course provides the basic material needed to understand clinical nutrition concepts (the role of nutrition in preventing and treating human diseases such as heart disease, cancer, diabetes and osteoporosis) by exploring the anatomy and physiology of human nutrition and functional relationships to disease. Individual well being will be discussed through the study of nutrients and their effects on the micro-environment of the living cell. Topics include: classes of nutrients (carbohydrates, lipids, proteins, vitamins, minerals, and water); digestive physiology; cellular metabolism; enzymes; metabolism; weight management; stress; diet and eating habits; influences on food choices; the role of exercise in nutrition; and the role of nutrition in development. Also covered will be symptoms and side effects of diseases associated with inadequate nutrition, nutritional contributions to diseases not associated with inadequate diet, and contributions to nutrition and health. Special attention will be given to health concerns of women and the differences in nutritional needs between genders.  
**Prerequisite:** CRN 22369 with Consent of Director/Chair—HHS Advisor.

**Course Objectives** - At the end of the course, a student will demonstrate the ability to:
1. Understand the connections between diet, health and disease.  
2. Analyze and identify the role of nutrition/diet in disease prevention.  
3. Articulate current nutrition recommendations for the American public.  
4. Explain the processes of digestion, absorption and metabolism as they relate to the nutritional process.  
5. Provide an overview of the major macro and micronutrients relevant to human health and identify specific sources of nutrients.  
6. Identify nutritional needs of individuals with specific disease problems, applying knowledge of physiological and biochemical principles.  
7. Discuss the scientific rationale for defining nutritional requirements in healthy individuals and populations, with reference to nutritional needs throughout the life cycle.  
8. Critically analyze current nutrition information presented in the media and develop skills in evaluating the scientific literature in nutrition and diseases with class discussions.  
10. Identify the connection between economics and malnutrition and discuss major nutrition-related diseases in a global context.  
11. Analyze his/her own dietary intake.

**Important Dates—SPRING 2007**
- January 20 - February 2: Add/drop period – February 2 is the last day to drop classes with no academic record and to change grading option.  
- March 25 - April 1: Spring break  
- May 12 – 18: Final examinations

**Methods of evaluation**
- **CLASS ATTENDANCE AND PARTICIPATION** - You are expected to come to class on time and prepared, having read material from the textbook and/or the supplemental readings posted on WebCT before coming to class.  
- **QUIZZES** - There will be 4 quizzes during the course of the semester worth 25 points each. Quizzes will consist of 15 multiple choice/true or false questions worth 1 point each and 2 short answer questions worth 5 points each. They will always be administered the first 15 minutes of the scheduled class meeting and will cover course material from the previous quiz or exam. You will need a scantron form 882-ES for each quiz. Tests and quizzes not taken on the scheduled date are not made up unless cleared by the instructor beforehand; this requires notification before the scheduled exam time.
BIOL 323: The Physiology of Nutrition and Disease
Spring 2007; Sections #1 (CRN 21312) & #2 (CRN 22369); Monday 5:30 – 8:15 pm; 3.0 units

Quiz Schedule:
1. Quiz 1 on February 5, 2007 will cover Lecture Presentations, Chapter 1 & pps 57-64, Chapter 2 & pps 173 – 177, and any supplemental reading on WebCT.
2. Quiz 2 on February 19, 2007 will cover Lecture Presentations, Chapters 3 – 6 and any supplemental reading on WebCT.
3. Quiz 3 on April 9, 2007 will cover Lecture Presentations, Chapter 9 & pps 351 – 357, Chapter 10 and any supplemental reading on WebCT.
4. Quiz 4 on April 23, 2007 will cover Lecture Presentations, Chapter 11 & pps 426 – 431, Chapters 13 & 14 and any supplemental reading on Web CT.

Your lowest quiz score will be dropped and replaced by the maximum 25 points possible.

• EXAMS – You will have a midterm and final exam worth 100 points each consisting of 50 multiple choice/true or false questions and 5 short answer questions. Please refer to the semester schedule for completion dates. You will need a scantron form 882-ES for each exam.
• ARTICLE SUMMARIES – You will be required to complete an article summary throughout the course of the semester demonstrating your ability to critically analyze and evaluate scientific literature concerning nutrition and disease. You will present your article summary to the class on the scheduled date and lead class discussion concerning your chosen topic. This is your opportunity to research and address a topic that may or may not be included in class readings or lecture but is of particular interest to you. Regardless, you must choose a topic for research that is relevant to the semester schedule and your chosen presentation date. Detailed instructions for this assignment and a list of suggested topics along with the article summary presentation schedule are posted on WebCT. Each class member is strongly encouraged to participate in every class discussion.
  ➢ Article Summary Presentation Dates:
    - February 5; February 19; March 19; April 2; April 9; and April 16
• MYPYRAMID TRACKER – You will be required to analyze your own dietary intake using My Pyramid Tracker at www.mypyramid.gov. MyPyramid Tracker is an advanced tool for analyzing food intake and energy expenditure. Through MyPyramid Tracker, users can get their own personalized assessment of their diet, physical activity pattern, and energy balance. MyPyramid Tracker allows consumers who really want to make a change in their lifestyle to keep track of their food intake and energy expenditure daily. It permits consumers to save their input and monitor their daily progress over a period from one day up to one year according to their personalized dietary and physical activity recommendations. You will be required to enter all food and beverages consumed along with physical activity performed for two weeks throughout the course of the semester. Detailed instructions for each MyPyramid Tracker assignment will be posted on WebCT.
• GROUP PRESENTATION – You will be required to demonstrate a command of a single topic in The Physiology of Nutrition and Disease as a group presentation (16 minutes max) with other students using the tools of your major or any other skills or talents you possess. This is your chance to use your imagination and be creative. In addition, you will be required to include cited references and submit a detailed outline of your presentation as a group. Directions and specific instructions will be discussed in class and posted on WebCT several weeks prior to the due date.
• ACADEMIC HONESTY & CODE OF CONDUCT – Students are expected to conduct themselves in a manner appropriate for class and comply with the rules of student conduct included in the California Code of Regulations, Title 5, beginning at Section 41301. A student who violates University policies or regulation (such as academic dishonesty – cheating of any kind) is subject to disciplinary action, which can result in warning, reprimand, probation, suspension, or expulsion. The Chancellor of the California State University specifies procedures under which the university may take disciplinary action against a student. Please refer to: http://www.csusm.edu/student_affairs/Policies/academic_honesty.htm

A student with a verified disability may be entitled to appropriate academic accommodations: http://www.csusm.edu/dss/student/provision_accommodations_and_guidelines_assessment.htm. Please contact Disabled Student Services CRA 5205 (760) 750-4905 or the instructor the first week of classes.
BIOL 323: The Physiology of Nutrition and Disease  
Spring 2007; Sections #1 (CRN 21312) & #2 (CRN 22369); Monday 5:30 - 8:15 pm; 3.0 units

- COURSE EVALUATION – Course grades will be based on test and quiz scores, assignments, and group presentations.
  
  | Article Summary/Class Discussion: | 50 points |
  | MyPyramid Tracker Assignments:  | 50 points |
  | Quizzes:                        | 100 points|
  | Midterm Exam:                   | 100 points|
  | Group Presentations:            | 100 points|
  | Final Exam:                     | 100 points|

  **Total points possible:** 500 points

Therefore, your final grade point percentage will be \((\text{points earned}/500) \times 100\).

- **A 100-91%**  
  - **A- 90-91%**  
  - **B+ 89-90%**  
  - **B 81-89%**  
  - **B- 80-81%**  
  - **C+ 79-80%**  
  - **C 71-79%**  
  - **C- 69-71%**  
  - **D 60-69%**  
  - **F \leq 59%**

**Semester Schedule** subject to change at instructor’s discretion

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Text Readings</th>
<th>Quiz Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 22</td>
<td>Course Introduction/Food Choices and Human Health &amp; Phytochemicals</td>
<td>Chapter 1 &amp; pps 57-64</td>
<td></td>
</tr>
<tr>
<td>February 5</td>
<td>The Remarkable Body/Article Summaries</td>
<td>Chapter 3</td>
<td>Quiz 1</td>
</tr>
<tr>
<td>February 12</td>
<td>The Macronutrients - Carbohydrates, Lipids, Proteins and Amino Acids</td>
<td>Chapters 4, 5 &amp; 6</td>
<td></td>
</tr>
<tr>
<td>February 19</td>
<td>The Vitamins &amp; Antioxidants/Article Summaries</td>
<td>Chapter 7 &amp; pps 255 - 262</td>
<td>Quiz 2</td>
</tr>
<tr>
<td>February 26</td>
<td>Water and Minerals &amp; Osteoporosis/Midterm Review</td>
<td>Chapter 8 &amp; pps 303 – 310</td>
<td></td>
</tr>
<tr>
<td>March 5</td>
<td>MIDTERM EXAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 12</td>
<td>Metabolism, Energy Transfer, Energy Balance and Healthy Body Weight</td>
<td>Chapter 9 &amp; pps 351 - 357</td>
<td></td>
</tr>
<tr>
<td>March 19</td>
<td>Metabolism, Energy Transfer, Energy Balance and Healthy Body Weight cont./Fuel Utilization During Exercise and Nutritional Concerns of the Athlete/Article Summaries</td>
<td>Chapter 9, pps 351 – 357 cont., &amp; Chapter 10</td>
<td></td>
</tr>
<tr>
<td>March 26</td>
<td>SPRING BREAK - no class meeting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 2</td>
<td>Fuel Utilization During Exercise and Nutritional Concerns of the Athlete cont./Article Summaries</td>
<td>Chapter 10 cont.</td>
<td></td>
</tr>
<tr>
<td>April 9</td>
<td>Diet and Health/Article Summaries</td>
<td>Chapter 11 &amp; pps 426 - 431</td>
<td>Quiz 3</td>
</tr>
<tr>
<td>April 16</td>
<td>Nutrient Needs Throughout the Lifecycle/Article Summaries</td>
<td>Chapters 13 &amp; 14</td>
<td></td>
</tr>
<tr>
<td>April 23</td>
<td>Collaboration with Groups for Group Presentations</td>
<td></td>
<td>Quiz 4</td>
</tr>
<tr>
<td>April 30</td>
<td>Group Presentations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 7</td>
<td>Group Presentations/Final Exam Review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 14</td>
<td>FINAL EXAM - per final exam schedule, class meets 6:15 pm - 8:15 pm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>