

**SUL ROSS STATE UNIVESRITY-RIO GRANDE COLLEGE  
DEL RIO \* EAGLE PASS \* UVALDE  
DEPARTMENT OF NATURAL & BEHAVIORAL SCIENCES  
CRIMINAL JUSTICE PROGAM  
COURSE SYLLABUS**

- COURSE TITLE:** CRIM 3310 Crime Scene Investigation
- COURSE PERIOD:** Online Web Course
- INSTRUCTOR:** Dr. Ferris Roger Byxbe [fbyxbe@sulross.edu](mailto:fbyxbe@sulross.edu)
- BIOGRAPHY:** <http://faculty.sulross.edu/fbyxbe>
- OFFICE:** Faculty Office Building 205, Del Rio Campus
- OFFICE PHONE:** 830-703-4834 Office, 830-703-4831 Fax
- OFFICE HOURS:** Tuesday & Thursday 2:00 – 4:00 PM.
- COURSE DESCRIPTION:** An overview of the crime solving process with an emphasis on methodology, technology, and evidence; a comprehensive course on investigative techniques and the application of forensic science.
- TEXTBOOK:** Crime Scene Investigation, 3<sup>rd</sup> ed. (2014)  
J. Fish, L. Miller, M. Braswell and E. Wallace Jr.  
Anderson Publishing Co.  
ISBN: 978-1-4557-7540-8
- ACADEMIC SUCCESS:** Students enrolling in online Web Courses at Rio Grande College must be aware that such courses are not self-paced and require considerable vested time in order to meet course requirements. Students should be prepared to devote a considerable amount of time to accomplish the requisites in this course, i.e., each semester will require a student to devote approximately 12 hours per week to each web class – which equates to 3 hours of class time plus 9 hours of reading, research, writing and other course preparation.
- COMPUTER LABS:** Rio Grande College computer labs are open Monday – Thursday 8:00AM - 9:00PM and Friday 8:00AM – 5:00PM. **RGC Computer labs are not open weekends.** However, students may avail themselves to the SWTJC computer labs with a valid ID. Online web students should have available a high-speed internet connection on a regular basis for off-campus course work, exams, assignments and research.

**DISHONESTY:**

Academic cheating and plagiarism is not acceptable behavior. It violates university policy and human ethics. If a violation occurs the penalty will result in the grade of “F” for the semester.

**EXAMINATIONS:**

Exams have been structured to mandate maximum participation in this self-directed online course of study.

- There will be a chapter(s) exam each week.
- Chapter reading assignments are of the utmost importance for student learning outcomes and assessment.
- Exams will consist of multi-formatted questions taken from weekly reading assignments.
- It is recommended that all exams be taken in the computer laboratory on the Rio Grande College campus. However, this is not required. Exams may be taken at any location using a high-speed internet connection. Firefox browser is recommended for accessing all Blackboard exams.
- **Weekly exams will be made available for 24 hours each Thursday. 12:00 AM – 11:59 PM.**
- Students may access exams one-time only. Students are allowed 75 minutes for each exam. Students exceeding the testing period will be timed-out.

**NO MAKE-UP EXAMS:**

If a student **for any reason:**

- fails to take an exam
  - fails to complete an exam
  - fails to submit an exam
- will result in an “F” for the exam.

*The professor assumes no responsibility for student omissions or technology problems. No exams will be reset for any reason. There will be no make-up exams for any reason.*

**GRADING SCALE:**

450 - 500 = A  
400 - 449 = B  
350 - 399 = C  
300 - 349 = D  
0 - 299 = F

NOTE: Each exam is worth 100 points x 5 exams = 500 total points.

**SEMESTER GRADES:**

Final semester grades are reported to the Office of Admissions & Records at the conclusion of each semester and grades are posted on Banner for student review.

**COURSE OBJECTIVES:** Upon reading assigned chapters in the textbook with a thorough analysis of the key concepts, terms, scientific principles and investigative procedures within each chapter the student will acquire extensive knowledge of the following subject-matter materials to be inclusive on each examination.

**Chapter 1: Introduction: The CSI and Forensic Investigation**

1. Describe the major goals of the crime scene search.
2. Define physical evidence.
3. Describe how physical evidence is located, handled, and stored.
4. Discuss the major factors that determine the value of physical evidence.
5. Describe what is meant by a “forensic scientist.”
6. Define what an “expert witness” is and what purpose they serve.
7. Understand the ethical considerations that a CSI must consider while conducting an investigation.
8. Appreciate the “linkage” between location, suspect, and victim during a crime scene search.
9. Define “class” and “individual” characteristics of physical evidence.
10. Explain the legal considerations the CSI must follow and the reasons for those considerations.
11. Understand what “chain of custody” is and its importance.
12. Describe the ultimate goal of the CSI.

