

# Syllabus: BIO/FSN 127 Human Nutrition and Biology

Spring 2009 Accelerated Weekend Class Feb 28 to April 5<sup>th</sup> Teacher: James De La Rosa, PhD

*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 AGEC. It has been designed to provide the student with a thorough survey of human nutrition and related biology.* **Friday Lab Class** **NO ASSIGNMENTS WILL BE ACCEPTED LATE**

**Prerequisites:** None. It is recommended that students read at least at the twelfth grade level since there will be required reading assignments from the textbook. Students should also be comfortable with elementary mathematics, which includes calculations dealing with percentages and proportions.

**Course Goals:** To provide the student with information about the science of nutrition, nutrition process, and current nutrition issues; to provide an critical thinking opportunities regarding nutrition; and to provide meaningful nutrition labs that allow for data analysis and experimental design.

**Format:** Students will obtain course information from the textbook and the CD prepared by the instructor. Student-student and student-teacher communication will occur via phone, email, or "message board".

**Office Hours:** My office is in the O-2 building, room 213. My office hours are from 9-10am Tuesday & Thursday, and 11-12 Monday & Wednesday. My office phone number is 206-7670, and I can be reached by email at [jdelarosa@pima.edu](mailto:jdelarosa@pima.edu) My fax number is 206-7803.

**Textbooks:** Understanding Normal and Clinical Nutrition by Rolfes, Pinna, and Whitney, 7<sup>th</sup> edition (No other edition will work for this course). Students will also need the Diet Analysis+ version 6.0 or higher to complete the assignments.

**Exams:** There will be four exams, which includes the final. There will be no make-up exams. All exams will be given at one of the Pima Community College Testing Centers.

**Withdrawal:** The absolute last day to withdraw from the class is **April 9<sup>th</sup>**. If the student 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. **The last day to drop and get a refund is February 2<sup>nd</sup>.**

**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".

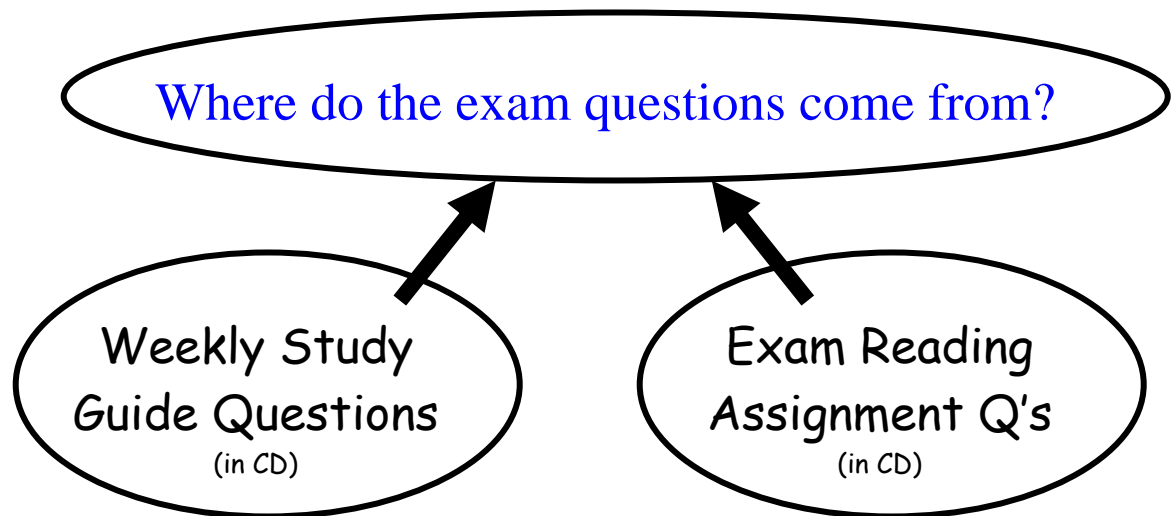
**Plagiarism:** If plagiarism is suspected, you will be called in to discuss your writing with the instructor. Any student using the direct words of others (be they fellow students, the textbook, or some source) will be penalized with a zero for that assignment.

**Ethics:** Breaches in scholastic ethics, such as cheating on an exam, will be dealt with severely. 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 Students will have about one week to take each exam, which cannot be made-up or re-taken.
- 1.3 Exam questions will be randomly selected directly from the Weekly *Study Guide* (one for each week, found in the each week's folder in the CD), and from textbook reading assignments questions found in the *Exam Reading Assignment Study Guides*- one for each exam) – the order of the answer choices will be changed. Note: answers to the questions in the weekly *Class Study Guide* can be found in the tutorials, and the *CD Lecture Notes* (found in weekly folder in the CD).
- 1.4 All exam questions will be either true or false or multiple choice, and will employ a scantron sheet. It is the student's responsibility to use a pencil and not a pen on the scantrons.



## 2. Laboratories and LAB REPORTS (Required)

**2.1 Students must attend and participate in the labs to obtain a grade for the course (otherwise an “incomplete” may be issued if the student qualifies – see page 1- if not, a “D” or “F” will be issued).**

2.2 Students who do miss one Friday laboratory session will be given an “incomplete” for the course, if they have a grade of C or better. In this case, the missed laboratories will need to be made-up another semester.

2.3 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.

2.4 LAB REPORTS will only be accepted if the student participates in the entire laboratory. If you cannot stay for the entire lab, then you will be considered absent for that lab.

2.5 LAB REPORTS must also be written by each individual student in his or her own words, unless otherwise specified in writing.

2.6 Laboratories cannot be made-up if missed.

**Lab Reports will not be accepted late.**

## 3. Outside-Class Assignment = OCA

**Each OCA Assignment is Required & Will Not Be Accepted Late**

3.1 **3-Day Food Record 50 Points**

3.1.1 Include a printout of the “bar graph” from the analysis/report describing the average nutrient content for all the meals within a 3 day period. However, you will still need to evaluate the other reports provided by the software to do a thorough analysis (e.g. “ratios and percents” and “spreadsheets”). If there are items in the diet that are not in the software’s data base, look them up at the USDA nutrient database web site ([http://www.nal.usda.gov/fnic/cgi-bin/nut\\_search.pl](http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl)) and include them in your analysis.

**The assignment will not be accepted without this printout.**

3.1.2 Present a thorough discussion 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. **This section should be a minimum of 3 pages.** 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 intake that is less than 70% of the recommended amount to be of

concern with respect to causing a deficiency. You can discuss the roles the nutrients play in the body and/or the effects of the deficiencies.

- 3.1.3 This assignment must be typed to be accepted (12 point font, double spaced, 1 inch margins).
- 3.1.4 See the *Addendum A* checklist before completing this assignment.
- 3.1.5 The complete report is to be turned in at lab on **F**.

**NOTE: This assignment will be discussed at one of the laboratory meetings.**

**3-Day Food Record Grading Rubric (50 points)**

Thorough discussion of nutrients & possible deficiencies as indicated by the software (3 page minimum discussion). **41 points** (You may also speculate on how the diet might be improved.)  
Discussion of trans fats intake. **2 points**  
Discussion of omega-3 fatty acid intake. **2 points**  
Inclusion of the correct printout. **5 points**

**3.2. Textbook Homework Assignments (THA)**

- 3.2.1 These are found immediately upon opening the Exam # Stuff folder in the CD provided.
- 3.2.2 Print this and answer the questions using only the textbook.
- 3.2.3 Answers must be in your own words.
- 3.2.4 Due dates: THA #1 and #2 ->  
THA #3 ->  
THA #4 ->

**If you copy word per word from any sentence in the textbook, the entire THA assignment will be given zero points.**

**3.3 Tutorial Questions (PowerPoint tutorials on CD)**

- 3.3.1 Answers to the “Exam Tutorial Questions” will be collected for a total of about **400** points.
- 3.3.2 Due dates for the answers to these questions are listed below.

*Exam 1 and Exam 2 Tutorial Questions DUE:*

*Exam 3 & 4 Tutorial Questions DUE:*

**Tutorial Question-answers will not be accepted late.**

**3.4 Essays 50 points total (25 points each).**

- 3.4.1. You must turn in two essays. You may select from any of the topics below.
  - A) Compare/contrast the “dumping syndrome” and lactose intolerance. Do not just describe each, but directly compare/contrast different features.
  - B) 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)
  - C) Describe the process of atherosclerosis to the level described in the tutorials and textbook.

- D) Describe the causes and consequences of the “insulin resistance syndrome” (metabolic syndrome).
- E) Describe osteoporosis how nutrition relates to this disease.
- F) Describe hypertension and how nutrition relates to this disease.

