

Forensic Science : Course Syllabus

Forensic Science : Secrets of the Dead

COURSE DESCRIPTION:

Fingerprints. Blood spatter. DNA analysis. The world of law enforcement is increasingly making use of the techniques and knowledge from the sciences to better understand the crimes that are committed and to catch those individuals responsible for the crimes. Forensic science applies scientific knowledge to the criminal justice system. This course focuses on some of the techniques and practices used by forensic scientists during a crime scene investigation (CSI). Starting with how clues and data are recorded and preserved, the student will follow evidence trails until the CSI goes to trial, examining how various elements of the crime scene are analyzed and processed.

Unit 1: Introduction to Forensic Science

Objectives:

Upon completion of this unit, you will be able to:

- * **Learn about forensic science as a field of study.**
- * **Discuss the history and development of the field of forensic science.**
- * **Examine some of the responsibilities that forensic scientists have in their work.**
- * **Investigate the relationship between forensic science and the criminal justice system.**
- * **Explore some of the specialty areas within forensic science.**

ASSIGNMENTS:

Introduction to Forensic Science: Unit Text Questions	<i>Homework</i>	10 points
Introduction to Forensic Science: Online Forensic Science Lab Questions	<i>Homework</i>	10 points
Unit 1 Discussion Assignment 1	<i>Discussion</i>	5 points
Unit 1 Discussion Assignment 2	<i>Discussion</i>	5 points
Unit 1 Quiz – Introduction to Forensic Science	<i>Quiz</i>	15 points

Unit 2: The Crime Scene

Objectives:

Upon completion of this unit, you will be able to:

- * Discover how a crime scene is secured.
- * Examine the different ways in which a crime scene is recorded.
- * Learn how forensic scientists and officers search a crime scene for evidence.
- * Investigate how evidence is collected and packaged.
- * Learn why evidence needs to be collected carefully and within legal guidelines.

ASSIGNMENTS:

The Crime Scene: Unit Text Questions	<i>Homework</i>	10 points
The Crime Scene: Online Forensic Science Lab Questions	<i>Homework</i>	10 points

Unit 2 Discussion Assignment 1	<i>Discussion</i>	5 points
Unit 2 Discussion Assignment 2	<i>Discussion</i>	5 points
Unit 2 Quiz – The Crime Scene	<i>Quiz</i>	15 points

Unit 3: Physical Evidence

Objectives:

Upon completion of this unit, you will be able to:

- * **Learn about the different types of evidence.**
- * **Examine the difference between individual and class characteristics and what they mean for crime investigations.**
- * **Discuss how physical and chemical properties help forensic scientists compare samples.**
- * **Investigate glass fragments and soil as physical evidence and what they can tell forensic scientists about a crime.**
- * **Discuss how impressions, like footprints and tire tracks, are collected and analyzed.**

ASSIGNMENTS:

Physical Evidence: Unit Text Questions	<i>Homework</i>	10 points
Physical Evidence: Online Forensic Science Lab Questions	<i>Homework</i>	10 points
Unit 3 Discussion Assignment 1	<i>Discussion</i>	5 points

Unit 3 Discussion Assignment 2	<i>Discussion</i>	5 points
Unit 3 Quiz – Physical Evidence	<i>Quiz</i>	15 points

Unit 4: Physical Evidence: Hair, Blood, and Fingerprints

Objectives:

Upon completion of this unit, you will be able to:

- * Learn about the physical structures of hair, blood, and fingerprints.
- * Discuss how DNA can be found in hair collected from crime scenes.
- * Investigate how stains are tested to determine if they are blood and if they are human blood.
- * Learn about the different types of fingerprints.
- * Examine how fingerprints are discovered and collected at a crime scene.

ASSIGNMENTS:

Physical Evidence: Hair, Blood, and Fingerprints: Unit Text Questions	<i>Homework</i>	10 points
Physical Evidence: Hair, Blood, and Fingerprints: Online Forensic Science Lab Questions	<i>Homework</i>	10 points
Unit 4 Discussion Assignment 1	<i>Discussion</i>	5 points
Unit 4 Discussion Assignment 2	<i>Discussion</i>	5 points

Unit 4 Quiz – Physical Evidence: Hair, Blood, and Fingerprints

Quiz

15 points

Forensic Science Midterm Exam

Objectives:

Upon completion of this unit, you will be able to:

- * Review information acquired and mastered from this course up to this point.
- * Take a course exam based on material from the first four units in this course (Note: You will be able to open this exam only one time.)