**(\*) Chapter 2: First Response and Scene Searches**

1. Describe how to identify the scope of the crime scene.
2. Describe how a first responder would search a crime scene.
3. Explain what other officials may be on scene first and what their responsibilities are.
4. Describe the importance of proper jurisdiction over the crime scene.
5. Describe the safety concerns that need to be addressed at a crime scene.
6. Discuss the personal protection equipment (PPE) that may be required at the crime scene
7. Describe the specific factors that need to be considered when handling bloodborne pathogens.
8. Describe the initial walkthrough of the crime scene and what documentation should be collected.

**Chapter 3: Documenting the Crime Scene: Photography, Videography, and Sketches**

1. Describe the main objective of a crime scene investigation.
2. List the tools that are required to document the crime scene properly.
3. Describe what transient evidence is and why it is different than other types of evidence.
4. Describe the process of taking photographs: Where do you start? What do you take photos of? Why do you take photos?
5. What is meant by “painting with light”?
6. Explain how to determine what film type and speed to use.
7. List the three types of cameras and what their differences are.
8. Describe what a sketch of a crime scene is and why it is important.
9. Know what the types of sketches are and the differences between them.

10. List the four methods for taking measurements and locating evidence at a crime scene.
11. Explain the circumstances under which each measurement method would be used.
12. Understand the legality of searching a crime scene, especially when it is located on private property.
13. Describe the four exceptions that allow for a search of a crime scene without prior permission.
14. List the proper order for collection and preservation of evidence.
15. Explain basically how a search should be conducted
16. List and explain the six types of search patterns and when each would be used.
17. Describe the unique problems associated with searching a vehicle, and list the most likely areas in which to find latent fingerprints.

#### **Chapter 4: Fingerprinting and Palmprints**

1. Describe what a fingerprint or palmprint is.
2. List the different classes of fingerprints, and describe each.
3. Explain what comprises the residue of fingerprints or palmprints.
4. List and describe the four types of fingerprints
5. Explain the procedure for obtaining inked fingerprints/palmprints.
6. What is meant by elimination prints?
7. Understand the unique process for obtaining fingerprints from the deceased.
8. Explain when fingerprints are formed and the differences between the fingerprints of a child and those of an adult.
9. Describe what a latent fingerprint is.
10. Understand what will normally constitute a legal print in a court of law.
11. Describe the ways to locate latent prints.
12. Describe the ways to lift and document latent prints.
13. Describe the advantages and shortcoming of each lifting process.
14. Understand the AFIS.

#### **Chapter 5: Trace and Impression Evidence**

1. Explain Locard's Theory of Transfer.
2. Describe what trace evidence is.
3. Explain why the crime scene investigator should collect comparison samples.
4. Explain where hairs may come from, what they may reveal, and how they are collected.
5. Explain where fibers may come from, what they may reveal, and how they are collected.
6. Describe how glass fragments can help in an investigation and what cracks in window glass may reveal.
7. Describe what the soil at a crime may reveal.
8. Describe what gunshot residue may reveal to an investigator.
9. Explain how residue may be left on an offender, victim, or witness and how the investigator can obtain the trace evidence.
10. Understand what impression evidence is, how it is located, and how to preserve the evidence.
11. Explain the difference between bitemarks made on a living person compared to bitemarks made on a dead person.
12. List the four findings that can be related to the examination of bitemarks by a forensic

- odontologist.
13. Explain the technique used to locate footwear or other impressions at indoor crime scenes.
  14. Explain the technique used to obtain an impression of footwear.
  15. Explain the technique used to obtain an impression in the snow.

### **Chapter 6: Body Fluid Evidence**

1. Define forensic niology.
2. List the many serums of serology.
3. Understand what toxicology is and what its purpose is.
4. Understand what DNA is and what purpose it serves.
5. Describe what the CODIS system is and who maintains it.
6. Describe what presumptive blood tests are used for.
7. Understand the make-up of seminal fluid, the substance found only in semen, and the proof positive test performed for the detection of PSA.
8. Describe the procedure the crime scene investigator uses to located, collect, and preserve body fluid evidence.
9. Explain what a physical evidence recovery kit is.
10. Describe how clothing should be handled when potential evidence may be obtained.
11. Understand the use of luminol and fluorescein and what items can cause false positive readings.

### **(\*) Chapter 7: Blood Spatter Evidence**

1. Understand what a bloodstain pattern analyst (BPA) is.
2. Describe what surface tension is and how it relates to a drop of blood.
3. Explain the different blood spatter patterns on nonporous surfaces and rough surfaces.
4. List different conclusions a CSI can obtain from an analysis of blood spatter, and briefly explain each.
5. List the different types of impact spatter, and briefly explain each.
6. Name the unique types of blood spatter associated with gunshot wounds, and briefly describe each.
7. List and explain the four categories of bloodstains.
8. Explain what circumstances contribute to the “drying time” for blood.
9. Describe what specific information a BPA can provide the CSI, given adequate documentation.
10. Describe how a bloodstain is investigated. What measurements are required?
11. Explain the proper techniques for photographing bloodstains at a crime scene.

