

Introduction to Forensic Science

Spring 2008

Course Syllabus

Course:	SCI: 170-51
Instructor:	Laura Gannon-Murakami, Ph.D.
E-mail:	Murakami@champlain.edu
Place:	Joyce 313
Time :	Tuesday 5:30-8:00
Textbook:	Max Houck and Jay Siegel <u>Fundamentals of Forensic Science</u>

In this course, we will learn about the science of crime scene investigation. We will study the disciplines of biology, anthropology, physics, chemistry and even psychology to learn how crimes are solved. We will begin the course with an introduction of forensic science and we will learn about chemistry and cell biology. We will then learn about biological evidence such as DNA, blood and body fluids, hair and fingerprints. Toward the middle of the semester, we will learn about Pathology, Anthropology and what insects can tell us about a crime. We will also learn about drugs and toxicology. In the last section of the class, we will learn about the law, criminology, and forensic psychology.

Course Objectives:

1. First, you should be able to know the principles of forensic science and be able to describe the concepts and terms learned in this class.
2. Next, using what you learned, you should be able to apply your knowledge to the laboratory and case studies.
3. Using the scientific method, a goal for this class is to think and evaluate critically. You will be able to comprehend and critically analyze forensic science literature, including journal articles and current news stories.
4. Because communication is critical in science, this class will emphasize both written and oral communication. You will learn how to write scientifically through writing lab reports and a research paper. You will also learn how to orally present scientific topics.

5. The final goal for this class is to apply the knowledge to the world around you. We will be learning about how forensics affects you at the local level. We will conduct a mini scientific study and we will learn about some ways that we and effect change.

Class Policies:

- Academic Honesty:* You are expected to abide by the academic honesty policy as written in The Rudder.
- Attendance:* You are expected to attend every class. In accordance with school policy, attendance will be taken. Your grade will be lowered by one-half a letter grade if you miss more than 3 classes.
- Readings:* All readings listed in the lecture schedule are required. .
- Lectures:* You are responsible to study all materials covered in the lecture, even if it is not in the assigned readings.
- Assignments:* There will be a 10% reduction in grade for late assignments.
- Office hours:* I do not have specific office hours on campus; however, I am happy to stay after class to answer specific questions. I can also be reached by e-mail.
- Support Services:* If you believe that you have a disability requiring accommodations in this class, please contact the Coordinator of Support Services for Students with Disabilities as soon as possible. After you receive a letter documenting the appropriate accommodations, please see me so I can work with you to implement them in a timely fashion. It is the student's responsibility to seek and secure accommodations prior to the start of a test or project. **Contact:** Janine Allo, Coordinator of Support Services for Students with Disabilities Office: Hauke 007-I; Phone: 802-651-5961; E-mail: allo@champlain.edu
- Electronics/Computers:* Please shut off all cell phones when class begins. You are welcome to bring in your computer to take notes, but please, no "surfing" during class.

Grading:*Exams:*

There will be three exams and each exam is worth 100 points. Makeup exams will be given only under special circumstances. If you are sick the day of the exam, you must e-mail me that morning (before the exam) or you will get a zero for that exam. Tentative dates for the first three exams are listed on the following pages. Date changes will be announced at least one week in advance. **300 points**

Research Paper and Presentations:

You are required to write a research paper and present your topic to the class on a subject relating to health, nutrition, or fitness.

100 points

Group Projects

There will be several group and class projects

70 points*Homework and in class assignments:*

There will be homework and in class work assigned.

100 points

Participation:

It is expected that you actively participate in class.

Lab:

Total points of your lab.

200 points**Total Points:****800 points****Grading Scale:**

Grade	Level		
A	93+	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	

Grade Explanation

I	Incomplete grade (not computed); converted to "F" if course is not completed by the date outlined in the academic calendar
W	Withdrawn prior to 13th week - not computed
WP	Withdrawn Passing - issued after 12th week – computed
WF	Withdrawn Failing - issued after 12th week – computed
NG	No Grade - this is a temporary code
S, U, F	Satisfactory, Unsatisfactory, Failing (used for Mid-term grades only) S=C- to A, U=D- to D+, F=currently earning F

