

## HONR 205 AND 215: N/ SCIENCE SEMINAR FORENSIC GEOLOGY

Dr. Dori Farthing	Department of Geology
Class: MF 2:30-3:45	Classroom: ISC 19
Lab: R 2:30-4:20	Lab Room: ISC 19
Office Hours: F 9-12	Office: ISC 250

### Course Summary:

Students enrolled in this course will attempt to emulate the great Sherlock Holmes by honing their skills as astute observers and thoughtful interpreters of their observations. Students will investigate the rolls that geological evidence plays in the solving of crime. Throughout the semester we will delve into the nature of geological material including how to identify and describe them and their geographical distribution. As part of the exploration into Earth materials, this course will introduce you to and give you hands-on experience with analytical tools that are essential to materials characterization.

### Student Learning Outcomes:

The successful student will be able to:

1. Identify and describe common Earth materials and place them in the appropriate geological setting (i.e., minerals, rocks, soils, and fossils).
2. Critically observe a crime scene in order to identify geological evidence and to determine the best way to collect it.
3. Demonstrate a clear understanding of the variety of crimes that need geological evidence to solve (e.g., forgeries, murder, archaeological mysteries, geochemical contamination, etc...).
4. Develop an analysis plan to analyze material evidence collected at a crime scene.
5. Thoughtfully interpret data and observations in order to help solve a case.

### Required Text:

EVIDENCE FROM THE EARTH: FORENSIC GEOLOGY AND CRIMINAL INVESTIGATION  
By Ray Murray, Mountain Press Publishing Company (2004)

### Means of Assessment (subject to change):

Homework, quizzes, reports, Lab notebook:	30%
Sarah Andrews Book Assignment	10%
Crime Challenge:	20%
Midterm I:	20%
Lecture Final:	20%

### Grade scale:

A	94-99	C+	78-79
A-	90-93	C	74-77
B+	88-89	C-	70-73
B	84-87	D	65-70
B-	80-83	E	<65

**Lab reports:** A specific crime will be the focus for each lab and students will prepare a lab write-up at the end of each lab that will detail the data and observations they obtained from the scene, a description of the methods used to obtain the evidence and to analyze it, and an interpretative section.

**Sarah Andrews Book assignment:** You must read one book by Sarah Andrews and then prepare a written summary that includes information on the nature of the crime, the geological materials that were involved, and the analytical tools that were involved in solving the case.

**Crime Challenge:** Teams of students will stage a crime and a crime scene and challenge their peers to solve the mystery. During the last week of classes, teams will work to solve the created crimes.

**Midterm exams, quizzes, and lecture final:** There will be one midterm exam in this course as well as a final exam. The exam will be in short answer and short essay format and will also entail hand-sample identification of Earth materials. In addition to the exam, there may be occasional “pop” quizzes covering your knowledge of Earth materials, analytical instrumentation, lab etiquette, your reading, homework, material from the day’s lecture, or from the previous class. The course final will follow the same format as the midterm and will be cumulative.