

COURSE OUTLINE

BIOL-290H

Biology Research - Honors 3 Semester Hours

HOWARD COMMUNITY COLLEGE

Description

Biology Research is an honors course which provides students with an opportunity to engage in biological research. With the guidance of a faculty member, students select a research topic, carry out a literature search, design and execute appropriate research, write a scientific paper, and deliver a formal oral presentation to the class and science faculty. There is an emphasis on oral communication throughout the semester including weekly oral progress reports followed by class discussion and feedback as well as the final oral presentations. Prerequisite: A or B in BIOL-101, ENGL-121 or ENGL-101 and consent of instructor. (3 hours weekly)

Overall Course Objectives

Upon completion of this course, the student will be able to:

1. Formulate a scientific problem and appropriate hypotheses.
2. Conduct a literature search on a particular problem or question in the biological sciences.
3. Design and implement a scientific research project and write a formal research proposal.
4. Apply the following statistical analyses using statistical computer software: chi-square goodness-of-fit, chi-square independence test, and T-test for independent samples.
5. Deliver oral progress reports to the class that effectively communicate the status of the project and problem being encountered.
6. Record data and observations during the course of the research.
7. Write a formal research paper in which the problem, background information and research procedures, results, and conclusions are presented.
8. Deliver a formal oral presentation of his or her research project which effectively and clearly communicates to the listeners the student's research problem, procedures and results.
9. Evaluate the research projects presented by other class members.
10. Evaluate the oral presentations delivered by other class members.

Major Topics

- I. Introduction to Research
- II. Library Research Techniques
- III. Use of Statistics in Biological Research
- IV. Independent Research Projects
- V. Instruction in Oral Presentation Techniques
- VI. Oral Presentations

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will include the following:

Final grades will be calculated on the basis of a written research proposal, oral progress reports, research paper and oral presentation.

Oral Communication: Oral communication is a major aspect of this course, and includes oral progress reports and a formal oral presentation.

Other Course Information

This course is a Science elective and an Arts and Sciences elective. Honors designation is awarded if the student earns a grade of A or B.