Lecture Schedule

<u>Lecture</u>	<u>DATE:</u>	<u>TOPIC</u>	<u>Chapter</u>	<u>READING</u>
1	January 8	Class Introduction Scientific Method	1 3	3-23 66-72
2	January 15	Chemistry The Cell		Handout Handout
3	January 22	DNA: Introduction	11	265-273 Handout
4	January 29	DNA as Evidence	11	273-291
5	February 5	Serology and Blood Review	10	237-263
	February 7	Exam 1 Lectures 1-4		
6	February 12	Forensic Hair Evaluation Fingerprints	12 19	295-315 510-533
7	February 19	TBA		
	February 26	Spring Break-No Class		
8	March 4	Pathology	7	157-184
9	March 11	Anthropology Entomology	8 9	185-216 214-235
	March 13	Exam 2 Lectures 5-8		
10	March 18	Drugs	13	319-357
11	March 25	Forensic Toxicology Presentation 1	14	359-387
12	April 4	Legal Aspects Presentation 2	23	625-658 Handout
13	April 11	Criminology Presentation 3		
14	April 18	Forensic Psychology Review		Handout
	April 25	Final Exam		

Dates are subject to change and additional material may be handed out.

Forensic Science Spring 2008 Lab Syllabus

Course: SCI: 170-53
Instructor: Laura Gannon Murakami, Ph.D.
E-mail: Murakami@champlain.edu
Time: Thursdays 5:30

Course description: The laboratory portion of this course will be coupled with the lectures. Lab sessions will reinforce the topics we discuss in lecture by doing hands-on experiments related to these topics.

Objectives:

1. The first goal of the lab section is to help you better understand the lecture material. Often it is easier to understand science by actively participating through experiments.
2. The second goal is to introduce you to laboratory experimental techniques.
3. Learning to think analytically and methodically is very important in your life. Using the scientific method, we will learn how to plan a good experiment and we will analyze the results.
4. The final goal of the lab is to get you excited about science!

Class Policies:

Academic Honesty:

You are expected to abide by the academic honesty policy as written in The Rudder.

Attendance: You are expected to attend every class. In accordance with school policy, attendance will be taken. **There are NO makeup laboratories.**

Labs: Laboratory assignments will be posted on WEB-CT. You will be expected to read and understand the laboratory before coming to lab. We will discuss the lab assignment at the beginning of each class, before you begin your experiment. Feel free to ask questions about the assigned experiment during lab.

Office hours: By appointment.

Grading: We will be doing 10 labs in this class. The first 9 are worth 15 points and the last lab will take 2 weeks and it will be worth 30 points. Reports are due one week after the completion of the lab and are to be uploaded into WEB-CT. Lab reports handed in late will be penalized 10%. No lab reports will be accepted later than 2 weeks after completion of the lab.

LABORATORY SCHEDULE

<u>Lab #</u>	<u>TOPIC</u>	<u>DATE</u>
1	Scientific Method	January 10
2	The Microscope/Cells	January 17
3	DNA Detectives	January 24
4	DNA Fingerprinting	January 31
	Exam 1	February 7
5	Trace Evidence	February 14
6	Serology	February 21
	Spring Break-No Class	February 28
7	Blood Splatter	March 6
	Exam 2	March 13
8	The Impression Lab	March 20
9	Critters on Cadavers	March 27
10A	Who Killed Henry Ward?	April 6
10B	Who Killed Henry Ward?	April 13
	Review	April 20
	Final Exam	April 25

Dates are subject to change. You will be given notice of any changes.

Lab Safety Rules
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- 1. Do not eat, drink, or smoke in the lab. Do not bring food or beverages in the lab.**
- 2. Know what to do in case of an emergency.** If there is a fire or an accident, know the way out of the room. Call emergency personnel (7-911). Know where the fire extinguisher, eye washer and chemical shower.
- 3. Be aware of possible hazardous and dangerous situations.** For example, if you are working with a flame, be sure not to place any flammable materials in close proximity to a flame. Be cautious of loose clothing or long hair near a flame. Use common sense.
- 4. Don't be afraid to ask.** If you are not sure what to do in the lab, ask. Additionally, if you are not sure about how hazardous a chemical is, ask. There are MSDS sheets for all chemicals.
- 5. Label all chemicals.** Solutions and chemicals should be clearly labeled with the chemical compound, the name of the person who made the solution, the concentration and the date.
- 6. Wash your hands before you leave.**

Forensics
Lab Report Write-ups
15 points

- 1 point **Purpose:** Explain, in complete sentences, why we are doing this experiment.
- 3 points **Introduction:** Using your own words, give some background information about the experiment. Explain why you are doing this experiment. Define terms. Give your hypothesis. (1-2 paragraphs)
- 2 points **Methods:** Describe the design of the experiment and how the experiment was performed, include the controls of the experiment. Don't include irrelevant information.
- 2 points **Results:** Clearly state the result that you found. Include labeled diagrams, figures, graphs, etc.
- 3 points **Discussion:** Explain your results. Did the results support your hypothesis? Why or why not? Were there any variables that might have affected your experiment?
- 4 points **Questions:** Answer any questions from the packet.