

Syllabus: BIO/FSN 127 Human Nutrition and Biology

Spring 2009 Hybrid Class (part Web-based) 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 My fax number is 206-7803.

Textbooks: Understanding Normal and Clinical Nutrition by Rolfes, Pinna, and Whitney, 7th 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 9th**. 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 2nd.**

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".

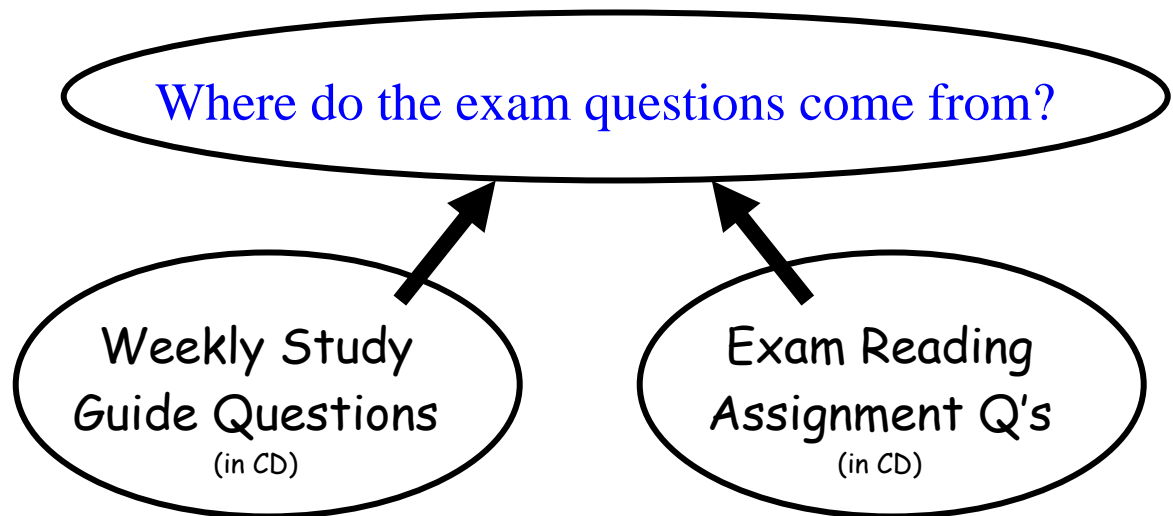
Plagiarism: If plagiarism is suspected, you will be called in to discuss your writing with the instructor. Any student using the direct words of others (be they fellow students, the textbook, or some source) will be penalized with a zero for that assignment.

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 **At-home labs.** Students must complete the following three laboratories at home. When completed they should be mailed to me by the indicated date (my address in on each lab report).

Laboratory #1: Nutritional Studies → **Bring to lab Feb 13th**

Laboratory #2: Bio-Molecules → **Bring to lab Feb 13th**

Laboratory #3: The Cell and Digestive System → **Bring to lab March 6th**

Laboratory # 5: Cardiovascular Disease Risk → turned in at lab on **Friday March 28th**

2.2 **Students are also required to come to Pima Community College building E7 room 707, East Campus, at 5:30pm on three different Fridays to complete the following laboratories (labs will last a total of 4 to 5 hours each day). *Details & lab instructions will be provided later in the semester in the Announcements link of the course homepage.* Lab report due dates are indicated below.**

LAB DAY: Friday February 13th : Laboratory #4 (Postprandial Blood Glucose)

→ Lab Report to be turned in on that same lab day (2-13)

LAB DAY: Friday March 6th : Laboratory #4 (Postprandial Blood Glucose)

→ Lab Report due on laboratory day Friday March 27th

LAB DAY: Friday March 27th : Laboratory #6: Hypertension and Blood Cholesterol Lab

→ Lab Report due on lab day Friday April 17th

LAB DAY: Friday April 17th : Laboratory #7: Energy Metabolism & Body Composition)→

Lab Report due after the lab is done on this day.

2.3 **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).**

2.4 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.

2.5 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.

2.6 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.

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

2.8 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) 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 **Friday April 17th**.

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 -> Friday Lab March 6th

THA #3 -> Friday Lab April 17th

THA #4 -> Postmarked by Monday May 4th

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: Friday March 6th (a lab day)

Exam 3 & 4 Tutorial Questions DUE: Friday April 17th (lab day)

Note: There are no questions associated with tutorials for week # 13, 14, and 15.

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: One essay due at lab day Friday March 27.

The other will be due at lab day Friday April 17th

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: All Extra Credit assignments must be snail-mailed and postmarked by Monday May 4th.

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
Bring to lab on February 13 th	Lab Report #1(nutritional studies) and Lab Report #2(biomolecules)
Bring to lab on March 6 th	Lab Report #3 (the cell & digestive system) <i>Answers to Exam 1 & 2 Tutorial Questions</i> And THA #1 and #2
Bring to lab on March 27 th	Lab Report #4 (postprandial blood glucose) Lab Report #5(CVD risk), and One essay described in 3.4.1 of this syllabus
Bring to lab on April 17 th (Lab Report #7 immediately after the lab is done)	<i>Answers to Exam 3 & 4 Tutorial Questions</i> , Lab Report # 7, one essay described in 3.4.1 of this syllabus, THA #3, and the 3-Day Food Record Lab Report #6(hypertension & blood cholesterol)
Postmarked by May 4 th	THA #4 and Extra Credit.

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

<u>WEEK</u>	<u>TOPICS*</u>	<u>LAB</u>
#1 (Tue 1-20)	Introduction, The Science of Nutrition {Week #1 folder in CD}	Lab # 1 (take-home): Evaluating Nutritional Studies
#2 (Mon 1-6)	Bio-molecules, Enzymes, & the Cell {Week #2 folder in CD}	Lab #1(take-home):: Evaluating Nutritional Studies Lab #2: (take-home): Bio-molecules
#3 (Mon 2-02)	Tissues, Organs, Digestion & Absorption {Week #3 folder in CD}	Lab #3(take-home):: The Cell, and Digestive System
#4 (Mon 2-09)	Disorders of Upper and Lower GI {Week #4 folder in CD}	Friday March 13th, Lab Day at East Campus 5:30-9:30
EXAM 1	<u>2-14 to 2-21 (CD Material from Week # 1 to #4 inclusive & Exam 1 Reading Assignment Study Guide)</u>	
#5 (Mon 2-16)	Carbohydrates: Aspects of Nutrition and Metabolism {Week #5 folder in CD}	
#6 (Mon 2-23)	Carbohydrates: Diabetes Mellitus and Insulin Resistance Syndrome {Week #6 folder in CD} Rodeo Days 2-26/27	
#7 (Mon 3-02)	Protein Nutrition, & Severe Stress, {Week #7 folder in CD}	Friday March 6th, Lab Day at East Campus (Lab #4) 5:30-9:30pm
EXAM 2	<u>3-07 to 3-14 (CD Material from Week #5 to #7 inclusive & Exam 2 Reading Assignment Study Guide)</u>	
#8 (Mon 3-09)	Lipids & Cardiovascular Disease {Week #8 folder in CD}	Lab #5(take-home):: Cardiovascular Disease Risk
3-16 SPRING BREAK		
#9 (Mon 3-23)	Lipids & Cardiovascular Disease , and Dietary Fiber {Week #9 folder in CD}	Friday March 27th , Lab Day (lab #6) 5:30-9:30pm at East Campus
#10 (Mon 3-30)	Vitamins, Antioxidants, and Disorders of the Liver {Week #10 folder in CD}	
#11 (Mon 4-06)	Minerals, Hypertension, & Osteoporosis {Week #11 folder in CD}	
EXAM 3	<u>4-11 to 4-18 (CD Material from Week #8 to #11 inclusive & Exam 3 Reading Assignment Study Guide)</u>	
#12 (Mon 4-13)	Energy, Nutrition, & Body Weight {Week #12 folder in CD}	April 17th , Lab Day (Lab #7) 5:30-9:30pm at East Campus
#13 (Mon 4-20)	Medicinal & Anti-medicinal Foods {Week #13 folder in CD; there are no tutorials for this week}	
#14 (Mon 4-27)	Nutrition & Cancer {Week #14 folder in CD: there are no tutorials for this week }	
#15 (Mon 5-04)	Nutrition and Development and the Later Years {Week #15 folder in CD; there are no tutorials for this week }	
Exam 4	<u>5-11 to 5-16 (CD Material from Week # 12 to #15 inclusive & Exam 4 Reading Assignment Study Guide)</u>	

* Topics are found in the form of *Tutorials* and *CD Lecture Notes*.

NOTE: There are no tutorials for weeks # 13, 14, and 15.

Exam Timeline

EXAM 1 (Material from Week #1 to 4 inclusive) In testing centers from Saturday February 14th to Monday February 21

EXAM 2 (Material from Week #5 to 7 inclusive) In testing centers from Saturday March 7th until March 14th

EXAM 3 (Material from Week #8 to 11 inclusive) In testing centers from Saturday April 11th until Saturday April 18th

EXAM 4 (Material from Week # 12 to 15 inclusive) In testing centers from Saturday May 11th until Saturday May 16th

Assessment/Testing Center Hours

CAMPUS	DAYS	TIMES
EAST	Monday to Thursday	8:15 am to 7:00 pm
Phone:206-7874	Friday	8:15 am to 4:30pm
	All Saturdays but not holidays	Call for Saturday hours
WEST	Monday to Thursday	8:15 am to 7:00 pm
Phone:206-6648	Friday	8:15 am to 4:45pm
	All Saturdays but not holidays	8:15 am to 1:00pm

Arrive at the testing center at least an hour before they close otherwise they will not let you take the exam. Do not wait until the last minute to take the exam. There have been times when there are so many students backed up to take exams they need to take a number, and consequently some were unable to take the exam because there was not enough time. It is your responsibility to make sure you take the exam before the deadline, otherwise you will be given a score of zero.

You may not have cell phones, laptops, MP3s, iPods, or PDAs when taking the exams.

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.
6. 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" ?

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	

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

Fill out legibly, cut here & give to instructor _____

I have read the terms of the syllabus for the following course: Jdelarosa BIO/FSN127 CRN 21307 & 23833 SP09 Syllabus: BIO/FSN 127 Human Nutrition and Biology Hybrid Class (part Web-based) *Teacher: James De La Rosa, PhD.*

Printed Name _____

Signature _____

Date _____