

2013

110-02B Our Universe- Forensic Studies

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Recommended Citation

Widmer, Lee, "110-02B Our Universe- Forensic Studies" (2013). *Physics Syllabi Fall 2013*. 34.
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Our Universe: Forensic Studies Fall Weekend 2013

PHYS 110-02B
12:45 pm – 4:45 pm
Lindner 101

Lee Widmer widmer@xavier.edu **This is the best way to contact me.**
Mailboxes in: Physics Dept. Office, Lindner
Weekend Office, Alter

Text: Criminalistics, Saferstein, 10th Edition

Grade: There will be two tests (100 points each) and a Crime Report (50 points) giving a total of 250 points for the lecture portion of the class. Your grade will be determined using the following scale:

240-250	A		180-194	C+		125-132	D-
233-239	A-		165-179	C		<125	F
220-232	B+		150-164	C-			
208-219	B		143-149	D+			
195-207	B-		133-142	D			

Schedule (subject to change)

Date	Topic	Lab/Test
13 Oct	Introduction to Assignments (2 pm)	
19	Introduction; ID	Line Spectra
26	ID	Eyewitness Identification
2 Nov	ID, Deductive	Fingerprinting
9	ID	Test 1
16	ID, CR, Bullets	Microscopes and Hair
23	CR	Glass Fractures
7 Dec	CR, Serial Arsonist (C, A)	Blood Spatter
14		Test 2 / Lab Final Crime Report due Home Labs due

Course Outline

Identification (ID): inanimate

- Analysis Techniques (5), (6)
- Microscopes (7)
- Fiber, Paint (8)
- Firearms (17)
- Glass, Soil (4)
- Toolmarks (17)

Voice, Handwriting (18)

- DNA (11)
- Bones
- Bitemarks

Identification(ID): animate

- Hair (13)
- Fingerprints (16), Retina, Iris
- Blood (10)

Crime Reconstruction (CR)

Glass (4)
Blood (12)
Ballistics
Fire and Explosions (14, 15)
Plane Crashes
Highway Accidents
Forensic Accounting
Cryptology
Bodies, Bugs and Decay

Crime Report

You will write a detailed Crime Report for a fictitious crime – robbery, assault, murder...

First, construct your crime in detail. **This is the criminal's perspective.** Where did it happen, how was it done, etc.

Now you take the **police perspective.** Decide what evidence you want to have found at the scene – using what you have learned or are learning.

Here's what you need to produce:

1. A description of the crime from the criminal's perspective. This can be done in paragraph form.
2. The Crime Report that reconstructs and solves the crime. This would include written paragraphs, pictures and/or drawings (real or fake), tables of data, etc. You can organize the report in any way that conveys the following:
 - a. The crime scene as found
 - b. The evidence found
 - c. The analysis of the evidence
 - d. The solution and arrest

Remember that old fashioned police investigation is the mainstay of crime investigation so include witnesses or personal connections to the crime and so on.

The description of the crime need not be any longer than a page.

The report should be at least three pages.

We will have 6 labs. There will be no labs on test days.

Each lab will be completed during the lab session.

Each lab will be worth **10 points**. **The lowest lab score will be dropped.**

Note: the dropped lab will show a score of 0 in Blackboard's Grade Center.

There will also be three Home Labs (see below).

The Home Labs are worth a total of **40 points**.

Finally, there will be a lab final worth **30 points**.

Your lab grade will be determined using the following scale:

115-120	A		86-93	C+		60-63	D-
112-114	A-		79-85	C		<60	F
106-111	B+		72-78	C-			
100-105	B		68-71	D+			
94-99	B-		64-67	D			

Home Labs

Footprints

Make a shoeprint in mud. Measure the dimensions of the print and the dimensions of the shoe, and compare them. Try to identify details of the tread pattern of the shoe in the print. Write a paragraph about your results. Include drawings or photos.

Printing

Print out the alphabet in upper and lower case as well as the digits 0 through 9 (ABC...XYZabc...xyz01..89) on three different printers. Be sure the font and size are the same on all. Examine the prints with a magnifier and see if you can find any differences in any of the letters or digits that could identify the specific printer. Write a paragraph about your results. Include drawings or prints.

Handwriting

Write the following in both cursive and print: "quiet as a mouse on Christmas Eve". Have two other people write the line in cursive and print. See if you can identify any distinctive features of each person's writing. Write a paragraph about your results. Include drawings or photos.

Lab Final

The lab final will consist of a crime scene. You will have to use what you have learned to analyze the crime.

Grading Policy

I follow the Department of Physics grading policy, which is accessible at:

<http://www.xavier.edu/physics/About-the-Department.cfm>

I interpret the grading policy to mean C is an average grade. Therefore, those students with point totals around the class average would get C. Historically, most students in this class get B or C. Each class is different, but in any case bear in mind that A is an exceptional grade that I will only give for very outstanding work in lecture or lab.

Please note that hard work is not synonymous with A.

I am unable to give an incomplete. At the end of the term I will determine your grade based on the work I have. I cannot take any work after the end of the term.

If you need an accommodation based on the impact of a documented disability, you should contact me personally to discuss your specific needs. Please also contact the Learning Assistance Center at 513-745-3280 or by visiting their office on the Fifth Floor of the Conaton Learning Commons, Room 514, to coordinate reasonable accommodations.