

Chemistry II - Forensic Science Spring 2022

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- It is *very important* to me to respond to your questions or concerns promptly; however, please note that I do receive *a lot* of emails. If for some reason I do not respond within 24 hours, please resend your original email and/or leave me a voicemail message (765-285-7456).
- Please note that if you email me after midnight, it is highly unlikely that I will read that email until sometime the following morning.

Meeting Times:

2 - 3:00 MWF

Lab 2 - 4:00 Thurs in Burris 210

Office Hours

- My Office:
 - a. Monday 8 a.m. – 10 a.m.
 - b. Tuesday and Thursday 4 p.m. – 6 p.m.
 - c. Friday 8 a.m. – 10 a.m.
- Burris 210:
 - a. Thursday 8 a.m. – 11 a.m.

I can also meet by appointment.

Course Overview

Forensic science relies strongly on the application of the scientific method on physical evidence discovered at a crime scene. Unlike most crime scene dramas, the Forensic Scientist rarely visits a crime scene but instead processes the evidence found at a crime scene by Crime Scene Investigators. The different types of physical evidence found at a crime scene are so varied that one forensic scientist would never be able to learn all of the methods used to process all types of evidence. Instead, forensic scientists tend to specialize in one area. This course focuses on the laboratory techniques used in fingerprinting, shoeprints, and blood spatter analysis.

Philosophy

Learning is NOT a spectator sport. The ultimate responsibility for success in learning lies with you, the student. Learning is a process by which a person seeks to make sense out of the world. The view of the world or any part of it, held by a person is as individual as fingerprints. The only way we are able to share knowledge is by verbal and written communication. The quality of the communication depends on the quality of the language used. A teacher is a facilitator for learning. The teacher structures experiences which provide the maximum probability that students can make sense out of the material presented.

Role of the Teacher

My responsibility is to present experiences that will assist you to make sense out of forensic science. These experiences can be altered, based on your input, to improve your chances of being successful. It is imperative that communications are two ways so that we can remain informed about how you view the concepts we are studying.

It is also my responsibility to design tests, quizzes, and lab assessments that fairly evaluate the level of your success. You have the right to know where you stand at all times during the semester and to ask when you do not understand why you were evaluated in a particular manner.

Your Role

You are in control of your success in this class. To some extent, your success will be a function of your background, but the major factor in your success will be the quality and quantity of time and effort you put into your studies. You must keep in mind that 1) your principal job at this stage in your life is to be a student, and 2) chemistry is not the only course you are taking. You must balance your time such that you maximize success in all courses. I will provide several vehicles to assist you. You must elect to use them.

As this is a college course, you will need to spend approximately one to two hours outside of class on your studies for every hour you spend in class. This is a general guideline; some of you will spend less time and some will spend more. Before you get too far into the semester, you need to *sincerely evaluate your outside commitments and other courses to determine if you have the time needed to put into this course.*

Academic Integrity

Academic integrity is essential to the mission of the Academy. All students deserve a healthy learning environment and evaluations that are based on their honest independent efforts. A clear sense of academic honesty and responsibility is fundamental to good scholarship and learning.

The expectation is that the work on exams is your own and that homework, take-home quizzes, and lab reports, while discussed with other students, is of your own creation. Academic dishonesty will not be tolerated. Please refer to the student handbook.

Quizzes:

Each week you will have a “vocab” quiz which works as follows:

An opportunity to earn bonus points!

- If you earn between 90 – 99% you are in the “cushion zone.”
 - For example, say on the following week you earn less than 90%, your new score will be calculated as follows:
$$x = \text{score you earned the previous week}$$
$$y = \text{score you earned this week}$$
$$z = \text{new score}$$
$$x - [(100 - y)0.10] = z$$
 - If your score is still in the cushion zone, and then the following week you again earn less than 90%, your new score will be calculated as follows:
$$z = \text{calculated score from previous week}$$
$$y = \text{score you earned this week}$$
$$z - [(100 - y)0.20] = \text{new score}$$

- Each successive week that your score is below 90%, the percentage will increase by 10%, until you are out of the cushion zone.
- If you earn consecutive 100's, then each week 10% will be added.
 - If you have bonus points, and you earn less than 90% on the following quiz your score will be calculated as follows: $Score = Previous\ Score - (100 - New\ score)$
 - If you have bonus points greater than 110%, the extra credit points on the quiz will count as 10% of the otherwise calculated value.

Chapter Quizzes

At the end of each chapter, there will be Chapter Quiz

Attendance/Tardies

It is extremely important that you attend ***all*** class periods. The pace of this course is extraordinarily fast and missing a day can seriously put you behind in this course; however, I do understand that absences happen. Please adhere to the following guidelines in the even you miss a class.

- If you are absent for a school scheduled event such as a field trip or a college trip, you are required to turn in your work ***prior*** to the trip *unless* alternate arrangements have been made with me *prior* to your trip.
- If you have an excused absence,
 - the work that was due on the day of your absence is expected the day you return
 - work that is due the day you return is expected the following class period
- Extended excused absences require that *you* generate a conversation with me *outside* of class so that we can work out a plan to get you caught up.
- Tardy is defined as arriving after class has started. After ten minutes, a tardy will be counted as absent.
- Sleeping in class – first offense will result in a warning, the second offense will result in an unexcused absence.
- You are allowed one unexcused absences without penalty provided it was not a quiz or test day.
 - 1st unexcused absence:
 - No penalty for homework – place it in my mailbox the day it is due
 - If you missed a test or quiz you must schedule to take it with me or Mrs. Drumm ON THE SAME DAY. If you do not take it on the same day, 20% will be deducted for each day missed.
 - 2nd unexcused absence:
 - You are required to attend office hours in which you will watch the classroom lecture and have an opportunity to ask questions.
 - Homework will not be accepted – you will earn a zero
 - If you missed a test or quiz you must schedule to take it with me or Mrs. Drumm ON THE SAME DAY. If you do not take it on the same day, 30% will be deducted for each day beyond.
 - Residential: you will be grounded
 - NECP's – parents will be notified
 - 3rd unexcused absence:
 - You are required to attend office hours in which you will watch the classroom lecture and have an opportunity to ask questions.
 - Homework will not be accepted – you will earn a zero
 - If you missed a test or quiz you must schedule to take it with me or Mrs. Drumm ON THE SAME DAY. If you do not take it on the same day, 40% will be deducted for each day beyond.
 - Residential: you will be grounded
 - NECP's – parents will be notified

Indiana Academy Unexcused Absence Policy

“It is the policy of the Indiana Academy that any absence from class is unexcused, except for illness, death in the family, college or school-related activities, and extenuating circumstances. When a student is absent from a class, the instructor reports the student absence to the Faculty Attendance Coordinator in the Office of Academic Affairs. Unless the absence is excused by a school official, it is considered unexcused. The decision as to whether an absence is excused is **not** determined by the instructor.

Four (4) or more unexcused absences will lead to academic and residential consequences beyond the scope of this class determined by the Office of Academic Affairs (i.e., residential groundings, parent/principal conference, and/or detention).

Late Work

- No late work will be accepted

Cell phones/Computers/Tablets

- Cell phones are not to be used in class.
 - During a test, cell phones must be put on silent, airplane mode, or turned off.
- Computers and/or tablets may be used in class for taking notes.
- Occasionally you will need your computer for a lab – you will be given notice when you will need a computer for class.

Laboratory

Many of the labs that you will do in class are inquiry based labs. *Labs make up 20% of your overall grade.* If you miss a lab (and it is an excused absence) then you will be required to make up the lab within six days of the missed lab; however, the due date will not change. You will not be allowed to simply use the data from your lab partner. Learning laboratory techniques is just as important as learning the concepts behind the labs.

- Lab work cannot not be made up for an unexcused absence.
- Sign and return the lab safety contract.

The prelab is extraordinarily important and you must be prepared to do the lab when you come to class. The prelab is on Canvas and you are expected to work as a group to complete the prelab. Failure to complete the prelab will be an automatic deduction of 50% from your lab assignment.

Exams

There will be four exams over the semester plus one final exam. The exams will cover more than one chapter. You will be able to use a calculator, a formula sheet, a periodic table, and a polyatomic ion list. *Exams make up 50% of your overall grade.* Use your Chapter Quizzes and class notes as a study guide.

BSU Statement

“Ball State University aspires to be a university that attracts and retains a diverse faculty, staff, and student body. We are committed to ensuring that all members of the community are welcome, through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse as expressed in our Beneficence Pledge and through university resources found at <http://cms.bsu.edu/campuslife/multiculturalcenter>.”

Grade Weights

Weight	Description
45%	Exams
20%	Laboratory
15%	Quizzes
10%	Homework
10%	Final Exam
100%	Total

Grade Scale

Percentage	Letter Grade
≥93	A
90 - 92	A-
87 - 89	B+
83 - 86	B
80 - 82	B-
79 - 77	C+
70 - 76	C
65 - 69	C-
<64	D*

Topics:

Unit 1 – Review of General Chemistry and Basic Organic Chemistry

Unit 2 – The Chemistry of Fingerprinting and Blood

Unit 3 – The Chemistry of DNA and Toxins

Unit 4 – The Chemistry of Ballistics and Decomposition