FORENSIC SCIENCE AND CRIMINAL INVESTIGATION
ENTO 896
Summer 2008 (19 May-11 July)

Instructor
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Overview

Forensic science is the use of science in the legal system. While forensic science is used in civil and criminal cases, this course will focus on criminal investigation. Forensic science comprises several disparate fields of study. As a consequence, this course will cover a wide range of topics including jurisprudence, medicine, taphonomy, criminalistics, engineering, digital forensics and behavioral science. This course aims to provide an understanding of the fundamentals of forensic science through the study of each of these fields. Each student should finish this class with an understanding of the history and definition of forensic science, legal framework in the USA, commonly applied and recently developed applications, potential forms of evidence and their analysis, and the presentation of facts and opinion in a court of law.

Required text

James SH, Nordby JJ. 2009. Forensic science: an introduction to scientific and investigative techniques. 3rd edition. CRC Press, Boca Raton, FL, USA.

In addition, readings will be posted on Blackboard as required. These will comprise journal publications and book chapters.

***Additional information can be found in*:**

Gaensslen RE, Harris HA, Lee H. 2007. Introduction to Forensic Science and Criminalistics. McGraw Hill, New York, NY, USA.

Saferstein R. 2006. Criminalistics: an introduction to forensic science. 9th edition. Pearson Prentice Hall, Upper Saddle River, NJ, USA.

Course Outline

Course content	Corresponding Book Chapter
Forensic science and the legal framework	
What is forensic science?	1
The legal framework	32, 33,34
From crime scene to court	10
Taphonomy	
Introduction to decomposition and taphonomy	4,8
Pathology	2,4
Dentistry/odontology	6
Physical anthropology and osteology	7
Entomology	9
Palynology and botany	-
Criminalistics	**12**
Forensic biology: DNA	15
Biological fluids and stains	14
Bloodstains and spatter	11,13
Toxicology & controlled substances	5,22
Fingerprints	17
Questioned documents	21
Hair, fiber, paint, glass	16
Firearms	20
Toolmarks, footmarks, tiremarks	18,19,20
Engineering	
Structural failures	23
Fire and explosions	24
Vehicular accidents	25
Digital Forensics	
Digital forensics and its investigation	26,27
Behavioral science	
Psychology	28
Psychiatry	29
Serial offenders	30
Profiling	31

Assignments

Students will be responsible for completing three exams, one introductory paper, one writing assignment, one interview assignment, and two case studies. These will be posted on Blackboard as described below. Upon completion, all assignments should be emailed to **dcarter2@unl.edu** by 5pm (USA Central Time) of the due date. *Assignments submitted after the deadline will be penalized 10% per day late*.

Exams (100 points each) will be due seven days after posting on Blackboard. Books, peer-reviewed publications and lecture notes may be used to complete exams. I strongly discourage the use of personal web-sites and Wikipedia.com as a source of information as the accuracy of their content is not regulated. Exams will cover the following areas:

Exam	Topic	Date available	Date Due
Exam 1	History, jurisprudence, taphonomy	23 May	30 May
Exam 2	Criminalistics, engineering, computer crime	6 June	13 June
Exam 3	Behavioral science	20 June	27 June

The introductory paper (50 points) is an opportunity for you to tell me what you find most interesting about forensic science. Is there a certain form of evidence that intrigues you? Do you like the investigation as a whole? This paper has a maximum length of one page, i.e. you will be graded on what is written on one side of the page and I will not read anything that flows into subsequent pages.

The case studies (100 points each) will be assigned on **30 May** and **13 June**. As with exams, you will have one week to complete each of these. This assignment acts as an opportunity for you to synthesize all you have learned over the eight week course and try your hand at writing a scene report.

One writing assignment (100 points) will be due on **7 July 2008**. Please note that this is not a Friday. This year Independence Day happens to fall on Friday and I could not bring myself to have an assignment due on our nation's birthday. Thus, it is due the following Monday. Enjoy the holiday. The writing assignment is an exercise in the clear and concise presentation of facts. This is a vital skill for every forensic scientist. The goal of the writing assignment is for you to create a quick reference card that is modeled after the ever-popular baseball card (without the rock-hard gum). Basically, you will make a "baseball card" of your favorite physical evidence. The front side will contain a visual representation of your chosen form of evidence. The back side will contain the "stats", i.e. everything a forensic scientist needs to know about the physical evidence. Size and format guidelines are posted under Course Documents so you can begin whenever you like.