### **Chapter 8: Firearms and Toolmark Evidence**

1. Understand the difference between a handgun and long gun.
2. Describe the difference between firearms identification and ballistics.
3. List and explain what a firearms examiner can potentially provide to the CSI.
4. Describe what components all cartridge ammunition will include.
5. Describe how a bullet is fired.
6. Understand several types of bullets used today.
7. Explain why the marks (striations) on fired bullets are called “fingerprints.”

8. Describe the class characteristics of bullets.
9. Describe the class characteristics of a discharged cartridge.
10. What are the three conclusions a firearms examiner can render concerning a suspect weapon and recovered bullets
11. Understand how to locate, collect, package, and account for firearms, bullets, and cartridges.
12. Describe what a sodium rhodizonate test is used for.
13. Briefly describe the basic effects that occur when a cylindrical object (bullet) impacts a surface.
14. Understand what concentric and radial glass fractures are, how to identify them, and what they reveal.
15. Understand how ballistic trajectory is determined and the use of a laser protractor kit and laser trajectory kit.
16. Explain basically how the firing distance is established.
17. Describe what the absence of gun powder residue may reveal.
18. Describe what purpose is served by the NIBIN.
19. Explain what GSR is and what it may reveal to the CSI.
20. List and describe the three types of tool marks.

### **(\*) Chapter 9: Arson and Explosives**

1. Define arson.
2. Describe the unusual circumstances a CSI faces when responding to a potential arson fire in progress.
3. Understand how an arson or explosive crime scene is processed.
4. Explain how the area of origin of the fire is located.
5. Describe what the fire triangle is.
6. Describe how fire normally spreads.
7. Describe what the modes of heat transfer are.
8. Describe the three primary reasons for investigating fire scenes.
9. Describe what the CSI should focus on if arson is suspected to be covering up a prior crime.
10. According to the FBI, describe what the motives are for purposely setting fires.
11. Define serial fires.
12. Describe the four possible classifications of the cause of a fire.
13. Understand the resistance of the human body to be totally reduced to ashes.
14. Explain how a human body can be identified when consumed in a fire.
15. Understand what a pugilistic stance is and what causes it in the circumstances of a fire
16. Describe the explosives incident system and who maintains it.
17. Describe what an explosion is.
18. List the three types of explosions and the two broad categories of explosions.
19. Explain what events occur when there is an explosion.
20. Describe how the area of origin of an explosion is located.
21. Briefly explain how residue samples should be collected from an explosion site.

### **Chapter 10: The Electronic Crime Scene**

1. Describe what digital evidence is and why it is sometimes called an electronic fingerprint.
2. Understand what ISPs are and how they can assist the CSI.
3. Describe some types of digital crime.
4. Describe sources of digital evidence in addition to IP addresses.
5. Describe what is meant by identity theft and what it includes.
6. Define spyware and explain how it works.
7. Describe the PROTECT Act of 2003 and the provisions it contains.
8. Describe what is meant by cyberstalking.
9. Understand what is meant by cybertailing.
10. List the common motives of a hacker.
11. Describe what is meant by phishing.
12. Describe what a CSI should consider when processing an electronic crime scene.
13. Describe what is meant by crime scene staging.

### **(\*) Chapter 11: Documentary Evidence**

1. Describe the many types of questioned documents.
2. Understand how evidential paper documents should be handled and the preferred way to maintain chain of custody.
3. Describe the procedures for handling burned or charred documents.
4. Understand procedures for examining documents as set by the ASTM.
5. Describe destructive and nondestructive techniques of examining documents.
6. Describe the procedures used by handwriting identification experts.
7. Understand the constitutional issues when requiring handwriting exemplars.
8. Describe what is meant by simulated and imitation handwriting.
9. Describe how the ASTM identifies handwriting elements.
10. Describe specific analyses for signatures.
11. List the nine-item scale for expressing conclusions by the ASTM.
12. Describe how handwriting is used for criminal profiling.
13. Describe how handwriting is used for physical profiling.

### **Chapter 12: Motor Vehicles as Crime Scenes**

1. Describe the type of documentation that is imperative when first arriving a crime scene involving a vehicle mishap.
2. Describe the unique photographs that need to be taken involving vehicles.
3. Describe what information can be obtained from skid marks and broken light filaments.
4. Describe the potential evidence when investigating a hit-and-run incident.
5. Explain the most common type of physical evidence associated with hit-and-run incidents.
6. Describe the types of glass that may be found at a hit-and-run incident and how pieces can be helpful during the investigation.
7. Describe the collection techniques that should be used for a hit-and-run investigation.
8. Describe what a chop shop is and what it does.
9. Describe what a VIN is and where it can be found. What information can VINs reveal to the CSI?
10. Explain what product identification numbers and hull identification numbers are.
11. Understand how to process the external surfaces of a vehicle.

