

**University of Texas at El Paso
College of Sciences
Department of Chemistry and Biochemistry**

Course Number: **BIOL 3375**
Course Title: Forensic Pathobiology
CRN: **25821**
Credit hours: 3 semester hours
Instructor: Dr. Hamidreza Sharifan
Email: hsharifan@utep.edu

Office Hours:
Wednesday: 9:00-11:50 AM, Tuesday 14:30-17:00 PM
Or make an appointment by e-mail

Class Meeting Times: TR 0900-1020

Class Meeting Location: PSCI 208

REQUIRED READING:

DiMaio's Forensic Pathology (Practical Aspects of Criminal and Forensic Investigations)
Part of: Practical Aspects of Criminal and Forensic Investigations | by Vincent J.M. DiMaio and D. Kimberley Molina

Other requirements and materials for learning will be provided during the course according to the observation of student responses and will be placed on Blackboard.

COURSE DESCRIPTION:

Topics include post-mortem drug metabolism, analysis of bodily fluids for toxic substances, and the interpretation of chemical findings in autopsy reports. Students will gain practical skills in utilizing state-of-the-art analytical instruments, ensuring they are well-equipped to contribute meaningfully to the field of forensic pathology with a specialized focus on forensic chemistry.

I. COURSE Content

Introduction to Forensic Pathology

Overview of forensic pathology and its role in criminal investigations
Distinction between clinical and forensic pathology

Basic Anatomy and Physiology

Understanding human anatomy and organ systems
Physiological processes and their relevance to forensic pathology

Post-Mortem Changes and Decomposition

Stages of decomposition and factors affecting decomposition rate
Chemical processes involved in decomposition

Cause, Manner, and Mechanism of Death

Differentiating between cause, manner, and mechanism of death

Role of chemical analysis in determining cause of death

Autopsy Procedures

Conducting a complete autopsy, including external and internal examinations

Collection of samples for chemical analysis

Toxicological Analysis in Forensic Pathology

Principles of toxicology and its role in forensic pathology

Methods for detecting and quantifying drugs, poisons, and toxins

Chemical Asphyxiants and Environmental Toxins

Identification and effects of chemical substances causing asphyxiation

Chemicals commonly encountered in industrial accidents and environmental exposure

Alcohol, Drugs, and Medications

Post-mortem analysis of alcohol levels and their effects on the body

Analysis of pharmaceutical drugs and their role in cause of death

Metals and Heavy Metals Poisoning

Identification and analysis of metals in post-mortem samples

Effects of heavy metal poisoning on organs and tissues

Forensic Serology and DNA Analysis

Bloodstain pattern analysis and interpretation

Collection and analysis of biological samples for DNA profiling

Volatile Organic Compounds and Gases

Detection and analysis of volatile chemicals and gases in post-mortem cases

Implications for fire investigations and inhalation injuries

Forensic Anthropology and Skeletal Remains

Role of chemical analysis in identifying remains and determining cause of death

Analysis of bone and tissue samples for chemical exposure

Forensic Entomology

Application of entomology in estimating time of death and post-mortem interval

Chemical aspects of insect colonization and decomposition

Case Studies and Practical Applications

Analyzing real-world cases to apply knowledge gained in the course

Understanding the role of forensic pathology in actual investigations

II. METHOD of STUDENT EVALUATION

Students will submit the assignment in a timely manner as due date. Exams is usually in person and multiple choice questions or descriptive questions. Students are expected to do a case study presentation. The possibility of class discussions will be explored with students and done if satisfactory agreement and can be achieved on the rubric.

A. Course Grading Policy

B. Grades will be assigned as follows: 90-100%-A, 80-89%-B, 70-79%-C, 60-69%-D, < 59%-F.

Activity and/or Description	Maximum Possible Score	ASSESSMENT
Assignments		

1	Participation	100 pts	5%
2	Quizzes	200 pts	10%
3	Midterms	200 pts	30%
4	Written Assignments*	100 pts	20%
5	Final exam	200 pts	20%
6	Project	100 pts	15%
Total Points		1000 pts	100%

***Late reports/assignments submission up to a week receives up to 50% off grade. After a week, it receives no score**

A. COURSE GRADES The final grade in the course is defined as follows:

Grade Equivalent	Percentage Equivalent
A	100 – 90
B	89 – 80
C	79 – 70
D	69 – 60
F	59 and below

III. Course Policies

A. Course Information and Instructor Expectations

GENERAL STATEMENTS

ACTIVITIES/EXERCISES/PROJECTS

The course will encourage students in active learning as opposed to passive learning. This means students will read course materials, watch videos do available interactive exercise and answer questions on these. Students will discuss the topics and exercises in class and also present on the topics. The professor will try to take more of the role of a facilitator when possible. Course materials such as literature, relevant power points, learning objectives etc are posted on the Blackboard. Multimedia presentations such as videos and interactive on-line exercises will also be used when possible depending on their availability of access. Any student assignments may include use of online and interactive materials and the scholarly literature from peer-reviewed journals. Students may if possible also be tasked with making oral presentations (preferably using information technology) concerning specific topics and/or scientific journal papers.

