

COURSE NUMBER: HS908
COURSE TITLE: Biotechnology
COURSE LENGTH: Semester, One Credit (Offered fall semester only.)
PREREQUISITE: Biology
GRADE LEVEL: 11 or 12

COURSE DESCRIPTION:

Biotechnology is a one semester course that builds upon the genetics covered in Biology. The course focuses on new, emerging technologies in biotechnology, the role of biotechnology in modern society, and the ethical concerns of the application of and continued research in this branch of biology.

COURSE RATIONALE:

Biotechnology is a one semester, one credit course offered by the science department. Biotechnology will introduce the students to the principles and applications of recombinant DNA technology. The course explains the uses of biotechnology to increase food production, produce medicines and treatments for disease, and applications of biotechnology to remediate environmental damage.

METHOD OF INSTRUCTION:

Most of the emphasis of this course is on student laboratory work. Students will participate in discussions of the applications of and ethical considerations of recombinant DNA technology. Students will conduct teacher-facilitated research and will conduct many labs to reinforce their learning and understanding.

ASSESSMENT:

Approximately 50% of the course grade is based on laboratory activities. 20% is based on tests and quizzes, 30% is evaluated on daily work, assignments, and student research. Course grades will follow the Denison High School common grading scale.

CRITICAL OBJECTIVES:

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

1. recognize the foundations of modern biotechnology.
2. explain the principles that form the basis of biotechnology.
3. describe the applications of biotechnology with regards to plants, animals, and microorganisms.
4. describe the applications of biotechnology with regards to human health, and the human genome project.
5. evaluate both sides of the ethical implications of biotechnology.
6. demonstrate proper laboratory technique and practice laboratory safety.
7. conduct self-directed research and critically evaluate available information.