Concepts in Biology

Biology 120 – Spring 2014

Instructor: Cody Smith, M.S.

Office: Pierce Hall #105

Email: csmit51@emory.edu

Office Hours: By appointment or stop by my office anytime. I am generally in the building all day when I am not teaching and am happy to meet with you.

Lecture Hours: MWF 1:15-2:20 Room 102 TTR 10:00-11:40 Room 102

Lab Hours: M 2:30-5:30 Room 125 T 1:40-4:40 Room 125

Required Texts: *Essentials of Biology,* S.S. Mader & M. Windelspecht, 3rd Edition, McGraw Hill Publishing Company, 2012

Laboratory Manual for Concepts in Biology, 3rd Edition. Morgan, Judith Giles. Emory University Press. Will be available in lab.

Course Objectives:

- Students should gain a basic knowledge of biological concepts such as cellularity, cellular reproduction, photosynthesis, energy, genetics, and inheritance.
- Students should understand and the concepts and evidence behind evolution.
- Students should learn the basic structural components of animals and plants.
- Students should learn about the basic structure and function of major body systems.
- Students should be able to discuss major topics in biology combining their classroom education with critical thinking skills.

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

Week of:

1/13

Biochemistry and the Cell

- 1. A View of Life
- 2. The Chemical Basis of Life

1/20

- 3. The Organic Molecules of Life
- 4. Inside the Cell

1/27

- 5. The Dynamic Cell

2/3

Energy

- 6. Energy for Life

2/10

- EXAM 1
- 7. Energy for Cells

2/17

Inheritance and Reproduction

- 8. Cellular Reproduction
- 9. Sexual Reproduction

2/24

- 10. Patterns of Inheritance

3/3

- 11. DNA Biology
- EXAM 2

3/10 – Spring Break

3/17

Evolution

- 14. Darwin and Evolution
- 15. Evolution on a Small Scale

3/24

- 16. Evolution on a Large Scale

3/31

Plants

- 18. Plants and Fungi
- 20. Plant Anatomy and Growth
- 21. Plant Reproduction

4/7

- EXAM 3

The Body

- 22. Being Organized and Steady
- 23. The Transport Systems

4/14

- 24. The Maintenance Systems
- 26. Defense Against Disease

4/21

- 27. The Control Systems

4/30

- FINAL EXAM
  - MWF Class – May 1 9:00-12:00
  - TTR Class – April 30 2:00-5:00

Classroom Discussions/Papers: Students will be responsible for reading papers assigned by the instructor on various scientific topics throughout the semester. Discussions/debate will occur in class on given topics and are designed to challenge the student to think abstractly. Students will be graded on their critical thinking skills as well as the quality and quantity of their contribution to the discussion. The goal of these discussions is to allow students to become familiar with important scientific topics and be able to discuss them intelligently.

Laboratory: Your lab experience will involve working with living organisms. In addition, you will be learning anatomy through review of dissections. This is an important component of some of your labs.

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

Honesty and ethical behavior are imperatives in any career. Therefore, academic dishonesty will not be tolerated. See http://oxford.emory.edu/academics/student-services/student-honor-code/ for descriptions of what constitutes academic dishonest. 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!

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, frequent tardiness will result in a decreased grade.

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

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

3 Exams – 300 Points

Final Exam – 175 Points

3 Lab Exams (50 points each) – 150 Points

Class Discussions/Papers – 75 Points

Total Points = 700

*Plus and minus grades are given for this course.

Lab Schedule

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Week of:

1/20 Scientific Investigation *Monday Lab will meet on Friday at the same time due to MLK

1/27 Microscope/Cell

2/3 Cell Transport

2/10 **Lab Exam 1**

2/17 Cellular Reproduction

2/24 Molecular Biology

3/3 Reproduction and Development

3/17 The Circulation, Respiration and Renal System

3/24 **Lab Exam 2**

3/31 Digestion

4/7 Animal Behavior

4/14 Aquatic Ecology

4/21 **Lab Exam 3**