

BIOL 2454: GENERAL BIOLOGY I

Fall Semester, 2014

Biology Department, Dr. Jacqueline Horn, Department Chair

COURSE DESCRIPTION

This course is required of all biology majors. Topics include cell structure and function, biological diversity, plant biology, and ecology. This course includes one semester hour credit for laboratory sessions.

COURSE SEQUENCE IN CURRICULUM

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PRE-REQUISITE INFORMATION

None

INSTRUCTOR INFORMATION

Name: Dr. Brenda Whaley
E-mail: bwhaley@hbu.edu
Office Phone: 281-649-3184
Office Location: S224
Office Hours: Monday 2-4 pm and Wednesday 9-11 am
Web Page Address, Web Board, ListServ: Blackboard

LEARNING RESOURCES

Course Text: *Biology: Tenth Edition*. Raven, et. al., McGraw-Hill.
Laboratory Text: Laboratory Manual for General Biology W/Data Analysis Perry, et. Al., Brooks/Cole Cengage Learning, 2009
Supplementary Text: None
Other Required Materials: Dissection kit is required for the laboratory portion of this class

COURSE OBJECTIVES

Purpose of the course:

BIOL 2454 introduces the biology major to a study of taxonomic classification, followed by a detailed survey of the structures and life cycles of plants. The final two weeks are devoted to a study of how matter and energy flow through ecological systems and the impact that humans have had on the environment. This gives the student a knowledge base that prepares them for specialized upper level biology courses and for the Biology GRE. The 1-hour credit laboratory component of the course focuses on microscope skills and critical thinking.

Aims for the course:

We hope that students will:

- a) be encouraged to learn more about the ecology of our planet and man's impact on the environment.
- b) develop an understanding of the underlying principles that unite life on our planet in the face of apparent diversity.

- c) be instilled with knowledge about the plant kingdom.

On completion of this course, students should be able to:

- a) name and describe the six kingdoms of living organisms
- b) compare and contrast representatives of different plant phyla.
- c) discuss plant reproduction.
- d) discuss biomes, ecosystems, and the impact humans have had on the environment
- e) understand the principles of the theory of evolution

RELATION TO DEPARTMENTAL GOALS AND PURPOSES

“The Biology Department will:”

“...prepare students for their careers by offering biology courses with an academically rigorous, contemporary curriculum to support their major requirements or liberal arts education and to encourage a lifetime of learning.”

“...offer experiences for undergraduate research in the biological sciences that provide the opportunity to develop professionalism and skills in experimentation and data analysis, interpretation, and presentation.”

“...provide mentoring and experiences that enable students to graduate in an appropriate time with the appropriate qualifications and professional attitudes required for success and service.”

“...provide a Christian environment in which students, faculty and staff integrate the principles of the biological sciences with their faith.”

RELATION TO COLLEGE GOALS AND PURPOSES

“...to prepare students for careers and further education in the natural sciences and mathematics in a nurturing Christian environment. The College will also serve the HBU community by providing science and mathematics classes that empower HBU students to meet the goals and requirements of their field of study and enrich their liberal arts education.”

RELATION TO THE PURPOSE STATEMENT OF THE UNIVERSITY

University mission and purpose statement from the Houston Baptist University Catalog, 2009-2010: “...to provide a learning experience that instills in students a passion for academic, spiritual, and professional excellence as a result of our central confession, “Jesus Christ is Lord”

“...Committed to providing a responsible and intellectually stimulating environment that:

- fosters spiritual maturity, strength of character, and moral virtue as the foundation for successful living
- develops professional behaviors and personal characteristics for life-long learning and service to God and to the community
- meets the changing needs of the community and society
- remains faithful to the ‘**Nature of the Institution**’ statement”

“...Promotes learning, scholarship, creative endeavor, and service”.

ATTENDANCE

Please see the official Attendance Policy in the HBU Classroom Policy on Blackboard. Students missing more than 25% of the class will be given a failing grade.

Class attendance will be closely monitored in lecture and lab throughout the semester. At the end of the semester the student's final average will be reduced by 0.1 points for each unexcused absence over 3. For an absence to be excused external documentation must be provided.

ACADEMIC ACCOMODATIONS

Students needing learning accommodations should inform the professor immediately and consult the Academic Accommodations section of the HBU Classroom Policy posted on Blackboard.

COURSE REQUIREMENTS & GRADE SCALE

Course requirements:

Students are required to take three lecture exams and a final exam which is comprehensive. Students must also complete BIOL 2054. The lab grade will be obtained from the laboratory instructor.

Grading standards:

The lecture grade is the average of the three lecture exam scores and the final. The lecture grade represents 75% of the grade for the course. The lab grade represents 25% of the grade for the course.

The grading scale is as follows:

A = 90 – 100; B = 80 – 89; C = 70 – 79; D = 60 – 69; F = below 60

PROFICIENCIES:

Technology component:

Students must download lecture notes from the internet.

