

COURSE OUTLINE
SPRING 2008
BIO 140 GENERAL BIOLOGY: 4 SEMESTER CREDIT HOURS
Biology, Chemistry, & Environmental Health Science Department

Instructor: KRISHNA RAYCHOUDHURY

Office Room No.: ALUMNI HALL 202

e-mail address: raychoudhuryk@ benedict.edu

Office Phone Extension: (803) 705-4647

Office Hours: M W F 12 Noon -1PM; F 10AM- 11AM; T TH 11AM – 2 PM
Other Times by Appointment Only

Lecture Time and Place: Bio 140 (01) T TH 9:30AM – 10:45AM ALU 212
Bio140 (03) MWF 11AM – 11:50AM ALU 212
Bio 140 (06) MWF 1PM – 1:50 PM ALU 212

Laboratory Time and Place: Bio 140L (01) W 9:15AM ALU 219
Bio 140L (03) T 2:30PM ALU 219
Bio 140L (06) M 9:15M ALU 219

Textbook: Concepts in Biology by Eldon D. Enger and Frederick C. Ross, and D. Bailey. Twelfth Edition. McGraw Hill, New York, NY, 2007 (Required).

Laboratory Manual "Laboratory Manual-Concepts in Biology by Eldon D. Enger. Frederick C. Ross, & D. Bailey. Twelfth Edition. (Required).

Course Description:

This course is an integrated service course in the biological sciences. Topics include taxonomy, anatomy, physiology, genetics, and ecology. The course does not count for credit toward the Biology major requirements. Science majors should take Bio 147 and Bio 148.

Introduction:

The General Biology course has been designed as an introductory course for non-science students. The course discussions include animals, plants, and microorganisms in relation to cell biology, genetics, reproduction, development, evolution, and ecology. This is a lecture discussion and laboratory course. . The students will be asked to write reports on selected topics related to the General Biology course. The report assignments may relate to films shown in classes, or review of scientific articles assigned by the instructor. All assignment reports and

answers of examination questions should be written in Standard English.

General Objectives:

Upon completion of this course the individual student should achieve these objectives:

1. Define science and describe the scientific method.
2. Name and define several areas of biological sciences and identify several distinguished scientists and their contributions to science.
3. Describe the chemical structure, synthesis, and function of the molecules of life.
4. Summarize the principle characteristics of viruses, bacteria, protistans, fungi, plants and animals.
5. Describe the structure and function of plant and animal cells, tissues, organs, and organ systems.
6. Compare between the photosynthesis and respiration processes.
7. Discuss inheritance of transmitted characteristics among living organisms.
8. Describe the origin and evolution of living organisms.
9. Make inferences about the behavior patterns of living organisms.
10. Analyze the interaction of various organisms with their environment.

Textbook Discussion Topics:

*What is Biology? (Chapter 1)

*The basics of life: Chemistry (Chapter 2)

*Organic Molecules – the Molecules of Life (Chapter 3)

*Cell Structure and Function (Chapter 4)

Enzymes, Coenzymes, and Energy (Chapter 5)

Biochemical Pathways – Cellular Respiration (Chapter 6)

Biochemical Pathways – Photosynthesis (Chapter 7)

DNA and RNA: The Molecular Basis of Heredity (Chapter 8)

*Cell division – Replication and Reproduction (Chapter 9)

Patterns of Inheritance (Chapter 10)

Applications of Biotechnology (Chapter 11)

Diversity within Species and Population Genetics (Chapter 12)

Evolution and Natural Selection (Chapter 13)

The Formation of Species and Evolutionary Change (Chapter 14)

Ecosystem Dynamics: The Flow of Energy and Matter (Chapter 15)

Community Interactions (Chapter 16)

Population Ecology (Chapter 17)

Evolutionary and Ecological Aspects of Behavior (Chapter 18)
 The Origin of Life and the Evolution of Cells (Chapter 19)
 *The Classification and Evolution of Organisms (Chapter 20)
 The Nature of Microorganisms (Chapter 21)
 The Plant Kingdom (Chapter 22)
 The Animal Kingdom (Chapter 23)
 Materials Exchange in the Body (Chapter 24)
 *Nutrition: Food and Diet (Chapter 25)
 The Body's Control Mechanisms and Immunity (Chapter 26) Human Reproduction, Sex, and Sexuality (Chapter 27)

* Tests, examinations, and /or quizzes will be given upon completion of these chapters.

