Bemidji State University

CHEM 2270: Forensic Science Laboratory

A. COURSE DESCRIPTION

Credits: 1
Lecture Hours/Week: 0
Lab Hours/Week: 0
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None

MnTC Goals: Goal 03 - Natural Science

Introduction to techniques in Forensic Science. These techniques include, but are not limited to: Bloodstain analysis, HPLC, GC-MS, PCR, and microscopic analysis of biological and physical evidence. [Core Curriculum Goal Area 3]

B. COURSE EFFECTIVE DATES: 08/02/2023 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Bloodstain Pattern analysis
2. Toxicology with HPLC
3. DNA isolation, amplification with PCR, and DNA electrophoresis
4. Microscopy of Fibers and Hair
5. Microscopy of Blood
6. Impression Evidence analysis
7. GC-MS analysis of simulated urine

D. LEARNING OUTCOMES (General)

1. learn the analytical tools necessary to identify biological and chemical crime scene evidence.
2. learn how to identify the different types of bloodstain patterns using microscopy techniques.
3. learn DNA amplification techniques using PCR.
4. learn to identify chemical crime scene evidence using HPLC and GC-MS.

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

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus
G. SPECIAL INFORMATION

None noted