COURSE SYLLABUS

BIOL 2107K: BIOLOGICAL PRINCIPLES I (FALL 2008)

Instructor: Dr. Mark T. Sugalski
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Office Hours: 10:30 – 1:00 pm T,
Noon – 1:00 pm W,
10:30 am – Noon R, or by appointment
Feel free to stop by my office at any time. If I am not busy, I will be happy to speak with you!

Course Web Page (VISTA): http://spsu.view.usg.edu/
Student VISTA Login Instructions: http://webct.spsu.edu/vista_login_instructions_ext.html

Course Description & Learning Outcomes:

This course will expose students to the basic principles of biology within the unifying theory of evolution. The lecture session will examine topics such as prokaryotic & eukaryotic cells, respiration & photosynthesis, mitosis & meiosis, structure & replication of DNA, genetics, and the basic principles of evolution. Laboratories will provide students with hands-on experiences that supplement topics covered in lecture and will expose students to the scientific method, as well as the analytical techniques used by professional biologists.

- *Student learning outcomes will be:*

(1) to understand and describe the fundamental biology of the cell, including cellular anatomy, cellular metabolism, cellular respiration, photosynthesis, cell growth and cellular reproduction.
(2) to understand and describe the fundamental principles of Mendelian genetics.
(3) to understand and describe the molecular basis for heredity, DNA structure and replication, and protein synthesis.
(4) to understand and describe the principles of evolution, from both Darwinian and modern perspectives.
(5) to develop laboratory skills that allow a student to perform experiments and analyze data based on the concepts listed above.

Required Textbook: *Biology: the dynamic science (1st ed.)* by Russell, Wolfe, Hertz, & Starr

Required Lab Materials: *Laboratory Manual for Principles of Biology I (3rd ed.)* by Burnett, Beach, & Sugalski

Meeting Times: Lecture: 11:00 – 11:55 am MWF
Lab: 7:30 pm – 10:20 pm R (Instructor: Veronica Allen)
OR noon – 2:50 pm F (Instructor: Dr. Michael Beach)

Evaluation:

Evaluation for the class will be based on the following criteria:

• Four lecture exams	70 points
• Online quizzes homework	5 points
• Lab assignments	25 points
=	**100 total points (%)**

To determine the number of course points earned, simply calculate your current % average for each criterion and multiply the % average by that criterion point value. The resulting number represents the number of points earned for that criterion. Repeat this for each criterion, and then add the earned points together. The point total represents the total points earned for the course & can be then be compared to the grading scale.

Grading Scale: *out of 100 points (%)*
A = 90 – 100%
B = 80 – 89.9%
C = 70 – 79.9%
D = 60 – 69.9%
F = below 60%

Exams:

Exams (including the final) are not comprehensive; although each will assume that previous material has been learned.

Late Work & Makeup Examinations:

- Late online assessments MAY NOT be made up.
- Make-up lecture examinations WILL NOT be given, except for SERIOUS medical conditions and games for SPSU sports teams. **A physician MUST provide written documentation of the illness, and must include a contact telephone number.** Documentation is also required for sports-related absences, and is required 1 week in advance. Failure to provide adequate confirmation will result in a zero for the exam. The makeup exam will be in the format of my choosing (oral exams & essay exams are likely formats).
- Due to the time, effort, and resources involved, lab exercises MAY NOT be made up. The student will receive a grade of zero for missed lab assignments.

Attendance:

- In order to receive maximum benefit from the course, students must attend lecture. Absence from **MORE THAN 3** lectures will result in the lowering of your final grade by 3% for each unexcused absence greater than three. Only SERIOUS medical conditions and games for SPSU sports teams will be considered an "excused" absence. **A physician MUST provide written confirmation of the illness, and must include a contact telephone number.** Documentation is also required for sports-related absences, and is required 1 week in advance.
- Attendance of laboratories is also mandatory. Absence from **MORE THAN 1** laboratory will result in the lowering of your final grade by 3% for each unexcused absence.
- I reserve the right to mark chronically tardy students as absent for the purposes of attendance.
- **You are also responsible for all announcements made in class about exams and changes in the syllabus.**

Honesty:

All work must be your own! I take any form of cheating VERY personally; therefore, if you are caught cheating on any graded assignment you will receive an F for the entire course. An F grade issued for academic dishonesty cannot be converted to a W. See the SPSU catalog for the university's regulations on this issue.

