

Minnesota State University Moorhead

BIOL 605: Forensic Biology

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

The biology and biochemistry of forensic techniques will be explored.

B. COURSE EFFECTIVE DATES: 02/11/2021 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Extraction, amplification, and analysis of nucleic acids from a variety of biological matrices.
2. Instrumentation for forensic analysis of biological samples.
3. Forensic entomology and forensic anthropology.
4. Biochemistry of decay.
5. Drugs and toxicology.

D. LEARNING OUTCOMES (General)

1. Understand the theory of modern biology and biochemistry techniques used in forensic science, such as:
 - a. Electrophoresis, PCR, etc.
 - b. DNA Profiling, including STR, SNP, VNTR, mDNA, and Haplotyping.
2. Analyze and interpret results obtained from biological and biochemical techniques (listed above) in the contexts of:
 - a. Collecting/extracting and processes DNA samples from various sources: Blood, semen, vaginal secretions, sweat, urine, fecal matter, saliva, soil, etc. including special characteristics and cautions with each.
 - b. Human remains and other organism evidence: Including forensic entomology and forensic anthropology (identification of gender, race, age of remains by measurements of bones and teeth).
 - c. Post-mortem interval: by analysis of stomach contents, K+ in vitreous
3. Compare and contrast methodological differences in forensic approaches.
4. Explain the sources of error, confidence, limitations, and methods to decrease error specific to a forensic analysis.
5. Critically read and respond to forensic articles.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted