

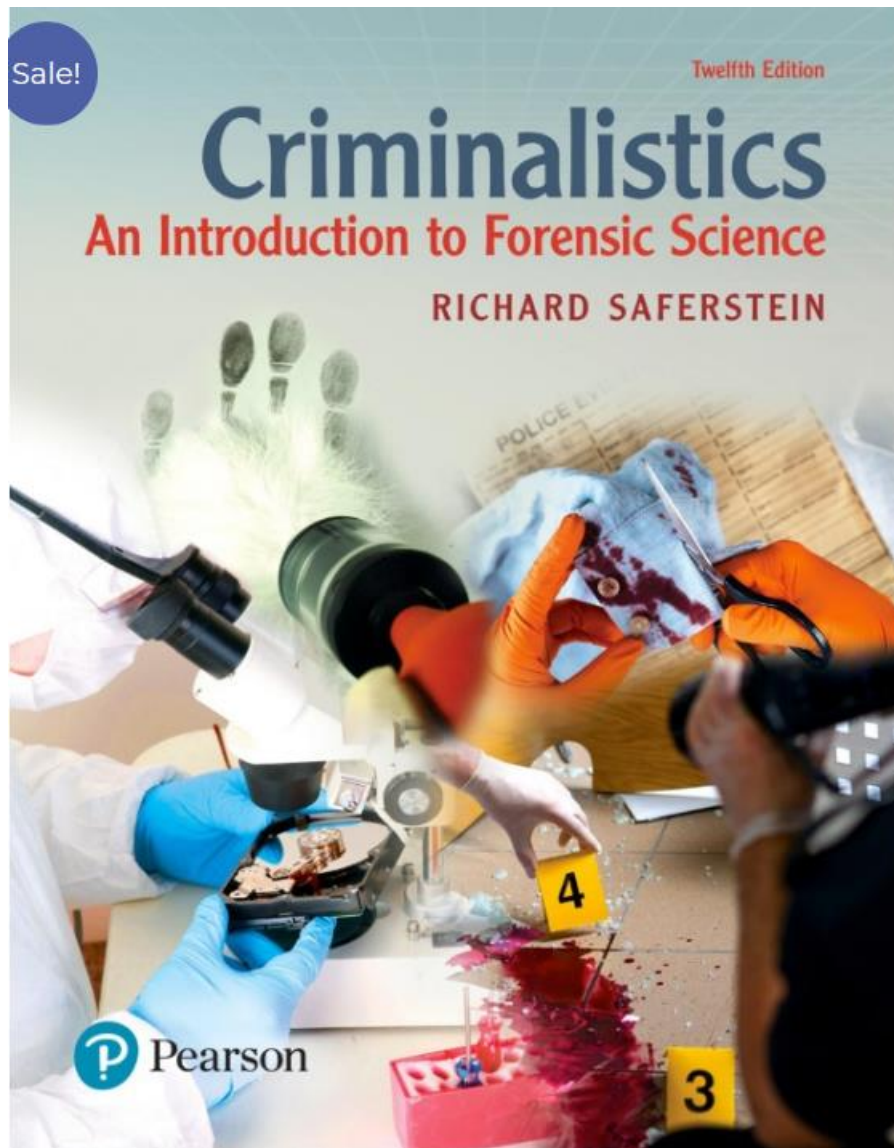
Course Title and Objectives

The course is Forensics. The goal is for you to learn as much as you can about this subject that is critical to maintaining a safe and just environment for all citizens.

Class Objective: To understand how forensics is performed, from the crime scene to the final laboratory conclusions (inclusive). To understand the methods used and the science behind them. To know how forensic results are applied in the courtroom. To understand how forensics relates to society.

Class Textbook

The class textbook is *Criminalistics, An Introduction to Forensic Science*, 12th Edition, by Richard Saferstein.



Richard Saferstein is well-versed in the field and has shown great intelligence in his wide range of knowledge of many aspects of the field – and he's from New Jersey.

I realize that this book is expensive, but until I can write my own book (I plan on giving that out for

free; this depends on how long the department has me teaching this course), you will have to pay for this textbook. The homework problems come from this textbook and the readings you are responsible for are from this textbook as well. Note: If you have not obtained this book for your permanent use by the third week of the semester, you will have convinced me that you do not care about learning the course material.

Class Schedule

There are 15 weeks of class time. Each week there are two class sessions. The following is a generalized schedule of what will be covered during the semester.

