CRN 13561  Instructor Deborah Bird  Class meets Mon in room E7 -707 and on Wed in room E7 704  Fall 2009

Syllabus:  BIO 127  Human Nutrition and Biology  
Mon. and Wed. from 10:00am to 12:40pm

Teacher: Deborah Bird

This course fulfills part of the general education laboratory science requirement at Pima Community College and also transfers to the University of Arizona under the liberal arts or business AGEC. It has been designed to provide the student with a thorough survey of human nutrition and related biology. This course requires a substantial investment outside the classroom.

Laptops are not to be used during lecture and all cell phones must be put on silent. If you need to use the phone do so outside.

Requirements: Students should be comfortable with basic math, including percentages, fractions, and proportions.

Course Goals: To provide the student with information about the science of nutrition, nutrition process, and current nutrition issues; to provide an opportunity for the student to think critically about nutrition; to provide meaningful nutrition labs that give the students the opportunity for data analysis and experimental design.

Office Hours: I don’t have an office. Make an appointment with me or contact me through email or the phone. deborahbirdus@yahoo.com or dbird@pima.edu phone is 903-9038. Please speak slowly and leave a message with a contact number.

Textbooks: Understanding Normal and Clinical Nutrition 8th edition (no other edition will work for the course).

Exams: There will be four exams. There will be no make-up exams.

Withdrawal: The absolute last day to withdraw from the class is November 12th. If a student fails to attend class, or fails to withdraw herself/himself from the course, the student will be issued the grade earned based on the number of points the student has accumulated and the total number of possible points for the course.

Incompletes: An incomplete will only be given if a student has completed all the work for the first ten weeks of this course, has a “C” or better grade, has a valid and verifiable excuse for not being able to finish the course, and has requested an “incomplete”.

Plagiarism: If plagiarism is suspected, you will be called in to discuss your writing with the instructor. Any student using the direct words of others (be they students or some source) will be penalized with a zero for that assignment.

Ethics: Students caught cheating, or attempting to cheat, on an exam will have a "zero" recorded for that exam.
BIO/FSN 127 Human Nutrition and Biology Point-By-Point Description

1. Exams (Required)
   1.1 There will be four exams, each worth 200 points.
   1.2 Exams will be given in class.
   1.3 There will be no make-up exams unless the instructor is notified ahead of time, and the reason must be valid and verifiable. Only serious emergencies will be considered valid. Not being able to find a baby sitter, or not having enough time to study are not valid reasons.
   1.4 Exam questions will be randomly selected from the weekly study guides, and the rest from textbook reading assignments (via the 127 Exam Reading Assignment Study Guides, which will be given out in class). The order of the multiple choice answers will be changed.
   1.5 All exam questions will be either true or false or multiple choice.
   1.6 Again, exams cannot be made-up nor can they be re-taken.

Where do the exam questions come from?

- Weekly Study Guide Questions
- Exam Reading Assignment Q’s

2. Laboratories and LAB REPORTS (Required)
   2.1 Each laboratory will be written up as a LAB REPORT which will be graded based on content, effectiveness of written communication, neatness, and degree of organization.
   2.2 LAB REPORTS will only be accepted if the student participates in the entire laboratory.
2.3 LAB REPORTS must also be written by each individual student in his or her own words, unless otherwise specified in writing.

2.4 Laboratories cannot be made-up if missed.

2.5 LAB REPORTS are due when the instructor says they are due.

2.6 Twenty-five percent of the points will be deducted for each class meeting the LAB REPORT is late.

2.7 LAB REPORTS can be handwritten, but any part that is illegible will be considered missing.

2.8 If more than two laboratories are missed, the student will be issued an “I”, incomplete, and will be required to complete the missing labs in the following semester, unless the student does not qualify for an “incomplete” (see page 1 of this syllabus), in which case, they will be given a grade of “D” or “F” (whichever, the grade indicates).

3A In-Class Assignments = ICA (Required)

3.1 These will include critical thinking quizzes and other exercises.

3.2 These in-class assignments may come unannounced.

3.3 There will be no opportunity to make these up (even if missed due to tardiness).

3.4 They may be worth up to 200 points total.

3B Power Point Presentation (100 points per student)

Students will work in groups of two. They will select a nutrition topic and give an 10 to 15 min Powerpoint presentation to the class. Students will turn in a copy to the instructor. Presentations will start the week after Thanksgiving. More details will be given during the semester.

