Syllabus: BIOLOGY 3A GENERAL BIOLOGY I
Spring 2012

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Ticket Numbers: 21175 and 21180 and DISC: 21185
Lecture: TTh 1200 – 1320 SM 313
Lab: TTh 0830-1120, 1430-1720 SM 244
Req. Discussion: TTh 1330 -1420 BGS 356 (T) SM 313 (Th)
Website**: www.saddleback.edu/faculty/thuntley**

WEEK	DATE	LECTURE TOPIC	READINGS
1	JAN10	Introduction	Ch. 1
	12	Chemistry Review	Ch. 2, 3, 4
2	17	Structure & Function of Macromolecules	Ch. 5
	19	A Tour of the Cell	Ch. 6
3	24	A Tour of the Cell (cont)	
	26	Membrane Structure and Function	Ch. 7
4	31	Review for Exam 1	
	FEB 2	**LECTURE EXAM I**	
5	7	An Introduction to Metabolism	Ch. 8
	9	Cellular Respiration	Ch. 9
6	14	Cellular Respiration/ Photosynthesis	Ch. 9 & 10
	16	Photosynthesis	Ch. 10
7	21	The Cell Cycle & Meiosis	Ch. 12 &13
	23	Mendelian Genetics	Ch. 14
8	28	The Chromosomal Basis of Inheritance	Ch. 15
	MAR 1	The Molecular Basis of Inheritance	Ch. 16
9	6	Review for Exam 2	
	8	**LECTURE EXAM II**	
	12 - 16	**SPRING BREAK**	
10	20	From Gene to Protein	Ch. 17
	22	Gene Expression	Ch. 18
11	27	Viruses	Ch. 19
	29	Biotechnology	Ch. 20
12	APR 3	Genomes	Ch. 21
	5	Darwinian Evolution	Ch. 22
13	10	Evolution of Populations	Ch. 23
	12	Review for Exam 3	
14	17	**LECTURE EXAM III**	
	19	The Origin of Species	Ch. 24
15	24	Phylogeny and the Tree of Life	Ch. 26
	26	Ecological Principles	Ch. 52
16	MAY 1	Population Ecology	Ch. 53
	3	Community Ecology	Ch. 54
17	8	Ecosystems	Ch. 55
	10	Tenth Annual Meeting of Biological Society	REQUIRED
	15	**FINAL EXAM 1245 - 1445**	

LABORATORY SCHEDULE

WEEK	DATE	LAB TOPIC
1	JAN10	Introduction: The Scientific Method
	12	Intro. to stats, write-ups & presentations
2	17	Complete statistics and graphing
	19	History of Biology
3	24	"Volumetrics" Lab, part 1
	26	"Volumetrics" Lab, part 2
4	31	Biologically Important Molecules, part 1
	FEB 2	Biologically Important Molecules, part 2
5	7	Scopes & Cells
	9	Morphology & Symmetry
6	14	Physical Transport, part 1
	16	Physical Transport, part 2
7	21	Project Proposal Presentations
	23	Enzymes
8	28	Photosynthesis
	MAR 1	Photosynthesis
9	6	Cellular Respiration & Fermentation
	8	Animal Metabolism
	12 - 16	**SPRING BREAK**
10	20	Mitosis
	22	Genetics
11	27	Movie: *The Double Helix*
	29	DNA Isolation
12	APR 3	Polymerase Chain Reaction, part 1
	5	Polymerase Chain Reaction, part 2
13	10	Movie: *Evolutionary Arms Race*
	12	Phylogeny & Systematics (Cladistics)
14	17	Protein Fingerprinting
	19	Project Status Report Presentations
15	24	Point Quarter Transects
	26	Point Quarter Transect – Data Analysis
16	8	Natural Selection 1
	11	Project Lab
17	MAY 1	Natural Selection 2
	3	Project Data Analysis
18	8	Poster Presentation Techniques
	10	Project Presentations
	15	**FINAL EXAM**

About this course: Biology 3A is the first in a the three-course sequence designed for those majoring in the biological sciences, including pre-health (medical, optometry, pharmacy) professionals. The goal of this course is to introduce the student to the principles of life and life processes with an emphasis on cellular chemistry, cellular structure, bioenergetics, genetics, evolution and ecology of living organisms. Field trips are required to fulfill the objectives of the course. **Note:** Concurrent enrollment in the discussion section is required. CHEM 1A and Intermediate Algebra (MATH 253) or the equivalents are prerequisites for this course.

Student Learning Outcomes (SLO's)

Upon completion of BIO 3A students should be able to:

- Appropriately use of the following statistical concepts
  - Measures of central tendency (mean, median and mode)
  - Standard deviation and Standard error
  - T-test (paired and un-paired)
  - Chi-squared
  - Regression and Correlation
  - p-values and one- and two-tailed tests
- Demonstrate a knowledge of precision, accuracy, and use of significant figures (rounding)
- Properly apply the scientific method for:
  - hypothesis generation
  - experimental design
  - experimental hypothesis testing
- To express experimental results in a written scientific paper
  - Demonstare a knowledge of all parts of the scientific paper
    - *abstract, introduction, materials and methods, results, discussion, literature cited*
  - To properly cite literature within the body of the paper and in the "Literature Cited" section using
    - direct citation
    - indirect citation
    - the "name-year system"
  - To read, interpret and present graphic and tabular data for
  - Create of bar, pie and line graphs using MS Excel
  - Write appropriate figure and table captions
  - Properly format figure and table captions
  - Properly format figures and tables in a scientific paper
- Demonstrate basic understanding of the following biological concepts
  - Cell structure and function
  - Cellular energetics and chemistry
  - Major concepts in evolution
  - Introductory genetics
  - Taxonomy and systematics
  - General ecology concepts

IMPORTANT DATES

22 JAN 2012	Last Day to drop with a refund
14 FEB 2012	Last Day to drop without a "W"
4 APR 2012	Last day to drop with a "W"

Test Dates (Subject to change)

Lecture Exam 1	2 FEB 2012	**Lecture Exam 2**	8 MAR 2012
Lecture Exam 3	17 APR 2012	**Final Exam**	15 MAY 2012 (1245-1445)

Required Books

Campbell, NA and Reece, JB (2011) *Biology*, with Interactive CD. Ninth Edition. Pearson and Benjamin Cummings, San Francisco

Knisely, K (2009) *A Student Handbook for Writing in Biology*. Third Edition. Sinauer Associates, Sunderland, MA

Please bring your textbook to lecture and lab, it will be referenced frequently. Further, reading the assignments prior to coming to class will greatly enhance your understanding of the material.

Lab Manual: Lab handouts are provided on the class website. The appropriate lab handout must be downloaded and printed before lab. Once again, you can find the class website at *www.saddleback.edu/faculty/thuntley* You must arrive on time at the lab with a copy of the lab handout. You may not leave lab to print a copy of the lab handout in the Chemistry Computer lab. Doing so may result in your expulsion from that day's lab section.

Assignment due dates and times: Unless otherwise stated, lab worksheets are due at the next scheduled lab meeting. All lab worksheets will be handed in during the first 5 minutes of your lab section, *and at no other times*. There will be a briefcase on the desk in the lab. Place your assignments into the case. Do not attempt to slide your work under that of others. Be proud of your work; do work that makes you proud. If you need to hide your work from the instructor, then don't turn it in! Attempts to slide your work under that of others will result in the discarding (un-graded) of that work. The briefcase will be locked after the first five minutes. The only acceptable excuses for late submission of an assignment are listed below.

Make-up Exams and Quizzes: If there is a problem with the exam or quiz dates, see me well **in advance** so other arrangements can be made. Exams and quizzes will be given at the beginning of class. If you show up late, you will not be allowed to take the exam or quiz and it will be recorded as a zero. The only acceptable excuses for missing an exam are listed below. Students who fail to take two exams should consider dropping the course. All students must take the final exam.

Acceptable Excuses: There are very few excuses that will be deemed acceptable for unscheduled late work submission or missed exams. These include:

1. Death
    - Your own early demise is, of course, a valid excuse for not turning in your work on time. In this case I will not require any further documentation.
    - Death of a very close personal friend or relative. Owing to the incredible "revivication" experienced by grandparents of students at Saddleback College, I will require a certified copy of a death certificate for the deceased. In addition, if it is not obvious that this

person is a relative (i.e. same surname and address), I will require a notarized statement of the relationship between yourself and the deceased.