12. Understand how to process the internal surfaces of a vehicle.
13. Describe how weather may hinder a vehicle investigation and what can be done to minimize that hindrance.
14. Define “30-day special.”
15. Legally, what is the most important issue a CSI must confirm?
16. Explain why using a trained canine dog is preferable if available.
17. Describe how a search of the vehicle should be undertaken.
18. Describe how the CSI should document injuries to the occupant(s).

### **Chapter 13: Death Investigation**

1. Understand the differences between a coroner, medical examiner, and pathologist and know where to find what system a certain state uses.
2. Describe what an autopsy is, who performs it, and why it is performed.
3. Describe the definition of death in a medical sense.
4. Describe the definition of death in a legal sense.
5. Describe the five categories for classification of the manner of death.
6. Describe the changes a deceased body goes through.
7. Understand how the medical examiner determines a time of death.
8. Describe the mummification of a body.
9. Describe what adipocere is and why it forms.
10. Describe what a pugilistic position is and how it occurs.
11. Describe what an epithelial glove is.
12. Describe what odors a deceased body might have, including when poisoned.
13. Describe what the CSI should document for a death investigation.
14. Describe the different categories of asphyxiation.
15. Describe what causes environmental suffocation.
16. Describe what is meant by overlay
17. Understand how carbon dioxide and cyanide cause death.
18. Understand the differences between cut and stab wounds.
19. Describe what is meant by blunt force, contusion, abrasion, and laceration.
20. Describe the indicators the CSI should document at the scene of a sexual homicide.

### **Chapter 14: Forensic Anthropology, Odontology, and Entomology**

1. Define forensic anthropology.
2. Describe the three areas of forensic anthropology.
3. Describe the two categories of aging.
4. Describe the three best areas from which to estimate age at death.
5. Describe how the sex of a skeleton is determined.
6. Describe how race is determined from the skeleton.
7. Describe how stature is determined from the skeleton.
8. Define odontology. Explain why teeth are one of the best areas of the human skeleton to determine a positive identification.
9. Define entomology. Describe how it is used to assist in determining a time of death

### **(\*) Chapter 15: Documenting the Actions of the CSI**

1. Understand the importance of proper written documentation.



2. Understand the importance of proper photographs.
3. Describe what the CSI's case file contains.
4. Describe the primary responsibility of the CSI.
5. Describe how the narrative portion of the case file should be written.
- 6. Understand who the ultimate audience is for the CSI's report.**
7. Describe what SOPs are and why they should be used by the CSI.
8. Know what is meant by rules of evidence and how they affect the CSI.
9. Understand the significance of the court case Daubert v. Merrell Dow Pharmaceuticals Inc.
10. Know the responsibilities of the CSI, the prosecutor, and the jury or judge.
11. Explain how the CSI should deliver his or her presentation of a case.
12. Explain some of the pitfalls that CSIs may encounter when testifying.

(\* ) **Chapters not assigned summer session II.**

**PROGRAM LEARNING OUTCOMES (PLO):** The graduating student will

- 1) Demonstrate proficiency in the application of legal concepts, theoretical applications, scientific principles, and historical trends in the criminal justice arena.
- 2) Demonstrate the application of organizational principles, cultural, social and behavioral knowledge, critical thinking skills and cognitive thought processes within the criminal justice arena.

### **SEMESTER CALENDAR, READING ASSIGNMENT AND EXAM DATES**

**WEEK ONE:**

(July 7 - 13)

Chapter 1: Introduction: The CSI and Forensic Investigation  
 Chapter 3: Documenting the Crime Scene: photography. Videography and Sketching  
**Exam #1: Thursday, July 14<sup>th</sup>**

**WEEK TWO:**

(July 14 – 20)

Chapter 4: Fingerprints and Palmprints  
 Chapter 5: Trace and impression Evidence  
**Exam #2: Thursday, July 21<sup>st</sup>**

**WEEK THREE:**

(July 21 – 27)

Chapter 6: Bodily Fluid Evidence  
 Chapter 7: Blood Spatter Evidence  
**Exam #3: Thursday, July 28<sup>th</sup>**

**WEEK FOUR:**

(July 28 – Aug. 3)

Chapter 8: Firearms and Toolmark Evidence  
 Chapter 10: The Electronic Crime Scene  
**Exam #4: Thursday, August 4<sup>th</sup>**

**WEEK FIVE:**

(Aug. 4 – 10)

Chapter 13: Death Investigation  
 Chapter 14: Forensic Anthropology, Odontology. And Entomology  
**Exam #5: Thursday, August 11<sup>th</sup>**