Outside-Class Assignment = OCA

Each OCA Assignment is Required & Will Not Be Accepted Late

4.1.1 3-Day Food Record 50 Points

4.1.2 You will evaluate your 3-day food record with an online diet analysis program such as Diet Analysis Tool 2.0.

4.1.4 Present a thorough discussion of the results by making a nutrient-by-nutrient analysis of
the results. Comment on possible deficiencies, excesses, and the health consequences of each. Also include suggestions on how to improve the diet. There is a 3 page minimum for this section. You will be graded based on your use of critical thinking skills and how well you demonstrate college level writing skills. (An energy analysis is not required.) Consider any nutrient consumed at less than 70% of the recommended to be of concern with respect to a nutrient deficiency. (45 points)

4.1.3 This assignment must be typed to be accepted (12 point font and double spaced).

4.1.4 See the Addendum A checklist before completing this assignment.

4.1.6 The complete report is due Monday November 23th.

If any sentence from the software is copied, the entire assignment will receive zero points.

3 Day Food Record Grading Rubric 50 Points Possible
Thorough discussion of nutrients & possible deficiencies as indicated by the software. 41 points
Discussion of trans fats intake. 2 points
Discussion of omega-3 fatty acid intake. 2 points
Inclusion of a summary printout. 5 points

5. Essays 50 points total (25 points each).
5.1 Each student must turn in any two essays from the topics listed below.
A) Describe the digestion and absorption of a bean and cheese burrito. In particular, describe the digestion and absorption of the protein, carbohydrate, and lipid. Discuss where they are digested and details of absorption (e.g. into capillaries or lacteal of the villus)
B) Compare/contrast the “dumping syndrome” and lactose intolerance. Do not just describe each, but directly compare/contrast different features.
C) Describe the causes and consequences of the “insulin resistance syndrome” (metabolic syndrome).
D) Describe the process of atherosclerosis to the level described in the tutorials and textbook.
E) Describe osteoporosis how nutrition relates to this disease.
F) Describe hypertension how nutrition relates to this disease.

5.2 Each essay should be typed, 2 pages minimum and 3 pages maximum, 12 point font, double spaced, and 1 inch margins.

DUE DATES: One essay is due Monday October 5, the other is due Monday November 23.
If any sentence from the textbook is copied word for word, the entire assignment will receive zero points.

6.0 Extra Credit. (Optional).
A student may turn up to two extra essays on a topic not previously reported on.(25 pts each)

A student may also do a maximum of one extra 3-day food record. (50 pts)

DUE DATES.

<table>
<thead>
<tr>
<th>DUE DATE</th>
<th>ASSIGNMENT</th>
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<tbody>
<tr>
<td>Usually the day the lab is completed unless otherwise specified</td>
<td>Laboratory Reports</td>
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<tr>
<td>Monday, October 5</td>
<td>First essay</td>
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<tr>
<td>Monday, November 23</td>
<td>3-Day Food Record &amp; second Essay</td>
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<tr>
<td>Monday, December 7th</td>
<td>All Extra Credit</td>
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Assignments will not be accepted late. Also, assignments not stapled & in correct order will suffer a 5 point deduction.

WARNING: Leaving these assignments, for the Last Minute Can Be Hazardous to Your Mental Health (and your grade).

7. Grades.
The final grade will be based on the percentage of total points earned.
[See student tally sheet on page 8.]

    A = 92 to 100% SUPERIOR,   B = 80 to 91% ABOVE AVERAGE
    C = 70 to 79% AVERAGE      D = 60 to 69% BELOW AVERAGE   F = ≤ 59% FAILURE
<table>
<thead>
<tr>
<th>WEEK of</th>
<th>LECTURE TOPIC</th>
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<tbody>
<tr>
<td>8-26</td>
<td>Introduction &amp; The Science of Nutrition (week #1)</td>
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<tr>
<td>8-31</td>
<td>The Science of Nutrition / Bio-molecules &amp; the Cell (week #2)</td>
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<td>9-07</td>
<td>Digestion &amp; Absorption, Enteral and Parenteral Nutrition (week #3)</td>
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<tr>
<td>9-14</td>
<td>Eating Disorders, and Disorders of Upper and Lower GI (week #4)</td>
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<td>9-21</td>
<td>EXAM 1, Tuesday, September 22 (week #5)</td>
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<td>9-28</td>
<td>Carbohydrates: Nutrition &amp; Metabolism, the Glycemic Index, Hypoglycemia (week #6)</td>
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<td>10-05</td>
<td>Proteins, Nutrition &amp; Severe Stress, Disorders of the Kidney (week #7)</td>
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<td>10-12</td>
<td>EXAM 2, Tuesday, October 13th (week #8)</td>
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<td>10-19</td>
<td>Fiber, Nutrition &amp; Disorders of Blood Vessels, Heart, and Lung (week #9)</td>
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<tr>
<td>10-26</td>
<td>Vitamins, Antioxidants, and Disorders of the Liver (week #10)</td>
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<tr>
<td>11-02</td>
<td>Minerals, Hypertension, Osteoporosis (week #11)</td>
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<td>11-09</td>
<td>EXAM 3, Tuesday November 10th (week #12)</td>
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<tr>
<td>11-16</td>
<td>Energy &amp; Body Weight, Food Safety (Veteran’s Day Nov 11, Wed) (week #13)</td>
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<td>11-23</td>
<td>Medicinal &amp; Anti-medicinal foods (week #14)</td>
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<td>11-30</td>
<td>Nutrition &amp; Cancer, AIDS, and Wasting Disorders (week #15)</td>
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<td>12-07</td>
<td>Nutrition and Development and the Later Years, the Nutrition Care Process &amp; Review (week #16)</td>
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<tr>
<td>12-15</td>
<td>Grade Check –Up (week #16)</td>
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This schedule may change at the discretion of the instructor.
LABORATORY SCHEDULE FALL 2009