Preparing for the Exams:

Students are subject to review the material covered in each class and in the textbook. Students should practice the assigned problems for mastering the class material.

EXTREMELY IMPORTANT: After each module the homework assignments will be posted on Blackboard for students to practice in order to comprehend the materials better. The assignment will not be turned in. Best preparation for each exam is practicing and understanding (not memorizing!) of the homework problems. The exam questions might be very similar to the assigned homework problems. It is important that students submit each homework BEFORE the next class period.

The statements below between quotation marks are reproduced verbatim from the university's academic administrators.

“ACADEMIC HONESTY:

See Student Code of Conduct for policy on academic integrity (policy below).

CHEATING AND PLAGIARISM:

What is Academic Integrity?

“Academic Integrity is a commitment to fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals into action.” Specifically these values are defined as follows:

- Honesty: advances the quest for truth and knowledge by requiring intellectual and personal honesty in learning, teaching, research, and service.
- Trust: fosters a climate of mutual trust, encourages the free exchange of ideas, and enables all to reach their highest potential.
- Fairness: establishes clear standards, practices, and procedures and expects fairness in the interaction of students, faculty, and administrators.
- Respect: recognizes the participatory nature of the learning process and honors and respects a wide range of opinions and ideas.
- Responsibility: upholds personal responsibility and depends upon action in the face of wrongdoing.

(The International Center for Academic Integrity, 2014, p. 4)

Academic integrity is highly valued and seriously regarded at The University of Texas at El Paso. More specifically, students are expected to maintain absolute integrity and a high standard of individual honor in academic work undertaken at the University. At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty.

- B. Students must not be late, talk to each other in any way or aloud, and must not leave the room and return in the course of an examination for any reason (after the questions have been distributed). Students must not walk about the room, use their cell phones or allow their phones to ring. All phones must be completely turned off and out of sight during the examination. After completing their responses, if the examination is still in progress, students must leave the examination room and not linger to talk with the instructor. The instructor may be approached after the examination. Any of these violations may result in a reduced grade or a grade of zero for the examination. Students must not cheat in any way whatsoever.**
- C. Students should not be late for an exam or test or other form of assessment. All assignments must be submitted on time.**
- D. Late assignments will not be accepted. This is because a number of days are given for each assignment and a student can be reasonably deemed to have enough time to complete one . For this reason, an emergency on the day an assignment is due may not be counted an excuse**

since the assignment could have been submitted before and it is not necessary to wait until the last minute to complete or submit an examination. Contravention of any of these rules may be treated and reported a examination misconduct and may result in a lesser grade and in serious cases- a grade of zero. If a student misses an examination it generally may not be made up.

- E. **If an examination or assignment is missed due to emergency circumstances such as illness, the examination or assignment will not be made up but the student will be graded on their other examinations and not penalized for the assignment or examination in question. However, no more than two assignments and examinations may be missed in this way (e.g. two examinations or one examination and one assignment or two assignments)**
- F. Students are to note and adhere to other university policies that are specified in the
- G. school catalog. Students are strongly advised to come to class on time. While in class, their conduct should be considerate towards both fellow students and instructor. Forms of inconsiderate or disrespectful conduct include, amongst others, showing up late for class, sleeping, passing too many notes, reading non-course material in class, talking while someone else is speaking, talking on or allowing cell phones to ring while class is being conducted.
- H. **Use of cell phones in class is strongly discouraged** as it can interfere with the learning process and Cell phones should be put away out of sight during class. Students should also refrain from trying to contravene this rule by placing a bag etc between them and the line of sight of the professor. If that is done it may be presumed that the student is surreptitiously using a cell phone.

Absence should be explained by documentation for example for valid reasons such as illness. Attendance will be taken for each class and more than 2 unexplained absences will likely affect grades. In addition, coming late to class or leaving before the class is over without very reasonable cause (and the reasons are very limited) may be counted as absences.

If a student misses a class for a reason such as participation in a university event or other reason, it is up to them to familiarize themselves with material that would have been covered in the class. They also have to give the professor official documentation in advance.

B. Academic Honesty/Integrity

<https://www.utep.edu/student-affairs/osccr/student-conduct/academic-integrity.html>

The consequence for a violation of the Academic Honesty Code is “zero points” for the assignment. Add any additional information related to your discipline.

Accommodation: If you are an individual with a disability who requires accommodations, please discuss this with the instructor before or during the first week of class (preferably, immediately after the first class period). You may contact the Center for Accommodations and Support Services (CASS); website: www.sa.utep.edu/cass.

C. Important University Dates

Please refer to the online calendar for additional information:

<https://www.utep.edu/student-affairs/registrar/Academic%20Calendars/academic-calendar.html>

