Chemistry 250—Nutrition—Spring 2012

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Office Hour Thurs 12:45-1:45 pm Room 506 Science Building 1 or by appt

This class is a Hybrid class, meaning much of the class material will be presented online in PSU’s Desire2Learn software. You will need to have reliable access to a computer and the internet in order to complete the course requirements and succeed in this class. If you are unsure whether this class is appropriate for you, please email me with your questions, no later than the first week.

First and foremost, you should be able to distinguish between your personal preferences, beliefs and biases and sound evidence-based nutrition science. At times, they may be in conflict or concurrence. For this class, you will be evaluated and graded on your understanding of the material presented in the lectures, textbook, and online course information.

Goals of the Course: at the end of the class you should be able to do the following:

1. Be able to distinguish among foods as relative sources of calories and the various nutrients and be aware of appropriate sources for this information

2. Be able to list the nutrients that are essential for normal functioning of the body and briefly describe functions of each of these nutrients as they interrelate for achieving good health.

3. Be able to recognize the following processes as they relate to obtaining nutrients from food and their use within the body: digestion, absorption, transport, metabolism and excretion.

4. Be able to interpret food guides and other dietary guidelines designed to meet nutrition needs.

5. Be able to apply nutrition knowledge to evaluation of consumer concerns such as: food labeling, advertisements, popular publications, food safety, new products, current food and diet fads.

6. Be able to identify current food and nutrition problems.

7. Be aware of methods and areas of nutrition research.

8. Be able to use computer software to assess the quality of your usual diet

Please be aware that this class is designed to present nutrition concepts as a science, it is not geared directly towards your individual eating/dietary meals, other than by inference. If you are looking for a personal nutrition class, this will probably not meet your expectations. The politics of food, along with agricultural issues, while interesting, is beyond the scope of this class.

Required Textbook & Software
There are several versions of this book available. All versions that are at the bookstore are OK for this class. Editions earlier than the 10th edition should not be used.

**Online Class--Desire2Learn**

This class is partially presented by Desire2Learn. Log on at [www.psuonline.pdx.edu](http://www.psuonline.pdx.edu) You will automatically be enrolled in the online portion of the class when you are registered. Here you will find all class information, handouts, weekly lectures, discussion topics, and additional material. Since the class is quite large, you have been assigned within our D2L course to a smaller group of ~10 students.

**Discussion Posts** Nutrition is one of the sciences that relates to us personally. I want you to have an opportunity to reflect on your own eating habits and those of others, so that you can put the information you learn in lectures into practice. Nine discussion topics will be presented during the term, one each week. The topic will relate to the material being discussed. The discussion topic will be available the day of the live lecture and open for one week.

Over the term, you must post an Original posting for 4 different discussion topics and 4 separate Reply postings to other students’ postings in different topics. The Original posting will be due by midnight on Sunday following the lecture covering this topic. The Reply posting will be due no later than midnight on Wednesday the following week.

The following points are what is looked for in your Original postings to the Discussion Board and your Replies to others postings

**Original post (7 points):**
1. Mentions at least 2 specific points from the materials (1 point)
2. Relates new information to information learned in the course to date (1 point)
3. Relates information in materials to personal experience (1 point)
4. Discusses at a critical level, with specific examples to support points (3 points)
5. Writes succinctly and respectfully, posting should be 200-500 words (1 point)

**Reply postings (3 points):**
1. Discuss one point you like/agree with, and one point you dislike/disagree with, and why. Without making it personal, point out the strengths or weaknesses of the post you are responding to (2 points)
2. Length should be approximately 100 words (1 point)
Powerpoint lectures  A lot of the material covered in class will be presented in short online Powerpoint lectures. Each week there will be 2-4 lectures that you are required to watch prior to coming to class. This material is in addition to the material presented in the Live class. You may watch and listen to these lectures at your convenience; however, you cannot get ahead of the class material, so the Modules will be “turned-on” week by week. You will open the PSU Echo360 server for each lecture by clicking on the D2L link within each week’s module. You will logon using your normal PSU Odin account login and password. Viewing the Echo360 file requires you to have multimedia capabilities—audio output and flashplayer software should suffice.

