

2013

111-01 Our Universe- Forensic Science Laboratory

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Recommended Citation

Bosch, Amy, "111-01 Our Universe- Forensic Science Laboratory" (2013). *Physics Syllabi Fall 2013*. 2.
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Our Universe – Forensic Science Laboratory
PHYS 111-01
R 10:30-12:20
LND 203

Instructor: Amy Bosch

Office: LND 106

Phone: 513-745-4297

E-Mail: boschal@xavier.edu

Office Hours: Monday 9-10, Tuesday 12-12:30, Wednesday 12-1; Thursday 9:30-10. I am not on campus on Fridays.

Student Learning Outcomes: In this course, students will learn physical and general science principles through the study of forensics. Students will also learn the basics of some important forensics techniques. Students will learn the basics of writing lab reports. Students will utilize analytical and quantitative skills to design experiments and test theories. This is a one credit hour lab course. PHYS 110 lecture is a separate course with a separate grade. The topics covered in lab sometimes complement the lecture, but some topics are independent material.

Lab Preparation: Prior to each lab, you must fully understand the procedure to be followed. **Read each lab handout prior to the lab period.** Students who are unprepared for lab will have their grade lowered for that week.

Lab Partners: You will work in pairs during the lab sessions. Both students in the pair are expected to participate fully. You must hand in your own individual lab report. Data will be identical for each partner, but the memos and reports must be written in your own words and **must not be identical. Placing your name on another student's lab report DOES NOT COUNT as handing in a lab.**

Due Dates: All lab reports are due at the beginning of the next lab period. Partial credit will be given to lab reports submitted one week late. Lab reports **will not be accepted** if they are more than one week late. Attendance is mandatory at all lab sessions.

Technical Memos: For most of the labs, once the experiment has been completed, you will prepare a technical memo summarizing the data, analysis and conclusion. A template for technical memos is provided. Memos must contain all data and any graphs or diagrams generated during the analysis.

Photo Project (Due Thursday, December 5): You will be staging your own crime scene, complete with lots of physical evidence. You will then “investigate” your own scene, making sketches, taking notes, and preparing detailed photographs. A full report must accompany this project. More details and materials will be given to you in lab.

Crime Scene: Towards the end of the semester, you will be faced with a crime scene. As a group, you must discover, document, preserve, and analyze evidence. You must question witnesses, identify suspects, and create a theory of the crime. You will be

graded on your successful solution of the crime, as well as on the role you play individually. At the end of the exercise, you will write a memo to me, outlining the approach the team took, and parts in which you were directly involved. This is designed to be both fun and challenging, and to act as a capstone to this course.

Lab Final Exam (Thursday, December 12, 10:30-12:20): You are expected to understand the concepts behind each lab, as well as the procedure followed. The test will be a combination of multiple choice questions, short answer questions, and some practical activities. You should be able to perform the techniques used in the lab. The lab handouts will provide a good study guide. This exam is closed notes.

Grading: Your laboratory grade will be determined as follows:

Lab Reports	60%
Photography Project	10%
Crime Scene	10%
Final Exam	20%

A = 93-100%, A- = 90-92%, B+ = 87-89%, B = 83-86%, B- = 80-82%, C+ = 77-79%, C = 73-76%, C- = 70-72%, D+ = 67-69%, D = 63-66%, D- = 60-62%, F = 0 – 59%

Courtesy: Please leave your cell phones, i-Pods, etc. turned off during class. Food is not permitted in the lab during class.

Laboratory Schedule

<u>Date</u>	<u>Experiment</u>
Aug. 29	Introductory Lab
Sept. 5	Eyewitness Identification
Sept. 12	Fingerprinting
Sept. 19	Voice Analysis
Sept. 26	Glass Fractures
Oct. 3	Microscopes
Oct. 10	Hair Analysis
Oct. 17	Blood Typing
Oct. 24	Blood Spatter
Oct. 31	Cooling Bodies
Nov. 6	Cryptography
Nov. 14	Fluorescence Scavenger Hunt
Nov. 21	Crime Scene Week 1
Nov. 28	No Lab
Dec. 5	Photo Project Due
Dec. 5	Crime Scene Week 2
Dec. 12	Crime Scene Memo Due
Dec. 12, 10:30-12:20	FINAL EXAM

The instructor reserves the right to alter this syllabus if circumstances dictate.