

SYLLABUS

FORENSIC TOXICOLOGY (2025_SUMM_30320_BIOL_5330 2W1_Forensic Toxicology) Start Date: 07/07/2025 End Date: 08/13/2025 Classroom: Online	Assistant Professor Esra BALCIOGLU E-mail: esra.balcioğlu@sulross.edu Class hours: Online Office hours: By Appointment
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Contacting Me: The best way to reach me is via email. Do not hesitate to contact me for any reason. I will respond to email inquiries as soon as possible.

COURSE MATERIALS

The following course materials are required

1. Powers, R. H., Dean, D. E. (2015-12-01). Forensic Toxicology. [VitalSource Bookshelf version]. Retrieved from vbk://9781466581951
2. Recommended-American Psychological Association (October 2019). Publication Manual of the American Psychological Association, Seventh Edition,
<https://apastyle.apa.org/products/publication-manual-7th-edition-spiral>

Additional resources, including supplementary readings, videos, and other materials, will be made available on Blackboard throughout the semester.

SRSU Library Services and Support

The Bryan Wildenthal Memorial Library at Sul Ross State University is your go-to hub for academic resources, offering a wealth of materials and services to the entire SRSU community at no cost. You'll find a vast collection of books, articles, and online databases readily accessible at www.library.sulross.edu. If you're accessing resources off-campus, simply use your Lobo ID and password to log in. For checking out physical materials, remember to bring a photo ID. Need assistance? Our librarians are here to help! You can reach them via email at srsulibrary@sulross.edu, by phone at 432-837-8123, or by visiting them in person.

Resources for RGC Students

For Rio Grande College (RGC) students, you have the added benefit of access to the Southwest Texas Junior College (SWTJC) Libraries located in Uvalde, Del Rio, and Eagle Pass. These libraries offer additional study spaces, resources, and online materials accessible through library.swtjc.edu. They also serve as convenient pickup locations for InterLibrary Loan (ILL) services from the Alpine campus.

To easily connect with online library resources, simply log into your Sul Ross Blackboard account. This will directly link you to the library webpage, where you can explore online databases and access articles on your reading list.

Important Syllabus Information

Please be aware that the syllabus is subject to updates. It's crucial to regularly check course announcements for any changes. The instructor reserves the right to modify the syllabus as necessary throughout the semester.

Course Description

BIOL 5330 is a graduate-level, intensive course that provides an in-depth examination of forensic toxicology. The course emphasizes the scientific investigation of drugs and poisons within legal and regulatory frameworks, focusing on the core areas of forensic toxicology: postmortem toxicology, human performance toxicology, and forensic drug testing.

Students will explore the origins, chemical properties, pharmacology, and physiological effects of commonly encountered substances, including central nervous system stimulants and depressants, opioids, cannabinoids, hallucinogens, and other relevant compounds. Emphasis is placed on the identification and quantification of these substances in biological matrices.

The course requires advanced engagement with scientific literature and the application of theoretical toxicology. Students will also develop critical thinking, independent learning, and scientific communication skills.

Prerequisite: Enrollment in the Master of Science in Forensic Science program.

Course Learning Objectives

By the end of this course, you'll be able to:

- **Demonstrate a foundational understanding** of general toxicology and forensic toxicology principles.
- **Explain toxicokinetic and biotransformation processes**, including how toxic substances are absorbed, distributed, metabolized, and eliminated by the body.
- **Analyze toxicological findings in postmortem cases**, emphasizing their interpretation within a forensic context.
- **Identify and describe the toxic effects** of substances on various organ systems (organ-system toxicology).
- **Classify and characterize major toxins, drug classes, alcohols, and metals** commonly encountered in forensic casework.

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Student Learning Outcomes

Upon successful completion of this course, students will be able to:

Demonstrate a solid understanding of general and forensic toxicology principles and articulate their significance in criminal investigations and legal proceedings (aligned with CJ-GRAD-SLO 1, 2, and 3).

Describe the processes of toxicokinetic and biotransformation—including absorption, distribution, metabolism, and elimination of toxic substances—and evaluate how these influence the interpretation of forensic evidence (CJ-GRAD-SLO 1 and 3).

Evaluate toxicological data in postmortem cases, interpret findings within a forensic framework, and explain their relevance in criminal case assessments and courtroom testimony (CJ-GRAD-SLO 1 and 2).