2. True Personal Emergency
    - We all have true personal emergencies. For instance, a ruptured appendix may prevent you from being present for a test. If such a situation should arise, please document it fully; examples of appropriate documentation include signed doctors' notes, hospital records showing your admission, police repots, etc... Notes from your parents are **not** acceptable.

3. Other Excuses
    - none

Attendance: Attendance at both lecture and lab is mandatory. Since many of the questions on the tests will come from the lecture material, it is critical that students attend all class meetings. If you must miss a class, it is your responsibility to get the notes from a fellow student. If your number of absences exceeds the number of hours the class meets in two weeks, the instructor may drop you from the course. **However, it is ultimately the student's responsibility to drop themselves from the course**. Poor attendance may result in the loss of one grade level (i.e. a student will fall from an "A" to a "B").

Grading: Your course grade will be based upon the following:

Lecture Portion:

3 Lecture Exams (100 pts each).....	300 pts
1 Final Exam …….....……	100 pts
Lecture Quizzes / Homework (TB, approximate) ..……	50 pts
	450 pts

Lab Portion:

18 Lab Worksheets (10 pts each)……	180 pts
Scientific Paper "parts" (25 pts each) ……..... (Introduction, Methods & Results, Conclusion, Ann. Bibliography)	150 pts
Scientific Papers based on data gathered in laboratory	
Animal Metabolism ……	50 pts
Protein Fingerprinting ……	75 pts
Independent Research Project	
Lab Notebook ……..	25 pts
Peer Review ……..	25 pts
Project Proposal ……	25 pts
Project Status Report ……	20 pts
Project Poster/ Abstract……	50 pts
Research Paper ……	100 pts
	700 pts

Approximate number of total points possible for lecture and lab: 1150 pts

Tentative Grading Scale:

A	900 points and above
B	800 to 899 points
C	700 to 799 points
D	600 to 699 points
F	599 points and below

NOTE: *In order to facilitate a more productive learning environment, points, assignments and due dates are subject to change at the instructor's discretion.*

Field Trips:
There will be at least one local field trip to an area close to campus to collect data. The trip will most likely be during class time, however, it maybe on a Saturday. **If the scheduled date conflicts with your work schedule, see me for other arrangements.**

Lab Clean Up:
It is your responsibility to clean up after yourselves in lab! It does not matter who makes the mess, please clean it up.

Reasonable Accommodation:
All reasonable efforts will be made to accommodate students with disabilities. It is your responsibility to provide documentation of your disability and resolve the appropriate accommodation(s) within the first of the semester. **NO students** may use dictionaries or electronic translation devices during lecture exams or quizzes, without prior permission of the instructor.

Beepers, Pagers or Cellular Phones must be set on vibrate or another silent alert mode during class. Students that disrupt the class with these devices will be asked to leave for that day and **lose 10 points** for each offense.

Math, Science, and Engineering Division Policy on Academic Integrity
Statement of Purpose
Academic integrity is not just a matter of "following the rules." It is a matter of participating in an intellectual community in a way that fosters the values of that community. These values include the promotion of learning, the sharing of knowledge, and the honest acknowledgment of the various sources of information. This document is designed with the purpose of clarifying some specific student actions that promote or violate these values. It should be read as a reinforcement, clarification, and extension of the "Academic Honor Code" as stated in the Saddleback College Catalog (under the section of "Student Rights and Responsibilities") and in the Student Handbook as the "Code of Conduct".
This document is not designed to be an exhaustive list of academic "dos and don'ts." Rather, students are expected to understand that all participants in an academic environment have an active and on-going responsibility to be self-critical and to assess whether their actions are in compliance with a true spirit of learning. Students are accountable for academic dishonesty in any form, whether their actions are explicitly listed below or not. Further, ignorance or confusion about this policy or its interpretation is not a valid excuse for violating it. It is each student's responsibility to recognize when an action is questionable and to question it. When in doubt, a student should always ask his or her instructor.

Academic honesty
When you submit work for credit you must do so honestly. At a minimum, this means:

1. Any and all work you submit must be your own work. For lab work, this includes gathering, analyzing, and presenting data. Group projects, if assigned, should be submitted using only the names of group members who contributed to the completion of the project.
2. You may use only those resources explicitly allowed by the instructor in completing an assignment. Allowed resources will vary with classes, instructors, and assignments. It is your responsibility to know which resources are allowed on any given assignment.
3. You must acknowledge use of allowed resources in completing an assignment, unless the instructor does not require such acknowledgment. Many instructors allow, and even encourage, students to receive help from each other, other instructors, tutors, and/or

printed or online materials. At the top of any assignment on which you have received outside help, you should list the sources of that help. For example, you might write: "I worked with [names of classmates worked with]" or "I got help in the LAP from [names of tutors]."

