

This laboratory course is a co-requisite of CHM 1057-001: *Chemistry Themes: Criminalistics*.

Instructors:

Section 001 – Tuesday Section

Prof. Carol A. Bessel

Office: 215C Mendel Hall; Phone: (610) 519 – 4876; Email: carol.bessel@villanova.edu

Office Hours: Thursday 4:30-5:30 pm; Mendel 314 or Mendel 215C

Section 002 – Wednesday Section

Prof. Deanna Zubris

Office: 300E Mendel Hall; Phone: (610) 519-4874; Email: deanna.zubris@villanova.edu

Office Hours: Tuesdays, 3:30-4:40 pm; Mendel 300E

Sections 003 – Thursday Section

Prof. Joseph Rucker

Office: 320B Mendel Hall; Phone: (610) 519 – 5237; Email: joseph.rucker@villanova.edu

Office Hours: Thursday, 10-11 am; Mendel 320B or Mendel 309

Teaching Assistants:

Section 001 - Tuesday – Donna Omiatek, Mendel 314

Section 002 - Wednesday – Donna Omiatek, Mendel 314

Section 003 - Thursday – ~~Jason Champion~~ Kathleen Spencer

Requirements:

Text – none required

Calculator

Villanova-approved laboratory goggles

Laboratory coat or apron

Laboratory Notebook (continuation from last semester is encouraged)

This criminalistics laboratory is destined to simulate real life situations. Scenarios will be presented concerning particular crime scenes and it will be the responsibility of the class to gather and analyze evidence during each laboratory period.

During the first few weeks of lab, many physical techniques used by practicing criminalists will be used. These techniques can be grouped into six analysis categories: Fingerprint Analysis, Impressions and Tool Marks, Separations and Chromatographies, pH and Extraction Techniques, Microscopy, Analysis of Biological Fluids. Familiarity with these techniques provides an essential building block for the investigation of the physical evidence associated with a crime scene. Students will work in pairs to complete the experimental flow chart provided during the first lab. The initial experiments may be simple, however subsequent experiments will increase in complexity. Grades will be based upon the complexity level achieved within the six analysis categories.

New Jersey State Crime Laboratory Field Trip. We anticipate that two dates will be offered for this required field trip. More details will be offered once scheduling is confirmed. Note: Villanova policy excuses students from classes to attend required academic field trips, however if a student cannot attend an alternative, individualized assignment will be given – please consult instructors as soon as possible regarding any difficulties in attending the scheduled field trips.

In the later weeks of the course, students will be asked to participate in investigations of typical crime scenes. A Laboratory Director, Division Heads, and Analysts will be chosen randomly, and these assignments will extend through the resolution of the case. The Laboratory Director will have overall supervision of directing the laboratory resources in certain areas and will assign portions of cases to Division Heads, who will then work with Analysts on assigned problems. Information will flow to the Laboratory Director from the respective divisions and everyone will have opportunities for input. Assigned roles will change during the semester. Notably, crime scene analysis will be complicated by legal and scientific requirements for chain of custody, preservation of evidence, proper laboratory technique, and in careful report writing and dissemination. The goal is to understand how solid laboratory data supports the successful resolution of criminal investigations. Careful laboratory notes will be required as parts of the cases are assembled into larger units prior to prosecution.

Attendance is required at all laboratory sessions; please notify your instructor (in writing, by phone or by email) at least one week before a laboratory session if you are unable to attend. This laboratory requires a willingness to participate in group problem solving activities and to share leadership and analyst. The TA(s) and instructors will evaluate performance on the basis of attendance, participation, quality of written and oral reports, and willingness to work with others in the solution of problems.

Grading

Flow Chart of Experiments	30%
Field Trip Participation	10%
Crime Scene Analysis	40%
<u>Class Participation</u>	<u>20%</u>
Total	100%