**LABORATORY EXERCISES (FIVE OUT OF EIGHT WILL BE COUNTED
 TOWARD THE LAB SCHEDULES AND SUBJECT TO CHANGE (I.E. WEATHER
 CONDITIONS, COLLEGE ACTIVITIES ETC.)**
 Common Labs:

1. Lab Safety Rules – Week of January 28th, 2008.
2. Metric Measurements and the Scientific Method – Week of February 11th, 2008.
3. Atoms and Molecules – Week of February 18th, 2008.
4. The Microscope – Week of February 25th, 2008.
5. Survey of Cell Types: Structure and Function – Week of March 17th, 2008.
6. Diffusion and Osmosis – Week of March 31st, 2008
7. Application of Meiosis: Genetics Problems – Week of April 7th, 2008.

**MAKE-UP LABS (WILL BE SET-UP ACCORDING TO TEACHER DISCRETION
 DURING THE WEEK OF APRIL 21st, 2008)**

8. Determining Your Daily Energy Balance
9. Frog Dissection
10. Roll Call of Animals

Weekly Lab Schedule Alumni Hall Room 219

M	9:15 AM	K. Raychoudhury
M	2:00 PM	J. Hopper
T	9:15 AM	J. Hopper
T	2:30 PM	K. Raychoudhury
W	9:15 AM	K. Raychoudhury
Th	9:15 AM	J. Hopper

Please Note: Labs start promptly at the time mentioned above. Plan to come a little early. **NO STUDENTS WILL BE ALLOWED TO ATTEND LAB, ONCE THE LAB/ EXPERIMENT HAS STARTED.**

Evaluation Procedures:

An examination covering the lecture will be given upon completion of each unit/chapter. The

unit/chapter examination will cover the subject matter discussed after the previous unit/chapters examination. In other words, no unit/chapter examination will include all the lecture and lab material discussed during the entire semester except the final. The final examination will cover all the lecture materials taught during the semester.

Laboratory and assignments will be due as assigned. The instructor may from time to time give special library assignments to students. All assignments, reports, and answers of examinations questions should be written in Standard English. Evaluation of all written work will be based on the correct use of grammar and the accuracy of technical information.

GRADING SYSTEM:

90% or above = A; 80 to 89.9% = B; 70 to 79.9% = C; 60 to 69.9% = D; and 59.9% or below = F

The college's SE² grading policy will be used in the grading system in this course.

A common pre-exam and final exam will be administered for this course.

The laboratory component of this course constitutes 25% of the final Effort grade.

Students are expected to complete the assigned work within the time framework established by the instructor.

- **Ten points will be deducted for untidy work.**
- **Five points will be deducted for writing / marking on tests.**
- Crumbled up class work, home work, and/or assignments will not be accepted.
- Papers turned in without names, with multiple names, with names scratched out and rewritten, or names not written clearly **will not be graded.**

THE INSTRUCTOR WILL TAKE ONE WEEK TIME TO GRADE EXAMS/ TESTS AND TWO WEEKS TIME TO GRADE ASSIGNMENTS.

Student Requirements:

1. ATTENDANCE: Students are required to attend class regularly, punctually, and not to leave class early. Any student leaving class early will be marked absent. Absences must be excused by the Dean of students from the Division of Student Affairs located in the administration building-room 102. **Official Excuses** must be **presented** to the **instructor within one week** after the student returns to class. Excuses submitted after the one-week time frame will no longer be considered valid. Obtaining an official excuse does not excuse a student from the assignments missed during the absence. As attendance is part of the effort grade, **TWO (2) points will be deducted each time a student misses lecture class from the seventh absence onward regardless of the reason (Final Grading).**

Students are expected to come and settle down in the lecture class within the first **five** minutes of class starting time. Students coming in within the **next five** minutes will be

considered as visitors and will be marked as tardy. Two (2) tardiness will be considered as one (1) absent. ~~STUDENTS WILL NOT BE ALLOWED TO ENTER LECTURE CLASS WHO ARE MORE THAN TEN MINUTES LATE. READ AND FOLLOW THE CLASS ATTENDANCE POLICY STATED ON PAGES 59-60 OF 2007-2009 COLLEGE CATALOGUE.~~

2. LABORATORY REPORTS: Laboratory reports are assigned by the instructor during the lab period. Individual lab reports are due at the end of each lab period (same day). Labs will be graded based on: participation, lab report, cleaning up after completion of lab, & discipline.

3. EXAMINATION POLICY: Examinations will be given only on the days they are scheduled. Make-up examinations will only be given to students with an official excuse. Students caught cheating or helping others will earn a ZERO on the test/exam.

4. ASSIGNMENTS: All students are required to complete FOUR assignments within the time frame set by the instructor. Each assignment will carry 100 points. The instructor is under no obligation to accept late reports. Sharing of information with others on any assignment will lead to sharing of grades.

Before Midterm

Assignment 1: Topic: Biological Invention. Start in class, finish at home.

Assignment 2: Topic: Current Event Assignment. Take home.

After Midterm

Assignment 3: Topic: Human Reproduction and Beyond..... In Class.

Assignment 4 (Part1): Topic: Diseases and Conditions. Start in class, finish at home.

(Part 2): Topic: The AIDS Pandemic..... In Class.

General Instructions / Guidelines for Students:

1. Bring a pen / pencil, and a note book to class. **All hand written work must be done using either a #2 pencil , a blue, or a black ball point pen. Work done using any other colored pen or pencil will not be graded.**
2. Bring your Biology textbook to your lecture class.
3. Work on your **OWN** worksheets & study guides (mandatory). Turn in your completed worksheets on chapter test day. This will be graded.
4. Take exams / tests on the scheduled date.
5. Do not miss labs. Students are required to work in groups and within their groups only for certain labs. Bring your lab manual and a pencil to the lab (ALU 219).
6. Complete the lab as directed. Turn in your individual lab sheets as instructed at the end of the lab period. This will be graded.
7. Class Participation (text book exploration) is mandatory. Turn in

assigned work at the end of class (same day). This will be graded.

8. Students are required to come to class / lab on time. Remember, attendance, class participation, & labs are part of your final grades. Students must provide official college excuses to the instructor.

9. Students are expected to sign the attendance roll when they come to class / lab.

10. Students are required to turn in their individual work in person. **No home work/ assignments will be accepted under the door or via e-mail.**

11. Please keep all questions not related to the topic being discussed (i.e., excuses, late work, or other issues) until the end of the class.

12. Do not wear head phones or other such devices in class and keep cell phones/ beepers turned off.

13. Class disruptions in any form will not be tolerated. Disruptive students will be asked to leave the class/lab.

Success Equals Effort Grading Policy

Course: General Biology (BIO 140) Instructor: Dr. Krishna Raychoudhury

The Grading has 2 components. *Effort & Knowledge.*

Effort Indicators

1. Class Attendance: 20%.
2. Labs: 25%
3. Assignments completed and turned in as directed: 20%
4. Worksheets completed and turned in as directed: 20%
5. Class participation: 15%

Knowledge Indicators

1. Chapter Test Scores: 26%
2. Mid-term Test Score: 10 %
3. Final Exam Score: 13%
4. Assignment Scores: 51%

(Scores allotted to each component of effort and knowledge indicator is subject to change).

Grading Scale:

Effort Grade Scale

Low Score	Letter Grade
90	A
80	B
70	C
60	D
0	F

Knowledge Grade Scale

Low Score	Letter Grade
90	A
80	B
70	C
60	D
0	F

Implementation of Grades

EACH STUDENT IS ASSIGNED A NUMERICAL GRADE FOR EFFORT AND A NUMERICAL GRADE FOR KNOWLEDGE BY INPUTTING GRADES INTO THE EXCEL GRADE BOOK THE EXCEL ELECTRONIC GRADE BOOK WILL CALCULATE THE STUDENT'S LETTER GRADE FOR EFFORT, KNOWLEDGE, AND THE FINAL GRADE.

Useful Resources Internet

1. Wikipedia, the free encyclopedia.
2. CNN. Com (health section).
3. ABC News (health section).
4. Medline plus.

Books

1. Fox, S.I. Human Physiology. Wm. C. Brown Publishers, Dubuque, IA., 2006.
2. Guyton, A.C., and Hall, J.H. Human Physiology and Mechanism of Disease. Wm. C. Saunders Company, Philadelphia, P A. 1997.
3. Harris, L.C. Concepts in Zoology. Harper Collins Publishers, Inc, New York, NY, 1992.
4. Marieb, E.N. Essentials of Human Anatomy and Physiology, The Benjamin/Cummings Publishing Company, Inc., Redwood City, CA, 1997.
5. Rischer, C.E. and Easton, T .A. Focus on Human Biology. Harper Collins Publishers, Inc., New York, NY, 1992.
6. Vander, A.J., et al. The Mechanisms of Body Function. McGraw-Hill Publishing Company, New York, NY, 1994.