BIOL 4470: Methods in Forensic DNA Analysis

3 Credit Hours

Prerequisite: BIOL 3300 and BIOL 3300L

This laboratory-intensive course will introduce students to the techniques currently used in Forensic DNA profiling by crime labs across the country. In laboratory activities students will extract and purify DNA and utilize PCR-based profiling methods. Students will also learn to interpret data and generate reports. Discussions will include the historical development of DNA profiling, and the development of new profiling methods. Legal issues associated with quality control, frequency estimates, chain of custody, and admissibility will also be explored by students in the class.

BIOL 4475: Virology

3 Credit Hours

Prerequisite: BIOL 3300; Recommended - BIOL 3340

This course will explore current concepts associated with the field of virology. The structure and genetic composition of viruses as well as strategies for replication and expression of viral genetic material will be explored. Mechanisms of viral pathogenesis will be presented. In addition, current methods for viral diagnostics, prevention of viral infection and treatment of infected individuals will be presented within the context of viruses of historical significance as well as newly emergent viruses of current medical concern. Novel infectious agents such as satellites, viroids and prions will also be discussed.

BIOL 4476: Mycology

3 Credit Hours

Prerequisite: BIOL 3300

This course is the study of unicellular and multicellular fungi. Students will explore the nature, morphology, cell structure, growth and metabolism of fungi. Students will be able to understand the beneficial and the harmful role of fungi in an ecosystem and will learn methods of controlling harmful fungi. Students will learn gene manipulation techniques in the development of Biotechnology products using fungi as vectors.