

BIOL 2107K/003 – BIOLOGICAL PRINCIPLES I (Lecture/Lab) – FALL 2008

Instructor: Dr. Peter C. Sakaris, Assistant Professor of Biology

Contact Information:

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Office Hours:

Tuesday: 7:30 AM – 10:00 AM

Thursday: 7:30 AM – 10:00 AM, *or by appointment*

Course Learning Outcomes:

- 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 Text – *Biology: the dynamic science (1st ed.)* by Russell, Wolfe, Hertz & Starr.

Lab Manual (also required) – *Laboratory Manual for Principles of Biology I (3rd edition)* by William C. Burnett, Michael B. Beach, and Mark T. Sugalski

Lecture – Lectures will be held from 10:30AM - 11:45AM on Tuesday and Thursday in rm. E-220.

Lab – Labs will be held from 2:00PM - 4:50PM on Thursday in rm. E-204.

Grades - Grade points will be divided up as follows:

4 Semester Exams (12.5% each)	50%
Final Exam (Cumulative)	20%
11 Labs	25%
5 Quizzes	5%
Total	100%

Grading policy - The following are the standards (%) for assigning grades:

Letter Grade	Percent Score
A	90 – 100.0%
B	80 – 89.9%
C	70 – 79.9%
D	60 – 69.9%
F	Below 60.0%

Exams - Questions on exams can cover any of the lectures, labs, quizzes, and class handouts. Exams may also include questions that cover material from reading assignments. Exam dates are listed in the lecture schedule. The time and place of the final exam will be announced. If you have to miss an exam, **you must submit a signed note from a Doctor, Department Head, or Coach**. Please see me immediately to schedule a time to make up an exam. If you do not make up an exam within a week after it was originally scheduled, you will receive **a grade of zero** for the exam. If you have an unexcused absence from an exam, you will receive **a grade of zero** for the exam.

Quizzes – Five quizzes will be given during the semester. Dates of quizzes will be announced in class during the semester. Quizzes cannot be made up, and you will receive **a grade of zero** for each quiz that is missed.

Laboratory assignments – Instructions for completing labs can be found in the laboratory manual. In most cases, labs will be due at the end of each laboratory period. Your textbook will be a valuable resource for answering questions given on laboratory assignments. Any exercises or lab questions not found in the laboratory manual will be handed to you at the beginning of lab. Labs that are handed in late will not be accepted, and you will receive **a grade of zero** for the lab. Labs cannot be made up, and you will receive **a grade of zero** for each lab that is missed.

Attendance policy - Lecture attendance is required, and the role **will be** taken. Only **three unexcused absences** from lecture will be allowed. Your final grade **will be reduced by 5 percentage points** for each additional day that you are absent from class.

Excused absences are only acceptable if you are sick, have a family emergency, or have some very important obligation with the university. You must submit a signed note from a Doctor, Department Head, or Coach to be officially excused from class.

You are responsible for any and all announcements made in lecture (including changes to the syllabus).

Withdrawal Policy – The last day to withdraw from this class with a **W** is Tuesday, October 7, 2008. Thereafter, I **will not** issue any withdrawals from the course, and you will receive an official grade.

Academic dishonesty – Students found cheating on exams, quizzes, homework assignments or laboratory assignments will receive an **F** for the entire course. No exceptions are made in this case, so please work independently. Be sure to read the relevant section and know and understand the potential penalties in the University Academic Regulations in the current undergraduate catalog or on the campus web site.

**STUDENTS WHO FEEL THEY MAY NEED AN ACCOMMODATION BASED ON THE IMPACT OF A DISABILITY SHOULD MAKE AN APPOINTMENT WITH THE ATTIC (678.915.7361) TO COORDINATE REASONABLE ACCOMMODATIONS. THE STUDENTS ARE ALSO WELCOME TO CONTACT THE INSTRUCTOR PRIVATELY TO DISCUSS ONE'S SPECIFIC NEEDS.*

TENTATIVE LECTURE AND EXAM SCHEDULE

Week Number	Dates	Topic	Required Text Readings
1	8/19, 8/21	Introduction Life, Chemistry, and Water	Chapter 1 Chapter 2
2	8/26, 8/28	Biological Molecules Energy, Enzymes, and Biological Reactions	Chapter 3 Chapter 4
3	9/2, 9/4	The Cell: An Overview	Chapter 5
4	9/9, 9/11	Exam 1 (Chapters 1-5) – September 9 Membranes and Transport	Chapter 6
5	9/16, 9/18	Cellular Respiration	Chapter 8
6	9/23, 9/25	Photosynthesis	Chapter 9
7	9/30, 10/2	Cell Division and Mitosis Meiosis	Chapter 10 Chapter 11
8	10/7, 10/9	Exam 2 (Chapters 6, 8-11) – October 7 Mendel, Genes, and Inheritance	Chapter 12
9	10/14, 10/16	Genes, Chromosomes, and Human Genetics DNA Structure, Replication and Organization	Chapter 13 Chapter 14
10	10/21, 10/23	From DNA to Protein	Chapter 15
11	10/28, 10/30	DNA Technologies and Genomics	Chapter 18
12	11/4, 11/6	Exam 3 (Chapters 12-15, 18) – November 4 The Development of Evolutionary Thought	Chapter 19
13	11/11, 11/13	Microevolution: Genetic Changes within Populations	Chapter 20
14	11/18, 11/20	Speciation and Macroevolution	Chapters 21-22
15	11/25, 11/27	THANKSGIVING BREAK – NO CLASS	
16	12/2, 12/4	Exam 4 (Chapters 19-22) – December 2 Review for cumulative final!	
		<i>Last Day of Fall Classes – Thursday, Dec. 4</i>	
		FINAL EXAM - TBA	

TENTATIVE LAB SCHEDULE

Week Number	Date	Topic
1	8/21	NO LAB
2	8/28	Introduction to Microscopes
3	9/4	Enzymes
4	9/11	Cell Structure
5	9/18	Diffusion and Osmosis
6	9/25	Glucose Metabolism
7	10/2	Fruit Fly Genetics (Initial setup)
8	10/9	Plant and Animal Mitosis <u>Release Parental Fruit Flies!</u>
9	10/16	Fruit Fly Genetics (Two Weeks After Setup)
10	10/23	NO LAB
11	10/30	Principles of Agarose Gel Electrophoresis
12	11/6	Evaluating Genetic Crosses
13	11/13	DNA Restriction Analysis
14	11/20	Evolving Grasshoppers
15	11/27	NO LAB –THANKSGIVING BREAK
16	12/4	NO LAB