**DUE DATES**

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

**The essays must be written in your own words**, with information obtained from the textbook and tutorials. This is **not** a WEB assignment.

**If you copy word per word from any sentence in the textbook, the entire essay assignment will be given zero points.**

4. **Extra Credit.** (Optional). The extra credit assignments will not be accepted late.

**4.1 Extra credit essays.**

Students may write up to 2 extra essays (not already turned in by the student) described in section 3.4 above.

**DUE DATE:**

**Extra Credit will not be accepted late.**

**Assignments not stapled & in correct order will suffer a 5 point deduction.**

**Instructor Mailing Address:**

**James De La Rosa  
Pima Community College, East Campus  
8181 E. Irvington Rd,  
Tucson, AZ 85709-4000**

## ASSIGNMENT DUE DATES.

Due Dates	Assignments
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Assignments will not be accepted late.

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

### 5. 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 = $\leq$ 59%	FAILURE

WEEK \_\_\_\_\_ TOPICS\*

LAB

## **WEEKEND #1 : February 28 & March 01**

### **Lecture Topics:**

Introduction, The Science of Nutrition  
Bio-molecules, Enzymes, & the Cell  
Tissues, Organs, Digestion & Absorption  
Disorders of Upper and Lower GI

### **Laboratories:**

## **WEEKEND # 2: March 7 & 8**

### **EXAM 1**

### **Lecture Topics:**

Carbohydrates: Aspects of Nutrition and Metabolism  
Carbohydrates: Diabetes Mellitus and Insulin Resistance Syndrome  
Protein Nutrition, & Severe Stress,

### **Laboratories:**

## **WEEKEND # 3: March 14<sup>th</sup> & 15<sup>th</sup>**

### **EXAM 2**

### **Lecture Topics:**

Lipids & Cardiovascular Disease  
Lipids & Cardiovascular Disease , and Dietary Fiber

### **Laboratories:**

# **3-17 SPRING BREAK**

## **WEEKEND # 4: March 21 & 22**

### **Lecture Topics:**

Lipids & Cardiovascular Disease , and Dietary Fiber  
Vitamins, Antioxidants, and Disorders of the Liver  
Minerals, Hypertension, & Osteoporosis

### **Laboratories:**

## **WEEKEND # 5: March 28 & 29**

### **EXAM 3**

**Lecture Topics:**

Energy, Nutrition, & Body Weight

**Laboratories:****WEEKEND # 6: April 4 & 5****Lecture Topics:**

Medicinal & Anti-medicinal Foods

Nutrition & Cancer

Nutrition and Development and the Later Years

**Laboratories:****Exam 4**

## ***Addendum A: Check-List***

### **3-Day Food Record Assignment**

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.

1. Which nutrients were consumed at levels below 70% of the recommended amount ?
  - What nutrient deficiency could result ?
  - What would be the expected symptoms ?
  - Does the subject have any of these symptoms ?
  - 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 ?
2. Are any of the toxic vitamins (A, D, B6, or niacin) taken in doses that could be considered toxic ?
  - If so, elaborate on symptoms and consequences
  - Remember that it is nearly impossible to obtain toxic levels of any vitamin when the source is food. That will only happen if supplements are taken in excess.
3. Are any minerals taken in high enough doses that they could pose a problem ?
  - A few minerals to keep an eye out for here are sodium, iron, and calcium.
  - Elaborate on those problems.
  - 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.
4. Is the total fat, saturated fat, or cholesterol higher than it should be ?
  - If so, elaborate on the nutritional consequences.
5. 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.

**BIO/FSN 127 Student Tally Sheet**

<u>SOURCE</u>	<u>Possible Points</u>	<u>Points Earned</u>
Exam 1	200	
Exam 2	200	
Exam 3	200	
Exam 4	200	
Lab #1(studies)	32	
Lab #2	40	
Lab #3	50	
Lab #4	40	
Lab #5	30	
Lab #6	50	
Lab #7	60	
Tutorial Questions	~400	
Essays	50	
THAs	272	
3-Day Food Record OCA	50	

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NOTE: The above tabulation doesn't include the *Extra Credit*.

**Fill out legibly, cut here & give to instructor** \_\_\_\_\_

I have read the Syllabus for BIO/FSN127 CRN 23256  
& 23257 SP08, and agree to its terms.

Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_