The interview assignment (100 points each) is probably my favorite part of this class. You job is to set up an interview with someone that has a career in forensic science or relevant field. Obvious occupations include Crime Scene Investigator and Crime Lab Technician. However, medical examiner, criminal lawyer, police officer, fire fighter, academic scientist, and others are also acceptable. If you are in doubt as to whether your interviewee is appropriate, please contact me. While I would

qualify as an interviewee, you can not interview me. Also, two students can not interview the same person. I will give you a list of five questions that you *must* ask. In addition, I want you to ask an additional five questions of your choosing. I will grade you on the relevance of these questions to the content of the course (i.e. don't ask "What is your favorite football team?"). *I will have the assignment sheet posted under Course Documents by the first day of class, so you may conduct your interview as soon as you like.* The interview is due on **11 July 2008.**

Grading scale

Grades will be assigned based on a percentage of the total points possible. Personally, I do not like the "plus/minus" approach. Since I am in charge of this course I choose not to adhere to it. However, please note that you might experience this grading system in other classes and the fact that I choose to not use this system does not mean that any other instructor must do the same.

A	90-100
B	80-89
C	70-79
D	60-69
F	≤ 59

Office hours

All students should feel free to call or email me questions at any time. I will respond as soon as possible, but I tend to focus on email in the afternoons. If a meeting (e.g. phone, on-campus) is desired then it is best to set up an appointment via email.

Important Websites

Forensic Science website: http://forensicscience.unl.edu
Entomology Department Web Site: http://entomology.unl.edu
Blackboard: http://blackboard.unl.edu/webapps/portal/frameset.jsp

Technical Requirements

In order to take this course, you must have:

1. E-mail
2. DVD player
3. An Internet connection (Netscape 3.01 or higher and Internet Explorer 4.0 or higher)
4. Microsoft Word
5. Adobe Acrobat Reader

The technology skills you will need to succeed in this course are a basic familiarity with your DVD player, e-mail, word processing, and the ability to locate specific information on the Internet. You must also know or learn how to use Blackboard courseware. All of the technologically related plug-ins you need (i.e. for Adobe

Acrobat Reader) for class will be available under the "External Links" button on the Blackboard site.

Cheating

The University of Nebraska-Lincoln has a policy about academic dishonesty, as indicated in the Student Code of Conduct (see Graduate Bulletin). As a student at UNL, you enjoy rights and protections under the code and are obligated to conduct yourself in compliance with the code. One area where students occasionally have some confusion regards plagiarism. The key concept here is misrepresenting the work of another as one's own.

As the Student Code of Conduct indicates, academic sanctions for misconduct subject to appeal are at the discretion of the instructor, and may include giving the student a failing grade for the course. In this course the penalty for cheating will be a failing grade for the class. This is based on the rationale that cheating is fundamentally opposed the aim of forensic science, which is to bring about justice.

Plagiarism & Academic Integrity

Plagiarism will not be tolerated. Please read:
http://www.unl.edu/UFP/acadinte.htm
This web site provides UNL students with information on Academic Integrity. Pay particular attention to the section that provides students with information about citing sources. We want your work, not the work of others. Summarize, synthesize and completely rewrite the material. You should not use more than 3 words in a row from the original source!

Accommodating Student Disabilities

Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me as soon as possible, so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunity.

Course Etiquette

Be courteous to others when submitting assignments and participating in online discussions. Offensive materials will be removed from the course web site. Students will be contacted if material is inappropriate.

University Policies

University of Nebraska –Lincoln policies can be accessed through the UNL's Office of Registration and Records website: http://www.unl.edu/regrec/rrhome.htm
Students should pay particular attention to the "Academic Calendar" that can be accessed from this web site.

Copyright

All materials created for this course are copyrighted. No portion of these materials can be duplicated or distributed without the written permission of the instructors.

Where to find additional help

Distance Education Coordinator

Tom Weissling, PhD
310A Entomology Hall
Department of Entomology
Lincoln, NE 68583-0816
Phone: 402-472-8680
email: ent-distance@unl.edu

Various student resources are available for any issues you experience with Blackboard courseware and any other technical problems that might arise during the course of the semester. You can find a list of helpful resources under "Online Help Resources" on the "My UNL" Blackboard page.

Library Services

UNL distance students have access to a tremendous resource: Library Services. If you are using Blackboard, there is a tab at the top of the page, "UNL Library"-just click and you are there. This web site can also be accessed directly at:
http://iris.unl.edu/

After you use one of the above options, you will be at the Iris Main Page:
Click on "Services", then, on the following page click on "Distance Education Services." At this point, you will be able to read about the various services UNL's Library Services provide to distance learners.

For information about other services:
http://www.unl.edu/libr/dept/subjname.html

This page has information about the web request form, information about liaison librarian services, various delivery options (including web delivery), and much more.