Minnesota State University Moorhead

CHEM 605: Forensic Chemistry

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

The chemistry and biochemistry of forensic techniques will be explored.

B. COURSE EFFECTIVE DATES: 02/01/2021 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Analytical chemistry including interpreting a calibration curve with and without matrix effects
2. Basics of forensic chemistry techniques and instrumentation, with emphasis on GC-MS and LC-MS
3. Basics of forensic biochemistry techniques and instrumentation, with emphasis on electrophoresis
4. Uncertainty in science and the courtroom
5. Biochemistry of decay

D. LEARNING OUTCOMES (General)

1. Understand the theory of modern analytical chemistry and biochemistry techniques used in forensic science, such as chromatography, spectroscopy, electrophoresis, DNA fingerprinting, etc.
2. Analyze and interpret results (spectra) obtained from chemical and biochemical techniques.
3. Compare and contrast methodological differences in analytical approaches.
4. Explain the sources of error, confidence, limitations, and ways to decrease error specific to an analysis.
5. Critically read and respond to analytical/forensic chemistry 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