



Forensic Science 2022-2023 Syllabus

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Welcome to the exciting world of Forensic Science!

Course Description: This hands-on course focuses on using scientific techniques and methods to collect, examine, and evaluate evidence pertaining to criminal investigations or "science as applied to law" (Webster's definition). This is a course rich in exploration, independent research, and hands-on inquiry-based lab investigation which applies to many disciplines such as anatomy, anthropology, biology, chemistry, entomology, geology, pathology, psychology, and physics to solving crimes. Students will learn the scientific protocols for analyzing a crime scene, chemical and physical separation methods to isolate and identify materials, how to analyze biological, physical and chemical evidence, and the criminal use of tools, including impressions from firearms, tool marks, arson, and explosive evidence. Students will learn about the history of forensics, forensic science careers and the psychology behind serial crimes and killers.

Course Structure: This course will cover twelve units, with at least one formal lab per unit. Students should plan to actively participate in our live class, complete all assignments thoughtfully and on time, and to study regularly outside of class. I use a flipped classroom so students will use the textbook, digital notebooks, videos, video lectures, and web links to learn about the topics. Live classes will be for demos, labs and mini-labs, and discussion sessions. Outside of class, work will consist of case studies, video questions (using Edpuzzle), notes from video lectures, online labs, and readings from the textbook. Students should expect to do 5-7 hours on assignments per week. Most assignments will be due weekly, with some having longer dues dates. Quizzes will be weekly, and tests will be given at the end of each unit. Students will complete most assessments on Canvas or Quizziz.

Please NOTE: Mature behavior is expected due to the sensitive and/or graphic nature of material covered. **A permission form signature from the parent will be required to view forensic-related material.**

Course Outline:

- Unit 1: Forensic Science Foundations
- Unit 2: Hair, Fiber and Paint Evidence
- Unit 3: Forensic Botany and Geology
- Unit 4: Prints, Marks and Impressions
- Unit 5: Forensic Serology
- Unit 6: DNA Evidence and Profiling
- Unit 7: Forensic Chemistry and Toxicology
- Unit 8: Firearms, Ballistics, Glass and Fire Forensics
- Unit 9: Document Analysis
- Unit 10: Forensic Pathology and Entomology
- Unit 11: Forensic Anthropology
- Unit 12: Forensic Psychology, Serial Crimes and Killers



WHAT THE STUDENT NEEDS TO DO TO BE SUCCESSFUL:

1. ASK QUESTIONS! Be curious and connected. Never be afraid of asking a question in or outside of class.
2. Keep up with the material and reading.
3. Do your homework. This is where the student gets to practice the concepts. Some assignments will be graded for correctness, and others just for completion. Homework assignments allow you to practice and will enable me to give you feedback and see how well you understand the material. I use "video lectures" to present the lesson and should be watched before class. We will use the live class to work on labs, mini-labs, and group inquiry work. Since we only meet once a week, it will be essential to do the homework. It is suggested that you break up the assignment into manageable sizes per day.
4. Use your resources: Textbook, Canvas Course website, and other websites given by the instructor.
5. Canvas Course: Here you will find **EVERYTHING** – all homework assignments, review information, videos, labs, case studies, class discussions and grades.
6. Come to class prepared: If you are not here, you will miss important discussions, activities, and There will usually be a Quick Check given at the beginning of each live class to check for understanding of the material.



Materials Required:

Textbook:

Forensic Science Fundamentals & Investigations 2nd or 3rd Editions by Bertino & Bertino
(2nd Edition ISBN-13: 978-1305077119) (3rd Edition ISBN-13: 978-0357124987)

School Supplies:

1. Scientific Calculator (does NOT need to be a graphing calculator)
2. A 100-sheet graph paper notebook
3. Pen/pencils
4. Colored Pencils/Markers
5. Tape – double-sided as well as clear tape
6. Scissors
7. Index Cards
8. Post-it Notes

Lab Materials: a list of supplies needed will be sent no later than 4-6 weeks before the start of the course. Some will be household-type supplies.

Technology Required:

1. High speed, broadband Internet
2. Sound card and microphone (for live sessions)
3. Streaming video capabilities to watch video lectures and other videos as assigned
4. Computer Access
5. Microsoft Word, Excel and PowerPoint or Google Docs, Sheets and Slides Access
6. Printer
7. Scanner/Ability to scan with phone or tablet



Laboratory Investigations: Laboratory investigations aka Crime Lab Investigations are designed to provide opportunities to learn about forensic science through first hand observations, evidence collection, testing of concepts and principles introduced in class, and to explore specific issues and problems in greater depth. Investigations will be diverse. The labs and mini-labs are designed to invite students to think critically, develop

and conduct well-designed experiments, utilize appropriate CSI techniques and instrumentation, analyze and interpret data, present data in the form of statistical and graphical presentations, form conclusions, and propose further study.

Expectations:

As a student in this course, you are expected to be respectful to those around you; be prepared for class and be ready to explore with an open mind and a willingness to learn. **Mature behavior is expected due to the sensitive and/or graphic nature of the material being covered.**

Communication:

Parents and Students may contact me through Canvas. I will respond within 48 hours to all communications. Please do not hesitate to contact me or ask questions.



Evaluation and Grading

All grades will be available in Canvas for students and parents. Assignments will be graded within five days of a due date. Students will be evaluated through performance on quizzes & tests, mini-laboratory investigations, formal lab reports, homework, and independent projects. A progress report will be given mid-semester and at the end of a semester. Parent conferences are available upon request. Quizzes & Tests will comprise 30 % of the total points, Labs & Mini-Labs 30%, Homework 30%, and Projects 10 %.