WEEK of LABORATORY

8-26 LAB : Evaluation of Nutritional Studies (paper lab, no prep)

8-31 LAB : Subjects in a Nutrition Study
LAB : Bio-molecules

9-07 LAB : Artificial Sweeteners and Fats

Monday September 7, Labor Day

9-14 Lab : Microscope, the Cell, and Digestive System

9-21 Lab : Food Frequency Questionnaire Data Analysis (laptops)

9-28 Lab : Enzymes & Digestion Lab

10-05 Lab : Postprandial Blood Glucose

10-12 Lab : Lipid Particles

10-19 Lab : Blood Cholesterol Lab

10-26 Lab : Dietary Fiber Lab

11-02 Lab : Blood Pressure & Hypertension

11-09 Lab : CVD Risk (paper lab, no prep)

Wednesday November 11, Veteran’s Day

11-16 Lab : Energy Metabolism

11-23 Lab : Stability of Vitamin C

11-30 Lab : 16 Food Microbiology Lab

12-07 No lab scheduled

12-15 No lab scheduled
**Addendum A: Check-List for 3-Day Food Record**

The following questions are to help you evaluate the diet in both of the above mentioned assignments. It is a checklist to help you get started thinking about the subject’s nutritional status. You will need to use your knowledge gained from the supplemental course materials and textbook to fully address these. **NOTE:** This is only a general checklist, and does not encompass the either assignment entirely.

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<table>
<thead>
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<tbody>
<tr>
<td>1.</td>
<td>Which nutrients were consumed at levels below 70% of the recommended amount ?</td>
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<td></td>
<td>→ What nutrient deficiency could result ?</td>
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<td>→ What would be the expected symptoms ?</td>
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<td></td>
<td>→ Does the subject have any of these symptoms ?</td>
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<td></td>
<td>→ Is this low dose a risk factor for some other health problem besides the deficiency symptoms ? For example, does a low intake of this nutrient put the person at risk for cardiovascular disease ?</td>
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<td>2.</td>
<td>Are any of the toxic vitamins (A, D, B6, or niacin) taken in doses that could be considered toxic ?</td>
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<tr>
<td></td>
<td>→ If so, elaborate on symptoms and consequences</td>
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<tr>
<td></td>
<td>→ Remember that it is nearly impossible to obtain toxic levels of any vitamin when the source is food. That usually will happen only if excess supplements are taken.</td>
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<tr>
<td>3.</td>
<td>Are any minerals taken in high enough doses that they could pose a problem ?</td>
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<tr>
<td></td>
<td>→ A few minerals to keep an eye out for here are sodium, iron, and calcium.</td>
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<tr>
<td></td>
<td>→ Elaborate on those problems.</td>
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<tr>
<td></td>
<td>→ Is this excess dose a risk factor for some other health problem ? For example, a high intake of iron is associated with increased risk for various cancers.</td>
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<tr>
<td>4.</td>
<td>Is the total fat, saturated fat, or cholesterol higher than it should be ?</td>
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<td></td>
<td>→ If so, elaborate on the nutritional consequences.</td>
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<tr>
<td>5.</td>
<td>Evaluate the subjects intake of omega-3 fatty acids and trans-fatty acids based on what you know about sources of these. You will have to do this analysis on your own since the dietary analysis software doesn’t evaluate these.</td>
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<tr>
<td>6.</td>
<td>How can the diet be modified to lessen the problems identified above ? In other words, what needs to be cut out of the diet , and what needs to be put into the diet to make it more “healthy” ?</td>
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