BIOL 4480: Food Microbiology

4 Credit Hours

Prerequisite: BIOL 3340

This course covers various aspects of food microbiology. Students will learn the source of microbial contamination during food production, processing and storage and the factors influencing microbial growth in foods. Students will explore the role of microorganisms in food spoilage, illnesses, fermentation, and preservation. In the laboratory, students will learn the methods used to isolate, enumerate, identify, or control microorganisms in food. The laboratory is an integral part of the course, allowing students to apply microbiological concepts in laboratory exercises.

BIOL 4486: Bioethics

3 Credit Hours

Prerequisite: BIOL 3300, plus a minimum of 9 additional hours of 3000-4000 level Biology or Biochemistry or consent of instructor.

This course will enable the student to think more critically about some of the difficult moral problems which arise in the practice of science and from our contemporary understanding of living systems and biotechnology. Readings and discussion will focus on issues of personal decision making and public policy regarding both biomedical and environmental issues.

BIOL 4490: Special Topics in Biology

1–4 Credit Hours

Prerequisite: Varies as to topic.

Selected special or current topics of interest to faculty and students.

BIOL 4500K: Bioinformatics I

4 Credit Hours

Prerequisite: A grade of "B" or better in BIOL 3300, and (MATH 1190 or MATH 1179) Concurrent: BIOL 3410

Students use the fundamental concepts of biological sequence analysis, including information flow in biological systems and use of sequence and structure databases in research and drug discovery, which are the underpinnings of the genomic revolution. Students will: assemble sequencing reads into contigs; find and annotate protein coding genes; search biological databases; perform sequence alignments; analyze the phylogenetic relationships between sequences; assess the statistical significance of assembly, search and alignment results; and predict protein structure.