Explain the toxic effects of various substances on organ systems and connect these effects to issues of human performance and the legal implications of drug-impaired behavior (CJ-GRAD-SLO 2).

Identify and classify key toxins, drug classes, alcohols, and metals encountered in forensic toxicology, and critically assess analytical techniques and their limitations in legal contexts (CJ-GRAD-SLO 3).

Marketable Skills:

This course is structured to support the development of key marketable skills essential for careers in criminal justice and forensic science. Throughout the course, the following skills will be emphasized:

- **MS 1 – Written Communication Skills:** Strengthening the ability to present complex scientific information clearly and professionally in written form.
- **MS 2 – Critical Thinking and Observation:** Enhancing analytical abilities through the evaluation and interpretation of toxicological evidence.
- **MS 3 – Multicultural Understanding:** Promoting awareness of diverse populations and cultural factors relevant to forensic investigations.
- **MS 4 – Accessing Resources:** Developing proficiency in locating and utilizing crime data, scientific literature, and current legal codes and procedures.
- **MS 5 – Teamwork and Collaborative Work:** Encouraging effective collaboration in laboratory and research settings.
- **MS 6 – Analyzing Crime Factors:** Building skills to examine and interpret the toxicological and environmental factors that contribute to criminal behavior.

Technology Requirements

This course requires frequent use of **Blackboard**. Students must check it regularly for announcements, assignments, grades, and course materials. Key Blackboard tools include email, course documents, discussion boards, grade center, SafeAssign, and external links.

Basic Computer Skills Needed:

- Sending/receiving email with attachments
 - Browsing the internet and downloading files
 - Using word processing software (e.g., MS Word)
- Required Technology:**
- A reliable computer with stable internet access
 - A current web browser capable of streaming content and downloading materials
 - Access to Blackboard using your **Lobo ID and password**

For assistance, tutorials are available on the Blackboard support page.

Participation Policy

This is a fully online course with no class meetings scheduled. However, active participation is expected. To start, please complete the non-graded **“Introduction” post** to introduce yourself to your classmates and your professor.

Students are expected to:

- **Log into Blackboard regularly** to check announcements, assignments, and deadlines
 - **Complete all assignments and exams online** by their posted due dates
 - **Contact the instructor via email** with any questions about course materials, assignments, or exams.
- Consistent engagement is key to success in this course.

Attendance Policy

Although this is a fully online course, student engagement and participation are still mandatory. The University’s attendance policy applies to all distance learning courses. A student may be dropped with an **“F” grade** for excessive non-participation—defined as **more than 3 weeks of inactivity** in a long semester, **1 week in a summer session**, or **3 days in a midwinter session**.

Inactivity includes:

- Not logging into Blackboard
- Not submitting assignments
- Not participating in required activities
- Not communicating with the instructor
- Not following the participation guidelines in the syllabus

Students must respect academic integrity and copyright laws. All submitted work must be their own unless group work is specifically assigned. Additionally, students accessing the course from a remote site are expected to treat the host campus, its facilities, and staff with professionalism and care.

Students are required to check their **SRSU email accounts regularly**, as all official communications—including those sent via Blackboard—will be directed there.

Late Assignment Submission Policy

All coursework and assignments must be submitted **by the stated deadlines**. Late work is generally **not accepted**, as students are informed of all due dates at the beginning of the term and are expected to plan accordingly.

Exceptions will only be made in cases of **documented and university-recognized excuses**. If a student misses an assignment or exam, they must promptly provide a valid explanation and supporting documentation.

Students are strongly encouraged to review the syllabus regularly and stay informed of all deadlines throughout the semester.

Academic Integrity

Students are expected to uphold the highest standards of academic honesty as outlined in the **Sul Ross Student Code of Conduct**. Any form of academic dishonesty—including **cheating, plagiarism, collusion, fabrication, or falsification of records**—will not be tolerated and will be addressed in accordance with university policies.

Definitions:

- **Cheating:** Using unauthorized materials or assistance during exams, altering academic records, or obtaining answers through dishonest means.
- **Plagiarism:** Submitting another’s work, ideas, or words as your own without proper citation.
- **Collusion:** Assisting or being complicit in another student’s academic dishonesty.