Your comprehension of the information from the online lectures will be assessed during the Live class in the form of pop-quizzes, reflection essays and material feedback.

Live Lecture-Thursdays from 2-3:50pm
Attendance to the Live Lecture is required. Lecture will consist of movies, powerpoint lectures, discussions, activities and each week we will have a Reflection question, Quiz, or Most/Least Clear Remark which will serve to record attendance and assess comprehension.

Diet Analysis Project
The project is a “term long” independent activity. You will track everything you eat or drink for 3 days, enter it into an online computer program and then complete various questions and calculations based upon what you actually ate and nutrient recommendations. Packet will be distributed the first week of class. You will need the Diet Analysis Program for this (see above.) Any assignments not turned in during weekly lecture need to be submitted to the Chemistry Dept. office and date/time stamped or handed to me during my office hour time.

Office Hours
Before class on Thursdays (12:45-1:45), or by appointment. You are encouraged to come visit and discuss any problems or nutrition issues. Science Building 1, Room 506.

Grading
Term grades will be based on the Diet Analysis project, Exams, Live Class attendance, Class quizzes and Discussion postings. **Exams will cover all readings, lectures, and discussions.**

Grades will be weighted as follows:

POINTS
5        Syllabus Quiz (Online)
75       Diet Analysis Project
30       3 X 10 Unannounced quizzes
15       3 X 5 Reflection essays
15       3 X 5 Most/least clear remarks
28       4 X 7 Online Discussion Main Entries
12       4 X 3 Reply Entries
80       Midterm (multiple choice) test
80       Final (multiple choice) test

Total 340 points
Make up tests may be given for reasons of illness or emergency. You must contact me **BEFORE** test time.

**Grades** will be assigned as follows: (as percent of 380 total points)
Numeric grades will be rounded to the nearest % and the final grade given as:

A 100-92%  A- 91-90  B+ 89-88%  B 87-82%  B- 81-80%
C+ 79-78%  C 77-72%  C- 71-70%  D+ 69-68%  D 67-60%
F 59% and below