1. August 27 and 29
 - a) Forensics overview; introduction to forensics: Chapter 1, 3-24
 - Homework Problems: Page 26, Problems 1, 3, 4, 10 (also know what Locard's Exchange Principle is), 22 (just know how the conclusion of the case of Frye compares to the later case of Daubert), 23 (just know how the conclusion of the case of Frye compares to the later case of Daubert), 26-28, 30 (just know that this was really the Melendez Diaz case – Crawford was with a sworn statement by a wife)
 - Application and Critical Thinking, 4 (just know that the issue was that the method worked but it was not well established), 6
2. September 3, but not September 5 (This day follows a Monday, not Thursday, schedule.)
 - a) The crime scene: Chapter 2, 31-51
 - Homework Problems: Page 52 (and 53), Problems 1, 2 (anything well reasoned is fine), 4-14, 17-24, 27, 29, 30 (systematic and thorough), 31-33, 34 (anything is fine, such as existence), 35 (compare this to taking the object itself), 36-38, 39 (assume that there is fluid biological evidence on it and it requires air-drying), 40-42, 43 (anything implying a warrantless search and seizure), 44 (can use crime, but the point is that it is warrantless)
 - Page 53, Application and Critical Thinking 1-2, 3, 4, 5
3. September 10 and 12
 - a) Evidence: Chapter 3, 61-75
 - Homework Problems: Page 76, Problems 2-8, 10-20
 - Application and Critical Thinking, 2, 3 (you must be able to provide reasoning for your answers), 4-5
4. September 17 and 19
 - a) Blood Spatter: Chapter 4, 79-97
 - Homework Problems: Page 98-99, Problems 2 (anything reasonable), 3, 5-7 (note that this is for blood dripping down a surface), 9-12, 13, 14, 15, 16, 19-22, 23, 24-30, 33
 - Application and Critical Thinking, 1, 2, 3
5. September 24 and 26
 - a) Death and corpses: Chapter 5, 103-123
 - Homework Problems, Page 44-45: Problems 2-12 (For 12, omit “extremely”), 13-21 (for 21 there are two answers, so make sure that you know why you are giving your answer), 22-27, (for 27, omit “most”), 29, 31-32, 34-46
 - Page 126, Application and Critical Thinking, 1 (You can answer with whatever makes it more difficult rather than what makes it inaccurate), 2, 3, 5 (just the gender, and whether adult or child, assuming full bone fusion), 6 (just b and e)
6. October 1 and 3
 - a) Fingerprints: Chapter 6, 129-135, 139-148

- Homework Problems, Page 149, Problems 6-15, 17-18, 20-21, 26, 27 (depends on how definitive you want it to be); page 150, 29-30, 31 (superglue fuming is for these), 32 (any of the others, such as ninhydrin, is okay), 34 (ninhydrin again), 35 (Physical Developer works where others don't, because it works even if it became wet), 36-42
- Page 150, Application and Critical Thinking, 1, 3, 4, 5 (only need to choose between loop, whorl, or arch), 6 (just try to find 5 of them), 7 (Did you notice that Inan turned to Ivan and Lisa's got switched with Charlie's?)

7. October 8 and 10

a) [[Microscopy: Chapter 8, 169-183]]

- [[Note that because this will be treated briefly, it is extremely likely that the next subject — Guns — will be included in the lecture.]]
- The following homework problems are not required, but if you want to learn more about the subject, you are encouraged to do them.
- Homework Problems, Page 184, Problems 1, 3, 7-9, 12, 14-20, (21 is true; see the picture on page 174), 22-24, 27, 29-32, 33 (assume that this is a visual examination under a microscope with the proper magnification)
- Application and Critical Thinking: 1, 2 (recognize that this is under polarized light and that different crystals can rotate polarized light in different ways, such that certain rotations of polarized light will not be seen easily by a viewer), 3, 4

8. October 15 (?) and 17

a) Guns: Chapter 9, 187-208

- Page 219, Problems 2-7, 8 (either unrifled or tapered are acceptable), 9-11, 13 (you must justify your answer), 14, 16, 18-20, 21 (use NO_3^- or NO_2^- for the second answer), 22 (decide for yourself if you want to include .22 caliber bullets here), 23-25, 26 (neither is true, so suggest where they are to be initialed)
- Application and Critical Thinking, 1 (just answer either contact distance, close distance, or far distance), 2 (just answer either contact distance, close distance, or far distance), 3, 5 (just be able to justify your choice)