Designated essay/writing component:

Each lecture test contains an essay question.

Reading component:

The students are asked to read the text and answer reading comprehension questions on the examinations.

Oral communication component:

Not applicable.

Mathematics component:

Data will be averaged and graphed in the laboratory.

Critical thinking component:

The laboratory includes experiments and exercises which require students to make observations, formulate hypotheses, perform well-designed experiments, evaluate the experimental data, and reach scientifically sound conclusions based on the data and observations obtained. In addition, the study of prepared microscope slides and dissected specimens reinforces pattern-recognition skills.

LATE WORK & TEST POLICY

Late work:

Not applicable.

Missed tests:

One missed lecture exam can be made up by completing a **comprehensive** make-up examination at the end of the semester. Only one exam may be replaced with a make-up exam, all others will be recorded as a zero.

EVALUATION

Method of student appraisal of faculty:

Students will be given an opportunity to appraise the professor by completing the IDEA Faculty Evaluation Questionnaire, and/or the COSM course evaluation at the end of the semester. The instructor, the department chairman and dean will review the responses of the students after the completion of the course.

Method of evaluating student response to course:

Students will be given an opportunity to describe their response to the course by completing the IDEA Faculty Evaluation Questionnaire and/or the COSM course Evaluation at the end of the course. The instructor, the department chairman and dean will review the responses of the students after the completion of the course.

LABORATORY DRESS CODE

Students may be asked in advance to wear closed-toed shoes and long pants during certain experimental procedures.

LABORATORY CONDUCT AND SAFETY

IMPORTANT INFORMATION FOR THIS COURSE: IF A STUDENT IS PREGNANT OR NURSING, SHE WILL NOT BE ALLOWED TO ATTEND THE LABORATORY SESSIONS BECAUSE SOME OF THE CHEMICALS, WHICH ARE NORMALLY INNOCUOUS, USED IN THESE LABORATORY EXPERIMENTS, MAY BE HARMFUL TO A DEVELOPING FETUS. IF A STUDENT BECOMES PREGNANT DURING THE COURSE, SHE MUST STOP ATTENDING THE LABORATORY SESSIONS IMMEDIATELY AND SHE IS TO NOTIFY HER PROFESSOR. THE PROFESSOR WILL DISCUSS OPTIONS THAT THE STUDENT WILL HAVE TO ENABLE HER TO COMPLETE THE COURSE REQUIREMENTS.

TOPICAL OUTLINE - *include table, calendar, or topical outline with dates*

Lecture Schedule:

Ch 1	The Science of Biology
Ch 2	The Nature of Molecules and Properties of Water

Ch 3 The Chemical Building Blocks of Life
Ch 4 Cell Structure
Ch 27 Viruses

Lecture Exam 1 (Ch 1, 2, 3, 4, and 27); Tues., September 16

Ch 28 Prokaryotes
Ch 29 Protists
Ch 32 Kingdom Fungi
Ch 30 Seedless Plants
Ch 31 Seed Plants

Lecture Exam 2 (Ch 28, 29, 32, 30, and 31) Tues., October 14

Friday, October 31 is the *Last Day to Drop with a W*

Ch36 Plant Form
Ch 37 Transport in Plants
Ch 38 Plant Nutrition and Soils
Ch 40 Sensory Systems in Plants
Ch 41 Plant Reproduction

Lecture Exam 3 (Ch 36, 37, 38, 40, and 41) Thursday, November 8

Ch 55 Ecology of Individuals and Populations
Ch 56 Community Ecology
Ch 57 Dynamics of Ecosystems
Ch 58 The Biosphere
Ch 59 Conservation Biology

Comprehensive Final Exam – TBA December 9 – 12 from University Final Exam Schedule

Laboratory Segment:

Content of Lab: Lab will consist of experiments, dissection, microscope work, lab lectures, and multimedia presentations. Lab reports will not be graded but the material should be completed in order to do well on the lab exam. Notes should be taken on the multimedia presentations and lab lectures. All of this material will be on the lab exam.

Attention female students: The human fetus may be harmed by exposure to chemicals, which would not be toxic to a female adult. If you are pregnant or nursing or become pregnant while enrolled in this course please inform your instructor as soon as possible so that appropriate precautions may be taken.

Attention all students: Review and sign lab safety policy on the first day of lab. **Lab attendance is mandatory.** Missed labs will result in a 10% reduction in practical grade per unexcused absence.

The content of this outline and the attached schedule are subject to change at the discretion of the professor.

Student Signature – I have read and understand the syllabus for this class. I understand that the content of this syllabus and the topical outline are subject to change at the discretion of the professor. I have read and understand the HBU Classroom Policy posted on Black Board. **I promise to uphold the Code of Academic Integrity at Houston Baptist University and will not tolerate its violation by others.**