4. Unless given explicit permission, you may not submit work for credit if that work was completed for a different class. This includes work completed for the same course in a different semester. Learning is not just about the final product, but the process, and instructors give assignments with the expectation that completing the assignment will be a learning experience.

Academic dishonesty

The following actions are considered to be cheating. Again, this is not an exhaustive list, and students are expected to take an active role in assessing their own actions to ensure that they are honest.

1. Submitting a test or any other work (including homework, lab report, research or literature report, etc.) that is copied wholly or in part from another person's test or work, or knowingly allowing another student to copy from your work.
2. Having another person complete an assignment, take a test, or otherwise meet a requirement for you or you doing so for another student.
3. Using written or electronically retrievable notes or other unauthorized sources of information during a test.
4. Receiving specific information about a test from anyone but the instructor during the test, or giving to or allowing another student to get from you such information during the test.
5. Receiving specific information about the contents of a test before taking it, or providing specific information about a test after taking it in such a way that another student receives the information before s/he takes the same or a similar test.
6. Plagiarizing assignments from any source including Internet sources.
7. Falsifying or altering laboratory data, or copying results or answers from another student. Even if you were directed to work in a pair or other grouping, and although you may be allowed to share "primary data", it will be considered as evidence of cheating if you and another student report identical results that should naturally differ from one student to another, or identical wording in conclusions, answers to questions, etc. "Primary data" means numerical values or observations obtained directly by the experimenter or read directly from a measuring instrument.
8. Submitting a lab report using data you did not help to collect or sharing data with a student who did not help collect it. This does not include data provided by the instructor. While lab work is often done in groups, each group member is expected to participate in performing the experiment and analyzing and presenting the data collected.
9. Getting allowed help in preparing, writing, reviewing, editing, or proofreading an assignment for submission without acknowledging that help, if required by the instructor. This includes help from <u>any</u> source including other students, teachers, lab technicians, family members, friends, acquaintances, and even from anonymous sources (especially Internet sources). It may not be considered cheating to get the help, but it is definitely considered cheating not to note the source and extent of the help in a prominent way in the submitted work, if required by the instructor.
10. Using the whole of or substantial part(s) of any written assignment submitted for credit in another (concurrent or previously taken) course, without the explicit permission of the current instructor.

The penalties for any act of academic dishonesty are left to the discretion of the instructor. Possible penalties are listed in College Catalog and the Student Handbook.

It is the policy of this division that all acts of dishonesty are reported to the Division Dean and the Vice President for Student Services. The Vice President keeps records of all reported incidents, and repeated offenses are handled with increasing severity.

Policy on Cheating:

Violation of the honor code stated above or the Code of Conduct stated in the Student Handbook will result in harsh consequences. At minimum all students involved in a cheating incident (as defined above) will lose all points associated with the assignment or test. At the discretion of the instructor, the incident will be reported to the vice-president of student affairs. By enrolling in this class you are agreeing to accept a grade of "F" if a second incident of cheating occurs.

Class Agreement Form

I understand that I am enrolling in **Biology 3A, General Biology I Section Number 21175 or 21180 and the discussion section 21185**. I have read and agree to the policies put forth in the class syllabus and especially those listed below:

1. I understand that the field trips for this class may conflict with other classes and that it is my responsibility to deal with these conflicts.

2. I understand that the scientific meeting on 11 MAY 2011is a requirement of this class. I agree to be present for this meeting in its entirety. I accept this requirement and agree that if I am not present for whatever reason, I will not be given any points for assignments turned in or due on that date.

2. I have read and will abide by the Saddleback College Math, Science, and Engineering Division Policy on Academic Integrity and the Code of Conduct as stated in the Saddleback College Student Handbook.

3. I agree that any breach of the policies set forth in the syllabus will result in harsh consequences. Such consequences are indicated in the syllabus and may include expulsion from this class. I agree to accept these consequences if it is determined that I was cheating (as defined in the MSE Honor Code).

_____ _____

Name (printed) Student Number

_____ _____

Signature Date