9. October 22 (?) and 24

a) Chromatography and spectroscopy: Chapter 12, 299-313, 354 (Inside the Science)

- Homework Problems, Page 315, Problems 45, 46 (this refers to retention time), 47-48, 50-53, 54 (assume this is an unequivocal identification), 55-56, 57 (assume that it is specific enough, as it usually is these days), 58
- Review Questions for Inside the Science, 2, 3, 6, 8
- Application and Critical Thinking, 5

10. October 29 and 31 (October 31 is Halloween.)

a) [[Tool marks and other impressions: Chapter 9, 208-218]]

- The following homework problems are not required, but if you want to learn more about the subject, you are encouraged to do them.
- Homework Problems, Page 220, Problems 30, 31 (any word describing a scratch, groove, or imperfection is valid), 32, 33 (any description of the electrostatic lifting of dust prints is valid here), 34 (just describe the process of preserving the impressions), 35

b) [[Matter, light, and glass analysis: Chapter 10, 223-245]]

- The following homework problems are not required, but if you want to learn more about the subject, you are encouraged to do them.
- Homework Problems, Page 246, Problems 1-2, 4-7, 10, 13-15, 19, 21, 23-25, 26 (either coherent light or a laser is okay), 28-29, 30 (don't think too hard for this one), 31-35, 36 (anything that describes measuring density is fine), 37, 39-45, 46 (anything that protects the glass from breakage is fine)
- Review Questions for Inside the Science, 5-8
- Application and Critical Thinking, 1 (anything reasonable is okay), 2, 3

- c) [[Hairs and fibers, Chapter 11, 251-272]]
- The following homework problems are not required, but if you want to learn more about the subject, you are encouraged to do them.
 - Homework Problems, Page 273, Problems 1-2, 4 (anything relating to the hair's surface is fine), 5-6, 7 (look at question 8 for the answer), 9-15, 16 (also add how this is done), 17-20, 21 (any description of what will enable non-mitochondrial DNA analysis is fine), 22, 23-24 (assume the same answer for both types of hairs), 25 (anything that relates the hair to anything else is fine), 27, 29, 31, 32 (anything but IR, but it's really visible light), 33-34, 35 (this is untrue, but explain why)
 - Review Questions for Inside the Science, 1-2
 - Application and Critical Thinking, 1-4, 5 (Assume that one is fragmented and two are interrupted, one is continuous and the others have no medulla at all.), 6 (only distinguish between imbricate and the others, but do not bother distinguishing between coronal and spinous), 7 (allow for both Worker B and Worker C, but explain why the others are excluded)
11. November 5 and 7
- a) Drugs: Chapter 12, 279-299
- Homework Problems, Page 314, Problems 1-5, 7-, 19 (illegal, clandestine, unsafe, or home are all fine), 20-22, 23 (Quaaludes or methaqualone is one answer, but Valium and Xanax are also fine), 24 (this one really is Valium and Xanax), 25-31 (note that 28 is similar to 19), 32 (Rohypnol and Ecstasy, but you should know why they are used), 33-34, 35 (just give the number), 36, 37 (these have accepted medical use and have a low but not the lowest potential for abuse), 38-44
 - Applications and Critical Thinking, 1-4, 6 (you can look up the procedures first)
12. November 12 and 14
- a) Forensic toxicology: Alcohol: Chapter 13, 319-333
- Homework Problems, Page 343, alcohol questions: Problems 1-5, 7, 8 (any 2 methods, as long as you understand them), 9-10, 13-16, 18-19, 20 (understand why it can't be alcoholic), 22, 23 (you don't have to know the case, but you have to know why the conclusion was made)
 - Review Questions for Inside the Science, 3, 5
13. November 19 and 21
- a) Forensic toxicology: Drugs: Chapter 13, 333-342
- Homework Problems, Page 344, drug questions: Problems 24, 25 (leave out vitreous humor because the question is for a live person), 26, 28, 30-32, 34, 35 (synergistic, but anything that includes drug-to-drug interaction is okay), 36 (don't forget that urine holds drugs after their effect), 37 (they're looking for "corroborate")
 - Application and Critical Thinking, Drugs: 5
14. November 26 and 28
- a) [[Trace metals, paint, and soil evidence: Chapter 14, 347-369]]
- The following homework problems are not required, but if you want to learn more about the subject, you are encouraged to do them.
 - Homework Problems, Page 370, Problems 1, 5, 7 (absorb and emit), 8, 9-10 (the answers relate to a continuous spectrum or a line spectrum), 11, 18-20, 21 (color, layering, or composition can be used here), 22, 23 (anything that can be individualized is fine, including a pyrolysis chromatogram), 24-25, 26 (note that pigments can be visualized and do not need a pyrolysis chromatogram), 27-29, 31 (more than one answer is valid, as long as it is explained), 32-33
 - If you want practice with questions involving basic atomic structure, make sure to do Page 370, Problems 2-5.
 - Review Questions for Inside the Science, 4-6
 - Application and Critical Thinking, 1, 4 (How deep should it be again, and why? Only the immediate crime scene, or some distance away? How far away?)
- b) [[Forensic serology: Chapter 15, 373-384, 386-393]]

