

**University of Northern Colorado  
College of Humanities and Social Sciences  
Office of Extended Studies  
Summer, 2010**

**CRJ 408-615: Bloodstain Pattern Analysis at Violent Crime Scenes (3 cr)**

**Course advisor:** Alan Price, MA, SCSA

Adjunct Faculty, University of Northern Colorado

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Invited Guest Lecturers:

- (1) Sgt. Rudy Flores, Texas Ranger, Company F, Palestine, Texas, Court recognized expert in Bloodstain Pattern Analysis.
- (2) Sgt. Jim Huggins, BA, MFS, Texas Ranger, Company F, Palestine, Texas, Court recognized expert in Bloodstain Pattern Analysis.
- (3) Honorable Marcelo Kopcow, Division 11, 19<sup>th</sup> Judicial District Court Judge

**Class Building & Room:** Michener Library

**Dates and Times:** May 10-15, 2010; 8-5 daily

**Required Texts:** A workshop book and study reference guide will be provided to each student for this course at no additional cost.

**Course Description:**

This intense one week course will provide the participants knowledge in the recognition of different bloodstain pattern evidence. This will include actual laboratory experimentation of blood flight characteristics of motion and force. These experiments will be augmented with lecture material and case presentations for the purpose of crime scene reconstruction of the sequence of events, location of events and post-crime activities. This course is a combination of lecture and hands-on activities which will allow the participants to work individually and in small groups as they acquire the necessary knowledge and skills required of a bloodstain pattern analyst. The bloodstain evidence that will be analyzed will include that which is present at the crime scene, in a vehicle, on victims and/or subjects clothing, or on discarded evidence such as knives, firearms and other weapons

**The blood used in this course is bovine blood so as not to expose attendees to any biohazards.**

**It is suggested that each student have a calculator that has basic trigonometry functions. Attendees are welcome to bring cameras to document their work, however, this is not a requirement.**

**Course Objectives:**

1. Participants will acquire a working knowledge of current bloodstain pattern terminology.
2. Participants will have a clear understanding of how blood reacts to motion and force.
3. Participants will know how to use proper bloodstain pattern documentation techniques to include sketching, written documentation and photography.
4. Participants will be able to identify specific bloodstain pattern evidence at crime scenes, in vehicles, on victims/suspects, and on clothing and weapons.
5. Participants will acquire the ability to correctly detect, enhance, and preserve serological blood evidence for DNA analysis.
6. Participants will be able to use the acquired knowledge and skills in order to correctly interpret bloodstain pattern evidence for the purpose of crime scene reconstruction.
7. Participants will acquire the basic knowledge to enable them to be prepared for courtroom presentation of the bloodstain evidence that was collected or documented.

**Outline of Course Content:**

Historical overview of bloodstain pattern identification  
Recommended equipment and supplies for bloodstain kits  
Biohazard and safety lecture personal protection matrix  
Value of bloodstain analysis at violent crime scenes  
Preservation of bloodstain evidence with:  
    Photography  
    Video  
    Notes  
    Sketching  
    Collection and preservation  
Laboratory experiments:  
    Diameter of stain vs. distance fallen  
    Diameter of stain vs. volume of droplets  
    Diameter Stain appearance as a function of the target surface  
    Effect of impact angle on stain shape  
    Effect of horizontal motion on stain shape  
    Effect of stain diameter on drying time  
    Splashed bloodstain dispersion  
    Dripped bloodstain dispersion  
    Cast off bloodstain dispersion  
    Projected bloodstain dispersion  
    Gunshot blood spatter patterns  
    Course and fine spatter patterns  
    Contact pattern recognition  
    Courtroom testimony preparation  
    Crime scene scenario documentation

**Class Presentations:**

Students will be expected to submit the written results of their group assignments throughout the week. Upon the completion of the course each individual student is expected to submit a crime scene report of their interpretation and analysis of their crime scene and a chain of custody sheet of their evidence. Each student is also required to submit a crime scene sketch that accurately supplements the pattern analysis they have interpreted. Each student will also be expected to participate in a moot court presentation to establish a legal foundation for the introduction of their crime scene sketches and bloodstain pattern analysis into a court of law.

**Extra Credit:**

No extra credit is structured into this class.

**Examinations:**

Both a mid-term and final examination will be administered in compliance with University standards. **The Mid-term examine will be on Wednesday, May 12th and the Final Examination will be on Saturday, May 15th. Both examinations will only be administered on their respective dates.** Both the mid-term and final exams will be comprehensive of all topics presented in this course. Both the mid-term exam and the final exam will be written and also include a skills recognition section to demonstrate the attendees knowledge of various blood patterns.

**Quizzes:**

A daily quiz will be administered on Monday, Tuesday, Thursday and Friday of this course. Quizzes are generally fifteen points in value.

**Participation and attendance:**

Students **cannot** afford to miss any portion of this class in order to maintain a passing grade.

**Quizzes = 15-20 points each**  
**Midterm Exam = 50 points**  
**Final Exam = 100 points**  
**Written group summary & crime scene sketch = 25 points**

**Method of Evaluation**

This course is letter graded and will follow the grade level breakdown approved by the CJR Faculty.

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<b>Grade</b>	<b>% of Total Points</b>
A	93 – 100%
A -	90 - 92%
B+	88 – 89%
B	83 - 87%
B-	80 – 82%
C+	78 - 79%
C	70 – 77%
D	60 – 69%
F	0 – 59%

**Percentages are based on the total accumulated points from the mid-term, final, any quizzes, the submitted paper and individual presentations.**

**Course Day Schedule:**

**DAY 1: Monday, May 10**

Welcome and Introductions of Staff and Students  
Biohazard and safety lecture personal protection matrix  
Value of Bloodstain analysis at violent crime scenes  
Historical overview of Bloodstain Pattern Identification  
Equipment and supplies for the bloodstain kit

**Pre-Test**

Preservation of Bloodstain Evidence:

- Photography
- Video
- Notes
- Sketching
- Collection and Preservation

Bloodstain pattern terminology with slide presentation examples

**LUNCH**

Laboratory experiment #1: Diameter of Stain vs. Distance Fallen  
Laboratory experiment #2: Diameter of Stain vs. Volume of Drop  
Laboratory experiment #3: Stain Appearance as a Function of The Target Surface Differences  
Group discussion of summary of section one and review

**Credit quiz**

Case Scenarios

**DAY 2 Tuesday, May 11**

Laboratory experiment #4: Effect of Impact Angle on Stain Shape  
Laboratory experiment #5: Effect of Horizontal Motion on Stain Shape  
Group discussion of summary of section two and review

Laboratory experiment #6: Effect of Stain Diameter on Drying Time  
Group discussion of summary of section three and review

**LUNCH**

Laboratory experiment #7: Splashed Bloodstain Dispersion  
Laboratory experiment #7A: Dripped Bloodstain Dispersion  
Laboratory experiment #8: Cast Off Bloodstain Dispersion  
Laboratory experiment #9: Projected Bloodstain Dispersion  
Group discussion of summary of section four and review

**Credit quiz**

Case Scenarios

**DAY 3            Wednesday, May 12**

Laboratory experiment #14: Gunshot Blood Spatter Patterns  
Lecture on interpretation of bloodstain patterns on clothing and moveable objects  
Lecture on documentation of bloodstain patterns on clothing and evidence in a laboratory to include measuring, sketching, and photography  
Documentation of bloodstain patterns (mock crime scenes) and correlation with the scene and autopsy findings for scene analysis

**LUNCH**

Chemical applications for detection, enhancement and proper collection techniques  
Group discussion and review  
Laboratory experiment #10: Course and Fine Spatter Patterns  
Laboratory experiment #11: Contact Pattern Recognition  
Group discussion of summary of section five and review

**Mid-term examination**

**DAY 4            Thursday, May 13**

Processing of crime scenes for bloodstain patterns, documentation, reconstruction and analysis

**LUNCH**

**Credit Quiz**

Case Scenarios

**DAY 5            Friday, May 14**

Lecture on report writing  
Preparation and presentation of mock scene reports  
Case presentations  
Group discussion

**LUNCH**

Lecture on expert witness testimony

**Mock Court in Weld County District Court**

**Credit quiz**

**Day 6            Saturday, May 15**

Final exam and submission of crime scene sketches and laboratory exercises  
Awarding of Certificates of Completion

**Disability Statement**

Any student requesting disability accommodation for this class must inform the instructor by giving appropriate notice. Students are encouraged to contact Disability Support Services at (970) 351-2289 to certify documentation of disability and to ensure appropriate accommodations are implemented in a timely manner.

**Honor Code**

*All members of the University of Northern Colorado community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility.*

*These core elements foster an atmosphere, inside and outside of the classroom, which serves as a foundation and guides the UNC community's academic, professional, and personal growth. Endorsement of these core elements by students, faculty, staff, administration, and trustees strengthens the integrity and value of our academic climate.*

### **UNC's Policies**

*UNC's policies and recommendations for academic misconduct will be followed. For additional information, please see the Dean of Student's website, Student Handbook link <http://www.unco.edu/dos/handbookindex.html>*

### **Student Satisfaction Evaluation**

Participants will be asked to evaluate the workshop for instructors' knowledge, interest and enthusiasm as well as providing additional information on classes or topics which you would like to see developed as a future offering from UNC.

### **Portable Electronic Devices**

Please extend courtesy to your instructor and fellow students by turning off your portable electronic devices such as: cell phones, pagers, and iPods. Although not an audio issue, text-messaging is a distraction to other students and prevents you from full participation in class. You should keep your portable electronic devices in your backpack or purse during class. Your personal electronic devices should not be on your desks. If you know that you may need to accept an emergency phone call during class or if you have children in childcare or school, please let the instructor know. If you need to take a phone call during class, please step out of the classroom while you complete your call. Thank you for your cooperation.

### **Course Withdrawal Information**

Due to the unique nature of this course, if you drop from this class on or after May 7, 2010, you will be legally responsible for payment of full tuition. In order to be eligible to receive any refund of tuition, you must contact the Office of Extended Studies at 1-800-232-1749 to formally withdraw from your class. Your refund, if applicable, will be based on the date of contact with our office. Withdrawals received via telephone during non-business hours will be processed and dated on the next working day. Failure to notify us will result in UNC tuition being owed even though student did not attend or complete the coursework.