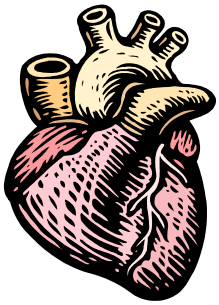
Concepts in Biology
Biology 120 – Spring 2006



Instructor: Dr. Steve Baker
Office: Pierce Hall #117
Phone: 770-784-8446

Office Hours: Tuesday and Thursday 9:30-11:00. Wednesday 3:00-4:30 pm. Students are encouraged to see the instructor during class to make appointments at other times.

Lecture Hours:	MWF	**Room:** Pierce 101
Lab Hours:	Monday, 2:00-5:00	**Room:** Pierce 125

Required Texts: Inquiry into Life, 11th Edition. Mader, Sylvia. McGraw-Hill
Laboratory Manual for Concepts in Biology, 3rd Edition. Morgan, Judith Giles. Emory University Press. (purchase from Ms. Budensiek before first lab, cost TBA)

Course Objectives

- **Students should gain understanding of the scientific process, scientific inquiry and critical thinking skills.**
- **Students should gain a basic knowledge of biological concepts such as cellularity, cellular reproduction, energy, genetics, and evolution.**
- **Students should learn about the basic structure and function of major body systems**
- **An underlying theme of this course relates to the interruption of body homeostasis by disease; this will be addressed through the addition of relevant clinical topics.**

Tentative Lecture Syllabus

Topic		Chapter
I. Science and Life		
1/18	Introduction to Course; How do you see the world?	1
1/20	Scientific Inquiry	1
1/23	Science Case Study	
1/25	Basic Biology: Are you alive?	1
1/27	Viruses; Are they alive?	28.1
II. Cells and Cell Function		
1/30	Prokaryotes/ In-class investigation	3.3, 28.2
2/1	Eukaryotic Cell Structure and Function	3.2 , 3.4
2/3	Lipids and Membrane Structure	2.5, 4.1
2/6	Cell Transport	4.2-4.5
2/8	DNA	24.1
2/10	*Clinical Issues: Breakdowns in Cellular Function*	
III. Cellular Energy		
2/13	The Basics	6.1-6.3
2/15	Exam I, through Breakdown in Cell Function	
2/17	The Foundation of Life: Photosynthesis	8.1-8.3
2/20	Overview of Respiration	7.1-7.4
IV. Growth		
2/22	DNA replication/Chromosomes	24.1
2/24	Chromosomes/Introduction to Cellular Reproduction	5.2
2/27	Mitosis and Cell Division	5.2
3/1	*Clinical Issues--Loss of Control: Cancer*	*25.2*
V. Humans and Homeostasis		
3/3	Gaining nutrients: Digestion	14
3/6	Distributing nutrients: Circulation	12
3/8	Circulation II	12
3/10	*Clinical Issues: Coronary Artery Disease*	*12*
3/20	Sharing nutrients: Parasitism	
3/22	Respiration	15
3/24	The Battle Rages: Immunity	13.2-13.4

3/27	**Exam II, through Parasitism**	
3/29	**Responding to Stimuli**	**17**
3/31	**Stimuli II; Brain overview**	**17**

VI. Human Populations

4/3	**Sex and Reproduction**	**21**
4/5	***Clinical Issues: Reproduction Case Study***	
4/7	**Mendel and his Peas; Mendelian genetics**	**23.1**
4/10	**Modes of Inheritance**	**23.2-23.3**
4/12	**Clinical Issues: Human Genetics**	**26**
4/14	**Molecular Genetics and Cloning**	**24.3**
4/17	**Changes in genes; evolution and natural selection**	**27**
4/19	**Evidences for Evolution**	**27**

VII. Relationships with the Environment

4/21	**Introduction to Ecology/Ecosystems**	**34**
4/24	**Exam III, through evolution**	
4/26	**Plants; structure and function**	**9**
4/28	**Medicinal plants**	
5/1	**Community interactions: competition, exotic species, endangered species**	**33.4**
5/3	**Animal Behavior I**	**32**
5/5	**Animal Behavior II**	**32**
5/8	**Wrapup and review**	

FINAL EXAM: WEDNESDAY, MAY 10, 2-5 pm

The instructor reserves the right to modify this syllabus or the lab syllabus as he deems it necessary.

Additional Course Information:

Writing: Students will write about current topics in biology and as a component of classroom and laboratory learning. Assignments will be made in class and lab.

Papers: One major paper will be required on a topic relating to a human disease or other clinical topic. A handout will be provided to outline specific requirements.

Honor Code: All examinations and work for credit in this course come under the regulations of the Honor Code. Your signature on your examination or paper attests to your upholding the Honor Code in your work.

Absences: The policy on absences is outlined in a separate handout. Unexcused absences or a failure to follow the procedures outlined in that handout will result in a reduction of your grade. Additionally, tardiness is exceptionally rude and will result in a decreased grade.

Cell Phones: They must be turned off if brought into class or lab. Cell phones must be left at the front of class in your book-bag during exams.

Evaluation: Students will be evaluated on their performance in the classroom and the laboratory. Points are distributed as follows:

300 points	3 lecture exams
150 points	laboratory exams (three at 50 points)
175 points	final exam
50 points	research paper
30 points	additional class writings
705 points	total

Plus and minus grades are given in this course.

Lab Schedule
Biology 120
Spring 2006
Dr. Steve Baker

Jan.	**23**	**Lab Topic 1, Scientific Investigation**
	30	**Lab Topic 3, Microscope/Cell**
Feb	**6**	**Lab Topic 4, Cell Membranes**
	13	***Lab Exam 1 (1, 3, 4)*** **Introduction to Respiration**
	20	**Lab Topic 3, Photosynthesis and Respiration**
	27	**Lab Topic 5, Mitosis**
Mar	**6**	**Lab Topic 10, Digestion**
	20	***Lab Exam 2 (3, 5, 10)***
	27	**Lab Topic 9, Circulation and Respiration**
Apr	**3**	**Lab Topic 10, Reproduction/Development**
	10	**Lab Topic 11, Forensics/Molecular Biology**
	17	**Lab Topic 12, Aquatic Ecology**
	24	**Animal Behavior**
May	**1**	***Lab Exam 3 (9,10,11, 12, behavior)***