Course Prefix and Number: Biol1409  
Course Title: General Biology II

Hill College is committed to the principal of equal opportunity in education and employment. The college does not discriminate against individuals on the basis of age, race, color, religion, sex, national origin, disability, or veteran status in the administration of its educational programs, activities, or employment policies.

Catalog Description:

BIOL 1409  
Fundamental principles of living organisms including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of reproduction, genetics, ecology, and the scientific method are included.

Lecture Hours: 3  Lab Hours: 1  Semester Credit Hours: 4

Prerequisites: BIOL1408, permission of instructor, or assignment by appropriate test.

Introduction and Purpose:

This course is meant to round out a student’s understanding of the natural world. This course covers continuation of the species including genetics and genetic counseling; it will also cover evolution, microbiology, plant anatomy and physiology, plant taxonomy, animal taxonomy, animal behavior, population growth, the nature of ecosystems, the biosphere and current environmental concerns.

Instructional Materials:


Supplies:  Pencils, pens, paper, calculator, scantron form 882-E
Objectives/Student Learning Outcomes:

At the completion of this course, the student should be able to:
1. Demonstrate knowledge of core concepts of biology.
2. Demonstrate knowledge of the mechanisms that control gene expression.
3. Demonstrate understanding of the theory of evolution.
4. Demonstrate knowledge of microorganisms.
5. Demonstrate knowledge of basic plant anatomy.
6. Demonstrate knowledge of plant reproductive physiology including photosynthesis.
7. Identify common vascular plants.
8. Identify common avascular plants.
9. Explain the alternation of generations found in plants.
10. Identify major animal phyla.
11. Demonstrate an understanding of animal behavior.
12. Understand the implications of exponential growth.
13. Demonstrate an understanding of the nature of ecosystems.
14. Demonstrate knowledge about the biosphere.
15. Understand recent environmental concerns.

The students’ success in completing these objectives will be measured using a set of examinations and assignments described, in detail under the section of this syllabus headed “Method of Evaluation.”

Methods of Instruction:

This course will be taught using the traditional lecture with laboratory lessons being used to reinforce lecture topics.

Audio-visual materials and computer based technology will be used when appropriate. Students will be shown how to use a calculator where appropriate.

Methods of Evaluation:

Grades in this course will be based on the following evaluative criteria:

55% of the course grade will come from lecture (including major exams and any assignments/quizzes)

25% of the course grade will come from laboratory.

20% of the course grade will come from a comprehensive final exam.

Letter grades for the course will be based on the following percentages:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
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70-79%  C
60-69%  D
Below 60%  F

Course Outline:

Class Policies:

Regular attendance at all class meetings is expected. Disruptions in class will not be tolerated. Lab safety regulations will be enforced.

Disabilities/ADA

In accordance with the requirements of the Americans with Disabilities Act (ADA) and the regulations published by the United States Department of Justice 28 C.F.R. 35.107(a), Hill College’s designated ADA coordinator, Debra Hargrove, Vice President, Human Resources and Organizational Development, shall be responsible for coordinating the College’s efforts to comply with and carry out its responsibilities under ADA. Students with disabilities requiring physical, classroom, or testing accommodations should contact Salley Schmid, Director of Counseling, at (254) 659-7651 or sschmid@hillcollege.edu

Topic Outline

1. DNA Biology and Technology
2. Control of Gene Expression and Cancer
3. Genetic Counseling
4. Evolution of Life
5. Microbiology
6. Evolutionary History of Plants
7. Nonvascular Plants
8. Seedless Vascular Plants
9. Seed Plants
10. Photosynthesis
11. Plant Structure, Reproduction and Development
12. Plant Nutrition and Transport
13. Control Systems in Plants
14. Animal Phylogeny
15. Animal Behavior
16. Population Growth and Regulation
17. Nature of Ecosystems
18. The Biosphere
19. Environmental Concerns

Lab Topics:

1. Chi Square
2. DNA Biology and Technology
3. Evidences of Evolution
4. Microbiology
5. Plant organization
6. Photosynthesis
7. Seedless Plants
8. Seed Plants
9. Animal Phylogeny
10. Sampling Ecosystems
11. Effects of Pollution on Ecosystems

Bibliography:
