BIOLOGY 120: CONCEPTS IN BIOLOGY
COURSE SYLLABUS, FALL 2010

Instructor: Mrs. Jennifer Gaulding
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Office hours: Thursdays, 11:15-1:00, and by appointment
** Instructor will not be on campus on Mondays and Fridays but will be available by e-mail.*

Lecture:	Tuesday and Thursday	10:00 – 11:15	Pierce, Room 102
Laboratory:	Wednesday	2:00 – 5:00	Pierce, Room 123

Required texts: 1) *Essentials of Biology*, S.S. Mader, 2nd edition, McGraw Hill publishing company, 2010.
2) *Laboratory Manual for Concepts in Biology*, J.G. Morgan, 3rd edition, Emory University press (your student account will be charged)

Course objective:
Biology 120 is an introductory biology course meant for students who are **not** majoring in biology. It is designed to help students understand core biological concepts so that they can relate to and answer essential biology questions, many of which are listed below. This course will also give students practice with experimental procedures that are used to solve problems and make predictions about biology. The course is intended to help students incorporate a biological perspective into their personal lives, disciplines, and future careers.

Essential questions:
How does "biology" affect me?

1. What principles and techniques do biologists use to study life?
2. How are biological topics communicated in the media, and is the media always right?
3. How do ecosystems remain healthy and balanced? Is it important that they do?
4. How did life on Earth become so diverse?
5. What are the structures and functions common to most living things?
6. How does the human body remain healthy and balanced?

Course Evaluation:

300 points	3 Lecture Exams
150 points	3 Laboratory Exams
175 points	Final Exam
50 points	Independent Project
25 points	Science in the Media Reflection
700 points	Total

**Plus and minus grades are given in this course.*

Exams: Exams will use a variety of formats (including multiple choice, fill-in-the-blank, matching, short answer, etc.) and may cover any material that is in the assigned readings or that is presented or used during class. The final exam will include a cumulative section.

Independent project: Students (in coordination with the instructor) will choose a biology topic of interest to research. Students will then research and present their findings in an informational pamphlet meant for the general public. Additional information about the project, including the deadlines and the rubric that will be used to grade it, is available on the Blackboard site.

Science in the Media Reflection: Student will choose a biology-related article from a popular media source and evaluate it for "good science" and "bad science." Students will write an analysis of their article and will be prepared to share and discuss their findings with the class during the Science in the Media Symposium on October 19th. Additional information about the reflection, including the rubric that will be used to grade it, is available on the Blackboard site.

Top tips on how to succeed in this course:

1. **Review, review, review ...** Biology courses have **a lot** of information. The more you review that information, the more likely you are to remember, understand, and master it. I suggest that you complete the reading assignments before class, attend all classes, take good notes, and review biology topics a little **every day**.
2. **Use lab time productively ...** Lab time matters for this course. Not only is a significant portion of your grade determined by lab exams, but the lab topics and activities are designed to reinforce concepts covered in lecture. By preparing well for labs and by participating fully in labs, you're likely to also do better in the lecture portion of the course.
3. **Ask questions ...** If you don't understand something covered in class, ask questions in class, ask questions of your peers, or arrange to meet with me. I welcome your questions, and if you're struggling, it's important to get help early! Keep in mind that the topics build on one another, so if you get behind early on, it will be more difficult to catch up later.
4. **Study the right things ...** Each topic has a few key concepts that will be critical for performing well on course assignments. I will use class objectives (found on the PowerPoint presentation for each class), short class lectures, and class activities to help point out these key concepts. You will also need to know the details covered in this course, but focus on the key concepts first and then fill in the details.
5. **Study the right way ...** This course is designed to ensure that you not only remember course concepts, but also use them to solve problems. This means that you need to be **very** familiar with course concepts. I suggest that you write out course concepts by memory, make diagrams by memory, practice explaining course concepts to friends, and take practice exams online.
6. **Online resources ...** The textbook website has a myriad of resources, including tutorials, animations, explanations, and practice exams. Additionally, I will post most PowerPoint slides and in-class activities on the course Blackboard website.
7. **Be on time ...** Complete and turn in all assignments when they are due. My due dates are fixed, unless you provide documentation of a serious life event.

Class Policies:

1. **Attendance:** Missed classes, especially labs, can negatively impact your grade. Please see the attached sheet for the attendance policy.

2. **Exams:** Students should place all book bags, purses, and other belongings at the front of the room while sitting for any type of exam or graded assignment. Cell phones should be turned off and should be placed in bags or on a bench at the front of the room. (Desktops should be clear except for the materials needed and authorized for testing).

3. **Late work:** The Science in the Media Reflection will not be accepted late as it will be needed for our class symposium. The Independent Project will be collected at the beginning of class on the day it is due. Assignments turned in after that, including later that day, will be considered late. The final project grade will drop 5 points for each day that it's late. Late assignments should be submitted to me by e-mail and a hard copy should be placed in my mailbox. The date the e-mail is sent will be used to determine the date the assignment was submitted.

4. **Missed exams:** In general, missed exams may not be made up (see the attached sheet for the absence policy). However, if you know that you have a conflict ahead of time, please inform me **at least a week <u>before</u>** the scheduled exam time. Situations will be evaluated on a case by case basis.

5. **Challenging grades:** Any questions about a graded assignment must be submitted, in writing, no later than the following week after the test was returned. I will then re-grade the entire assignment; therefore, a student's grade could increase, stay the same, or decrease.

6. **Electronic devices:** Please turn off all cell phones and other electronic devices prior to entering the classroom.

7. **Academic dishonesty:** Honesty and ethical behavior are imperatives in any career. Therefore, academic dishonesty will not be tolerated. See http://oxford.emory.edu/audiences/current_students/Academic/academic-success/student-honor-code/ for descriptions of what constitutes academic dishonesty. Anyone caught violating this policy will be reported to the Honor Council, as detailed in the honor code. If you have any questions about what constitutes your own work, definitely ask!

LECTURE SCHEDULE, Biology 120
T/Th, 10:00 – 11:15 a.m.
Pierce Room 102

Date	***Topic***	***Reading***
8/26	The Nature of Science	1
8/31	Communities and Ecosystems	31
9/2	Populations and Human Impact	30, 32
9/7	Building Blocks for Life	2, 3
9/9	Cells: Prokaryotes vs. Eukaryotes	4
9/14	Energy and Membrane Transport	5
9/16	Photosynthesis and Cellular Respiration *Topic for Independent Project Due*	6, 7
9/21	Plants and Classification	20
9/23	*LECTURE EXAM 1 (through cellular respiration)*	
9/28	Mitosis and Meiosis	8, 9
9/30	Mendelian Inheritance *Lists for Independent Project Due*	10.1
10/5	Beyond Mendel	10.2 – 10.4
10/7	The Central Dogma: Transcription and Translation	11
10/12	**Midsemester Break**	
10/14	Gene Regulation, Mutation, and Disease	12, 13
10/19	Science in the Media Symposium *Reflection due in class*	
10/21	*LECTURE EXAM 2 (through gene regulation, mutation, & disease)*	

10/26	Darwin and Evolution on a Large Scale	14, 16
10/28	Evolution on a Small Scale	15
11/2	Viruses	17
11/4	Maintenance Organ Systems: Respiratory, Digestive & Urinary *Rough Draft of Independent Project Due*	22, 24
11/9	Transport Organ Systems: Cardiovascular and Lymphatic	23
11/11	Control Organ Systems: Nervous and Endocrine *Peer Review of Independent Project Due*	27
11/16	*LECTURE EXAM 3 (through transport organ systems)*	
11/18	Input and Output Organ Systems: Senses and Motor Functions	28
11/23	Movie: Inside the Living Body	
11/25	**Thanksgiving Holiday**	
11/30	Infectious Organisms	26
12/2	Reproduction and Development *Independent Project Due*	29
12/7	Final Overview Day	
12/9	*FINAL EXAM*	

LAB SCHEDULE: Biology 120
Wednesdays, 2–5 p.m.
Pierce Room 123

Date	**Subject**
9/1	*Lab Topic 1 – SCIENTIFIC INVESTIGATIONS*
9/8	*Lab Topic 7 – AQUATIC ECOLOGY: INVESTIGATIONS OF A LAKE ECOSYSTEM* (wear shoes and clothes that can get wet!)
9/15	*Lab Topic 2 – THE MICROSCOPE, THE CELL*
9/22	*Lab Topic 4 – CELL TRANSPORT*
9/29	**LAB EXAM 1 (1, 7, 2, 4)**
10/6	*Lab Topic 12 – MOLECULAR BIOLOGY*
10/13	*Lab Topic 13 – MENDELIAN GENETICS*
10/20	*Lab Topic 6 - BACTERIOLOGY*
10/27	**LAB EXAM 2 (12, 13, 6)**
11/3	*Lab Topic 9 – THE DIGESTIVE SYSTEM*
11/10	*Lab Topic 10 – THE CIRCULATORY SYSTEM*
11/17	*Lab Topic 11 – REPRODUCTION AND DEVELOPMENT*
12/1	**LAB EXAM 3 (9, 10, 11)**

***The instructor reserves the right to make changes to this syllabus as necessary.**