Learning Disabilities:

- Students with learning disabilities who believe that they may need accommodations are encouraged to contact the counselor working with the ATTIC at 678-915-7244 as soon as possible. This will ensure that accommodations are implemented in a timely fashion.
- I MUST receive a copy of the completed 'Faculty Accommodation Form' from the ATTIC before I provide any class accommodations.
- Student assessment accommodations often require significant extra effort and scheduling adjustments on my part. **Thus, a student needing accommodations MUST verbally contact me** (i.e., phone or in person) **at least 24 hours prior to ANY assessment to discuss and formally define accommodation details. If a student does not contact me at least 24 hours prior to an assessment, I will assume that no accommodations are needed and none will be provided.** NOTE: it is the student's responsibility to contact me, not vice versa.

TIPS FOR SUCCESS FROM SOMEONE WHO'S BEEN THERE

General Advice

- **Keep up with the material!** One way to insure poor performance in this class is to put off studying the material until the day before the test. We will simply be covering too much material in too much detail for you to get away with cramming the day before an exam. It is essential that you study the material within a reasonable period of time after lecture. *Trust me*…you'll be glad you did!
- **Ask questions!** Regardless of whether you are in lecture /or lab, it is essential that you ask questions if you don't understand a concept. The longer you are confused about a given topic, the harder it may be for you to eventually understand it. In addition, your confusion could impede your understanding of related topics. *Please*…don't be afraid to raise your hand in class or to talk to me one-on-one; I promise I won't bite!

Lecture Related Advice

- **Read the book!** Make sure you read the appropriate chapter(s) either before or soon after my lecture on a given topic. The descriptions, tables, figures, and diagrams of concepts in the book will be most helpful in helping you learn the material.
- **Use the review sheets!** It is my custom to hand out fairly detailed review sheets about 1 week before an exam. I have found that if students treat the review sheet like a mock-exam (i.e., they quiz themselves using the review sheet), they perform *much* better on exams.

Lab Related Advice

- **Review the lab exercises *before* you arrive!** The better prepared you are before you get to lab, the more effective you will be after you get there. Students who read the exercises before class tend to (1) get started quicker, (2) have fewer procedural questions, (3) be more organized, and (4) finish their work more quickly.

TENTATIVE LECTURE SCHEDULE

WEEK #	WEEK OF:	TOPIC	TEXT CHAPTER(S)
1	8/18	Introduction to Biological Concepts	1
2	8/25	Life, Chemistry, & Water	2
3	**9/1** 9/3-9/5	**Labor Day (NO CLASS)** Biological Molecules	--- 3
4	9/8	Cells & Membranes Energy, Enzymes, & Biological Reactions	5 – 6 4
5	**9/15**	**EXAM 1 (Chapters 1-6; exam date: 9/15)** Cellular Respiration	--- 8
6	9/22	Cellular Respiration	8
7	9/29	Photosynthesis	9
8	10/6	Cell Division: Mitosis & Meiosis	10 – 11
9	**10/13** 10/15-10/17	**EXAM 2 (Chapters 8-10 & 12-13; exam date 10/13)** Mendel, Genes, & Inheritance	--- 12
10	10/20	Genes, Chromosomes, & Human Genetics	14
11	10/27	DNA Structure, Replication, & Organization	15
12	11/3 **11/5** 11/7	From DNA to Protein **EXAM 3 (Chapters 14-17, & 19; exam date 11/5)** Biotechnology	16 --- 18
13	11/10	Biotechnology	18
14	11/17	Principles of Organic Evolution	19 – 22
15	11/24 **11/26-11/28**	Principles of Organic Evolution **Thanksgiving Break (NO CLASSES)**	19 – 22 ---
16	12/1 **12/4**	Principles of Organic Evolution **Last Day of Fall Classes (NO CLASS on 12/6)**	19 – 22 ---
	TBA	**FINAL EXAM (Chapters 18-22)**	

TENTATIVE LABORATORY SCHEDULE

WEEK #	WEEK OF	TOPIC	LAB EXERCISE(S)
1	**8/18**	**NO LAB**	
2	8/25	Introduction to Microscopes	1
3	9/1	Enzymes	2
4	9/8	Cell Structure	4
5	9/15	Diffusion and Osmosis	3
6	9/22	Glucose Metabolism	7
7	9/29	Fruit Fly Genetics	5
8	10/6	Plant and Animal Mitosis	8
9	10/13	Fruit Fly Genetics II	5
10	10/20	Fruit Fly Genetics III	5
11	10/27	Principles of Agarose Gel Electrophoresis	10
12	11/3	Evaluating Genetic Crosses	9
13	11/10	DNA Restriction Analysis	11
14	11/17	Population Genetics	12
15	**11/24**	**NO LAB (Thanksgiving Break)**	
16	**12/1**	**NO LAB**	