- The following homework problems are not required, but if you want to learn more about the subject, you are encouraged to do them.
 - Page 394, 16 (immunoassays? Or antibodies), 25-27, 34-35, 37-38, 39 (think of non-motile and non-living but still existing sperm heads)
 - Application and Critical Thinking, 1, 2 (was an external skin wipe done? Was the clothing packaged separately?)
15. December 3 and 5
- a) DNA analysis: Chapter 16, 397-418
- Homework Problems, Page 422, Problems 1 (anything involving DNA, chromosomes, or genes is fine), 4-9, 10 (anything that makes sense is fine, including proteins or genes), 12 (how many?), 13-16, 17 (be careful with hair), 19-22, 23 (18 or 9 are okay here), 24-25, 27-29, 30 (13, but all you have to know is the reason why its not just 3 or 4), 31-33, 34 (recall that vacuum implies that it is airtight), 35
 - Review Questions for Inside the Science, 1-3, 5
 - Application and Critical Thinking, 1, 2 (just have a reasonable plan), 3-6
16. December 10 (There is no class on December 12)
- a) Fire and explosions: Chapter 17, 427-441 (Fire) and 441-453 (Explosions)
- Homework Problems for the Fire part, not the Explosion part: Page 454, Problems 1-3, 7-9, 11, 12 (answer this for most reactions), 13 (choose between flashpoint and ignition temperature/point), 14, 15 (choose between flashpoint and ignition temperature), 16, 18-24, 25 (assume that this is for several residues at the same time), 26-28
 - Review Questions for Inside the Science, 1, 3, 4 (use mass spectroscopy)
 - Homework Problems for the Explosion part: Page 454, Problems 30-33, 34 (two elements and saltpeter), 35 (either primary or high explosives are fine), 36 (ignore nitroglycerine, just choose from gunpowder, smokeless powder, guncotton, and nitrocellulose), 37-44
 - Review Questions for Inside the Science, 5, 7, 8 (use GC/MS, individual chemical spot tests, TLC, HPLC, or IR), 9 (this is IR)
 - Application and Critical Thinking, 5 (Lead azide is $\text{Pb}(\text{N}_3)_2$ and is a primer), 6, 7 (gloves? Plastic and paper?)

Topics in [[this alternate font]] will be treated briefly and will likely not take as long as the schedule allows. Students are not expected or required to prepare beyond these topics if the schedule does not suggest it, unless it is specifically stated in the class.

Please note that although I will attempt to adhere to this schedule, I am likely to get ahead or fall behind at times.

There are additional topics within the general study of forensics, such as biometrics, document examination, computer forensics, and mobile device forensics. If there is any specific request, we can include these in the curriculum.

Even though we will be skipping some chapters in the book, there are sometimes certain parts of the otherwise skipped chapters that have information you will be responsible for. Should this be relevant, make sure to pay attention to announcements of this sort during the lectures.

Note the homework problems that are suggested. Do them. Do not skip any of them. I welcome questions and requests for assistance from those who are interested in the subject, but I expect you to be mostly up-to-date with the assigned homework problems and have them on hand. I might even ask you to show me the homework problems you have done. If your response to this is a guilty, sheepish look (I know that you know what I'm referring to here) instead of reaching for the homework done, I will take note of that. Further conversation at that time will be based on the underlying fact that you are

not interested in doing well in the course. (You certainly do not want me to think that of you.)

Preparation for Lectures

You are expected to prepare for the class before attending. At the very least, this means reading the material in the textbook that is expected to be covered in the next class session *before* the lectures given on that material. Preparing for class also includes attempting the homework problems assigned for the upcoming lecture topic. [[Note: This does not include topics that will only be briefly mentioned. Preparation for those topics, denoted above in this alternate font, do not require more than a cursory scanning of the material in the textbook.]] Proper preparation ensures a greater understanding of the lecture topics and results in success in the course, so if you are serious about learning about forensics, it is strongly advised..

