



Biotechnology - Course Syllabus (.5 Credit)

Description:

This introductory Biotechnology course offers the student an opportunity to experience the basics of microbiology, human genetics, and exploration of bioethical issues. This course includes career exploration, as well as the history and applications of DNA/RNA technology, molecular biology, bioethics, and laboratory safe practices. Specific topics in genomics and bioinformatics are included. The course concludes discussing bioethical issues relating to this powerful new technology.

Textbook: Biotechnology - Excel Education Systems, Inc. – 2020 ©

Course objectives:

Throughout the course, you will meet the following goals:

- Describe the structure and function of DNA, RNA, chromosomes, genes, and proteins.
- Define biotechnology, including examples of real-world applications.
- Describe the many ways that Biotechnology has contributed to health care innovations, lowered its costs and have led to a variety of controversial social and ethical issues.
- Discuss new varieties of farm plants and animals have been engineered by manipulating their genetic instructions to produce new characteristics.
- Explain how genetic information is passed from parents to offspring.

Contents:

Module 1: An Introduction to Biotechnology

Module 2: The Biotechnology Laboratory

Module 3: Careers in Biotechnology

Module 4: Scientific Measurement

Module 5: DNA and RNA

Module 6: Analyzing RNA and Proteins

Module 7: PCR and DNA Sequencing

Module 8: Recombinant Molecules and Bioremediation

Module 9: GMO, Drug Discovery, and Vaccine Development

Grading Scale

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = under 59%

Grade Weighting

Module Quizzes..... 70%

Final Exam..... 30%

100%