ASSIGNMENT:

Forensic Science Midterm Exam	<i>Exam</i>	50 points
Midterm Discussion Assignment	<i>Discussion</i>	5 points

Unit 5: Firearms and Tool Marks

Objectives:

Upon completion of this unit, you will be able to:

- * Discuss how firearm and bullet evidence is collected from a crime scene.
- * Learn why bullets fired from a gun can contain unique markings and striations.
- * Examine how investigators can estimate the distance between a gun and a shooting victim.
- * Investigate what information forensic scientists can learn from tool marks.
- * Discuss how forensic scientists can recover serial numbers from firearms and vehicles.

ASSIGNMENTS:

Firearms and Tool Marks: Unit Text Questions	<i>Homework</i>	10 points
Firearms and Tool Marks: Online Forensic Science Lab Questions	<i>Homework</i>	10 points
Unit 5 Discussion Assignment 1	<i>Discussion</i>	5 points
Unit 5 Discussion Assignment 2	<i>Discussion</i>	5 points
Unit 5 Quiz – Firearms and Tool Marks	<i>Quiz</i>	15 points

Unit 6: Human Remains

Objectives:

Upon completion of this unit, you will be able to:

- * Investigate some of the ways that can help determine the time of death.
- * Learn about some different ways that bodies may decompose.
- * Discuss what forensic scientists can learn from a forensic autopsy.
- * Examine what information can be gained from skeletal remains.
- * Learn about ongoing research into decomposition rates.

ASSIGNMENTS:

Human Remains: Unit Text Questions	<i>Homework</i>	10 points
Human Remains: Online Forensic	<i>Homework</i>	10 points

Science Lab Questions		
Unit 6 Discussion Assignment 1	<i>Discussion</i>	5 points
Unit 6 Discussion Assignment 2	<i>Discussion</i>	5 points
Unit 6 Quiz – Human Remains	<i>Quiz</i>	15 points

Unit 7: DNA Evidence

Objectives:

Upon completion of this unit, you will be able to:

- * **Learn about the properties of DNA.**
- * **Examine how and why DNA can be used as an individual characteristic in forensic science.**
- * **Investigate how biological evidence is best collected and preserved for DNA testing.**
- * **Discuss what tests are used on biological evidence to retrieve DNA information.**
- * **Examine some of the considerations in using DNA in court trials.**

ASSIGNMENTS:

DNA Evidence: Unit Text Questions	<i>Homework</i>	10 points
DNA Evidence: Online Forensic Science Lab Questions	<i>Homework</i>	10 points
Unit 7 Discussion Assignment 1	<i>Discussion</i>	5 points

Unit 7 Discussion Assignment 2	<i>Discussion</i>	5 points
Unit 7 Quiz – DNA Evidence	<i>Quiz</i>	15 points

Unit 8: Arson and Explosion Evidence

Objectives:

Upon completion of this unit, you will be able to:

- * **Discuss what challenges arson and explosion crime scenes present in the collection, preservation, and analysis of evidence.**
- * **Learn how investigators determine where a fire started and whether accelerants were used.**
- * **Examine the different types of explosive materials that may be used in bombs and other explosions.**
- * **Investigate how evidence at an arson scene is collected and tested.**
- * **Discuss the methods used to test for explosive materials at crime scenes.**

ASSIGNMENTS:

Arson and Explosion Evidence: Unit Text Questions	<i>Homework</i>	10 points
Arson and Explosion Evidence: Online Forensic Science Lab Questions	<i>Homework</i>	10 points
Unit 8 Discussion Assignment 1	<i>Discussion</i>	5 points
Unit 8 Discussion Assignment 2	<i>Discussion</i>	5 points

Unit 8 Quiz – Arson and Explosion Evidence

Quiz

15 points

Forensic Science Final Exam

Objectives:

Upon completion of this unit, you will be able to:

- * **Review information acquired and mastered from this course up to this point.**
- * **Take a course exam based on material from units five to eight in this course – the last four units. (Note: You will be able to open this exam only one time.)**

ASSIGNMENT:

Forensic Science Final Exam

Exam

50 points

Class Reflection Discussion Assignment

Discussion

10 points