**Academic Honesty**- Students are expected to be honest and ethical in their academic work.

**Class Schedule**

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<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Lectures</th>
<th>Assignment/Activity</th>
<th>Reading</th>
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</table>
| 1    | Online    | 4/2-4/5 Introduction to Nutrients; Science of Nutrition; Nutrient Recommendations; The Digestive System | **Complete Syllabus Quiz**  
Watch Powerpoints 1-4 | Chapter 1, 3 |
|      | Live      | Thurs 4/5 Intro to Class; Intro to Project; Movie: Inside the Digestive Tract | Week 1 Discussion post by Sunday; Reply post by next Wednesday | Chapter 1, 3 |
| 2    | Online    | 4/6-4/12 Simple Carbohydrates; Complex Carbohydrates; Carbohydrate Metabolism | Watch Powerpoints 1-3; **Start Food Tracking for Project** | Chapter 4 |
|      | Live      | Thurs 4/12 Review carbohydrates; Abnormal glucose regulation; Glycemic index; Accusation against Sugar | Week 2 Discussion post by Sunday; Reply post by next Wednesday | Chapter 4 |
| 3    | Online    | 4/13-4/19 Triglycerides; Phospholipids & Sterols; Digestion of Lipids; Essential Fatty Acids | Watch Powerpoints 1-4; **Enter Foods into Diet Analysis Program** | Chapter 5 |
|      | Live      | Thurs 4/19 Review lipids; Trans fats; Fats and Heart Disease; Dietary Guidelines for Fats | Week 3 Discussion post by Sunday; Reply post by next Wednesday | Chapter 5 |
| 4    | Online    | 4/20-4/26 Protein: Structure, Digestion, and Absorption; Protein in the Diet | Watch Powerpoints 1-2; **Submit 3-Day Average Report** | Chapter 6 |
|      | Live      | Thurs 4/26 Protein functions; Nitrogen balance; Complementary Proteins & Vegetarianism; Genetics & Nutrition | Turn in Food Records; Week 4 Discussion post by Sunday; Reply post by next Wednesday | Chapter 6 |
| 5    | Online    | 4/27-5/3 Getting Energy from Food; Intro to Metabolic Reactions | Watch Powerpoints 1-2 | Chapter 7  
Highlight 7: Alcohol |
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<tr>
<th></th>
<th>Live</th>
<th>5/3</th>
<th>Metabolism: Putting it all together; Ketogenesis; Alcohol Metabolism</th>
<th>Week 5 Discussion post by Sunday; Reply post by next Wednesday</th>
<th>Chapter 7 Highlight 7: Alcohol</th>
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<tr>
<td>6</td>
<td>Online</td>
<td>5/4-5/10</td>
<td>none</td>
<td>Midterm Exam Prep</td>
<td></td>
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<tr>
<td>7</td>
<td>Live</td>
<td>Thurs 5/10</td>
<td><strong>Midterm Exam</strong> (Chapters 1,3,4,5,6,7)</td>
<td><strong>Get Part 1 of Diet Analysis Assignment Back</strong></td>
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<td>8</td>
<td>Online</td>
<td>5/11-5/17</td>
<td>B Vitamins in Energy Production; Other B Vitamins; Vitamin C</td>
<td>Watch Powerpoints 1-3</td>
<td>Chapter 10</td>
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<td>9</td>
<td>Live</td>
<td>Thurs 5/17</td>
<td>Intro to Vitamins; B Vitamin Overview; Free Radicals; Supplements</td>
<td>Week 7 Discussion post by Sunday; Reply post by next Wednesday</td>
<td>Chapter 10</td>
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<tr>
<td>10</td>
<td>Online</td>
<td>5/18-5/24</td>
<td>Vitamin A; Vitamin D; Vitamin E; Vitamin K</td>
<td>Watch Powerpoints 1-4</td>
<td>Chapter 11</td>
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<td>11</td>
<td>Live</td>
<td>Thurs 5/24</td>
<td>Review Fat Soluble Vitamins; Water</td>
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<td>Chapter 11, 12</td>
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<td></td>
<td>Live</td>
<td>Thurs 5/31</td>
<td>Intro to Minerals; Major Electrolytes; Minerals for Bones and Teeth; Iron &amp; Zinc</td>
<td><strong>Complete Diet Analysis Assignment Question packet; Watch Powerpoints 1-4</strong></td>
<td>Chapter 12, 13</td>
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<td>12</td>
<td>Online</td>
<td>6/1-6/7</td>
<td>Mineral overview; Blood Pressure; Osteoporosis; Fluoride &amp; Iodine</td>
<td><strong>Diet Analysis Assignment due (No late assignments); Week 9 Discussion post by Sunday; Reply post by next Wednesday</strong></td>
<td>Chapter 12, 13</td>
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<td>13</td>
<td>Live</td>
<td>Thurs 6/7</td>
<td>Energy Balance; Weight Regulation; Weight loss</td>
<td>Watch Powerpoints 1-3</td>
<td>Chapter 8, 9</td>
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<td></td>
<td>Live</td>
<td>MONDAY June 11</td>
<td>Physical Activity; Measuring Body Composition; Obesity; Minnesota Starvation Experiment Movie Film: Minnesota Starvation Study</td>
<td>Final Exam Prep</td>
<td>Chapter 9</td>
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<td>14</td>
<td>Live</td>
<td>Final Exam 10:15-12:05 am</td>
<td>Chapters 10, 11, 12, 13, 8, 9</td>
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