Grading

The final grade will be calculated from a series of quizzes given during the class sessions. We will assume that a final will be given, and that final will have the weight of two quizzes. The average of all these will be the resultant grade.

There are alternatives to the grading system mentioned above:

1) The final grade will be curved based on a formula stated during the class, 2) test(s) will be administered, and/or 3) an extra credit assignment will be given and credit awarded.

None of these possibilities should be assumed. In the event that the students insist, no changes will be done without a unanimous decision.

Attendance is generally required in order to do well in the class, but credit will not be removed for absences. In any event, no student is absolved from any responsibilities due to an absence.

Academic Integrity

The following statement is required: “The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for policy implementation can be found at www.brooklyn.cuny.edu/bc/policies. If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member MUST report the violation.”

You are all warned not to violate any of the academic integrity requirements. If I find a student who has violated any of these policies, the result will be severe. As this is a course in the practice of punishment for those who violate accepted rules, I will not countenance “I didn't know it was wrong” or “I thought it was okay to do” as an excuse.

Disabilities

The following statement is required: “In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services, Ms. Valerie Stewart-Lovell at (718) 951-5538. If you have already registered with the Center for Student Disability Services, please provide

your professor with the course accommodation form and discuss your specific accommodation with him/her.”

Unfortunately, I have heard some horror stories as to what goes on at the Center for Student Disability Services. Be warned that the result of this is that it is likely to cause a great deal of bureaucratic time wasting before anything can actually be done about your situation.

Legitimate Reasons for Missing Lectures

In the case of a documented passing, refer to the Student Bereavement Policy. In the case of non-attendance due to religious beliefs, refer to the front matter of the Undergraduate Bulletin, found on the Academic Calendars, Course Schedules, and Bulletins page of the Registrar's website.

Possibly Useful Dates

Tuesday, August 27: The first day of class. I'm assuming that if you have not read this by now, it's too late for this information to be of any use to you.

Monday, September 2: The last day to add a course. I don't know what relevance that has to this class, but there it is.

Thursday, September 5: Conversion day. This day will have the schedule of a Monday, not a Thursday.

Wednesday, October 16: Conversion day. This day will have the schedule of a Monday, not a Wednesday.

Tuesday, November 5: Last day to withdraw from a course with a harmless “W” grade. This is very important! You must check your grades to see if you are capable of passing the course by this time. If you have not taken stock of your standing in this course by this time, do not expect any sympathy from me if you realize that your GPA is going to go down due to your low grades in this class.

Friday December 13: Reading day. My mention of this here is almost entirely useless to you.

Saturday, December 14-Friday, December 20: Final examinations held.

Students are to know that no “late adds” (whatever that means) will be accepted after the last day to add a course.

You should read the Academic Regulations and Procedures in the Brooklyn College Bulletin. It can be found on the Registrar's website on the page named Academic Calendars, Course Schedules, and Bulletins.

As with everything involving the future, this class is subject to conditions and unexpected occurrences beyond my control, and to correct for them it may be necessary to make alterations to what was planned originally. No changes are expected.

I wish you all the best of luck this semester. Forensics is a very important aspect of the justice system in any civilized country, and an understanding of it will grant the student a respect for the primordial struggle of organized society to overcome the petty evils that continually challenge it.

ANTH 1205 Studies in Forensic Science 3 hours; 3 credits Introduction to forensic science, including modern techniques of forensic analysis. Collection and preservation of physical evidence at crime scenes. Authentic criminal cases. Same as CHEM 1037. (Not open to students who have completed Core Curriculum 3307.) 2017-2018: Satisfies Pathways College Option requirement. Starting Fall 2018 Satisfies Pathways Flexible Core Scientific World requirement. Same as CHEM 1037.

CHEM 1037 Studies in Forensic Science 3 hours; 3 credits Introduction to forensic science, including modern techniques of forensic analysis. Collection and preservation of physical evidence at crime scenes. Authentic criminal cases. (Not open to students who have completed Core Curriculum 3307.) 2017-2018 Satisfies Pathways College Option requirement. Starting Fall 2018 Satisfies Pathways Flexible Core Scientific World requirement. Same as ANTH 1205. Prerequisite: Junior standing.