Course Information Form (CIF)

Course Code: SCI 208 (IAI LP 901L)

Course Title: Forensic Science II: Death Analysis

Department: Natural Sciences
PCS Code: 1.1 - Baccalaureate/Transfer
CIP Code: 43.0406
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-2-4
Credit Hour Distribution:

Lecture: 3	Lab: 2	Clinical: 0	**Total: 4**

General Course Information

Catalog Description

Selected topics in forensic science, emphasizing pertinent factors associated with cause, mechanism, and manner of death. These are correlated with cause of death, as well as physical evidence found on or near the decedent.

General Course Objectives

- To introduce the student to selected principles of biology and physics, as applied to the field of forensic science and death analysis.
- To observe, identify, and categorize evidence associated with a death scene.
- To infer cause and manner of death from such evidence.

Minimum Placement Levels

English	Reading	Math
Placement out of ENG 099	Placement out of CCS 098	None

Prerequisites

None

Methods of Evaluation

3-4 objective hourly exams (includes final), module assignments and case studies, module lab reports, module quizzes, and 1-2 class presentation(s).

Instructional Materials and Additional Supplies

Forensic Science: Death Analysis, by John Moore (printed on campus).

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Human Anatomy and Physiology Overview	1. Identify and name major body systems. 2. Recognize how impairment or cessation of system functions can lead to the death of an individual. 3. State the definition of selected anatomical terminology and forensics terminology, and explain each term's purpose.	6	6	0
Ballistics	1. Name and identify major types of firearms and action types. 2. Identify the three categories of ballistics. 3. Explain the characteristics of a projectile. 4. Identify the four basic components of ammunition. 5. Measure and identify different calibers. 6. Describe the relationship between internal ballistics and projectile velocity. 7. Explain the purpose of rifling. 8. Discuss ways to match projectiles/casings to a specific weapon. 9. Explain the difference between subsonic and supersonic. 10. Calculate estimated depth of penetration (ballistic putty) of a projectile as function of the mass and velocity of the projectile (kinetic energy calculation). 11. Explain the process of recoil.	3	2	0
Explosives	1. Name the major categories of explosives. 2. Distinguish between diffuse and concentrated explosives. 3. Name and explain the five major components of an explosion: pressure, concussion, vacuum/implosion, primary and secondary fragmentation, and heat. 4. Define tensile strength. 5. Distinguish between low and high explosives. 6. Explain deflagration vs. detonation. 7. Explain concussive trauma as related to cause and mechanism of death.	3	2	0
Skeletal Remains, Forensic Anthropology, Odontology, Unidentified Remains, and Victim Identification	1. Identify bones based on key geometrical traits and landmarks. 2. Determine right from left for larger appendicular bones. 3. Use methodologies in estimating the age of bones. 4. Distinguish between animal bones and human bones. 5. Identify individual human bones, and determine size when possible. 6. Identify sex, age, and stature of individual based on bone samples. 7. Identify and explain pre-mortem and post-mortem trauma, both skeletal and soft tissue. 8. Identify all major tooth types in the human. 9. Identify erosion and occlusal attrition on lab specimens. 10. Determine approximate skull age from teeth.	9	8	0
Forensic Radiology	1. Identify and interpret basic forensic-related trauma as seen on standard radiographs. 2. Utilize skeletal anatomy to determine location of trauma. 3. Explain the role of radiology in forensics.	3	2	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Blood Spatter Analysis	1. Interpret blood spatter patterns in order to reconstruct events at the scene of the crime. 2. Interpret blood spatter patterns in order to determine angle of impact based on width to height ratio of the blood stain. 3. Using trigonometric sine functions, determine point of origin of the blood spatter. 4. List and describe the main categories of bloodstain patterns.	3	2	0
Traumatic Death (selected types)	1. Describe the mechanisms involved in deaths due to asphyxia (including deaths in custody). 2. Describe the mechanisms involved in deaths due to drowning. 3. Describe the mechanisms involved in deaths due to electrocution. 4. Describe the mechanisms involved in deaths due to hypothermia. 5. Describe the mechanisms involved in deaths due to blunt trauma/falls. 6. Describe the mechanisms involved in deaths due to suicide.	6	4	0
Pathology and Post-Mortem Changes	1. Explain the difference between cause of death (CoD), mechanism of death, and manner of death (MoD). 2. Describe what factors influence human decomposition. 3. Explain how the timing of rigor depends on energy status at time of death (ToD). 4. Describe how temperature and oxygen availability have major influences on decomposition. 5. Explain that insect activity can establish a timeline of ToD. 6. Explain the special considerations needed when dealing with dumped bodies (surface burial), buried bodies, submerged bodies, and severely decomposed bodies. 7. Empirically determine the correlation between heat loss and surface/volume ratio. 8. Empirically determine how heat loss rate is influenced by convective heat loss. 9. Empirically determine how heat loss rate is influenced by conductive heat loss.	9	2	0
Motor Vehicle Accidents (MVAs) and Other Causes of Death	1. List and describe the major CoDs associated with MVAs. 2. Explain the mechanisms involved and the effect on life supporting systems. 3. List the three collisions in a MVA. 4. Describe what determines the severity of damage to pedestrians in a MVA. 5. Describe other causes of death as discussed.	3	2	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	30	0