Using tools like **ChatGPT or other AI generators** is prohibited unless explicitly permitted for a specific assignment. Violations may result in penalties ranging from a failing grade on an assignment to failure of the course and may lead to further disciplinary action.

Maintaining academic integrity protects both the value of your education and the credibility of the university.

APA Style

This course will use the American Psychological Association (APA) Seventh Edition formatting and style guide for all written assignments. If you have any questions or concerns regarding the use of APA, a few resources have been provided below. Please note that all external sources must be appropriately cited. A failure to do so constitutes plagiarism and is a violation of the course academic honesty standards. Beside numerous online sources you can also visit the following link for help with APA

https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_style_introduction.html.

Student Support Services

Sul Ross State University offers various programs to help students succeed, including advising, counseling, mentoring, tutoring, supplemental instruction, and writing assistance. For a complete list of services, visit Student Support Services at <https://www.sulross.edu/section/311/student-support-services>. For more information, contact SSS at (432) 837-9118 or visit Ferguson Hall, Room 105.

Counseling Services: Sul Ross students have access to nine free counseling sessions through TimelyCare. For 24/7 support, visit TimelyCare/SRSU. In-person counseling is also available in Ferguson Hall, Room 112 (Alpine campus), and via telehealth for remote and RGC students.

Students with Special Needs - Americans with Disabilities Act as Amended (ADAAA)

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. Alpine students seeking accessibility/accommodations services must contact Mary Schwartze Grisham, M.Ed., LPC, SRSU's Accessibility Services Coordinator at 432-837-8203, or email mschwartz@sulross.edu. The office is located on the first floor of Ferguson Hall # 112, and the mailing address is P.O. Box C-122, SRSU, Alpine. Texas, 79832.

Departmental Undergraduate Program Marketable Skills

(Aligned with Texas Higher Education Coordinating Board – 60x30TX Plan)

The 60x30TX initiative aims for 60% of Texans aged 25–34 to hold a degree or credential by 2030. One key component of this goal is that all graduates from public institutions in Texas will complete academic programs with clearly defined marketable skills—competencies valued by employers that support career readiness and lifelong employability.

Marketable skills include both technical and soft skills—often referred to as “employability” or “transferable” skills—developed through coursework, research, internships, and co-curricular activities. Graduates of the Homeland Security and Criminal Justice Undergraduate Programs at Sul Ross State University will demonstrate the following marketable skills:

1. Effective Verbal and Written Communication
2. Data Literacy and Quantitative Analysis Skills
3. Critical Thinking and Observational Abilities
4. Teamwork and Collaborative Work Practices

5. Cultural Competency and Multicultural Understanding
6. Analytical Skills in Crime Causation and Prevention
7. Knowledge of Legal Codes, Procedures, and Public Safety Protocols

These skills prepare students for diverse roles in law enforcement, homeland security, public service, and justice-related professions. **Other Course Expectations**

- This is an upper-level college course, and students are expected to produce work that reflects that level of academic rigor. This includes the use of proper APA formatting, correct grammar, clear sentence structure, and organized presentation of ideas.
- Students are responsible for carefully reviewing the syllabus to stay informed about assignment requirements and due dates. Please contact the instructor promptly if clarification is needed.

Course Evaluation

Reaction Papers (100 Points Each)

You are required to submit a **Reaction Paper** each week based on the assigned readings. Each paper should meet the following format requirements:

- **Length:** 1 full page
- **Spacing:** 1.5-spaced
- **Font:** 12-point Times New Roman

Each Reaction Paper should focus on the **assigned readings for the week**. If there is more than one assigned reading, you are expected to **read all required materials** but may choose **one reading** on which to base your paper for that week.

Important: A Reaction Paper is **not a summary** of the reading. Instead, it should reflect:

- Your **perspective**
- Your **analysis and critique** of the ideas presented
- Any **connections** you see to course themes or real-world applications

Due Date: Reaction Papers are due **every Sunday by 11:00 PM (CT)** unless otherwise noted.

Weekly Quizzes (100 Points Each)

You will complete a **weekly quiz** to assess your understanding of the week's required readings.

Quiz Availability:

- Quizzes will be **posted every Friday at 1:00 PM (CT)** on Blackboard. **Due Date:**
- Quizzes must be submitted by **Sunday at 11:00 PM (CT)** each week.

Each quiz is worth **10 points** and will cover key concepts and material from the assigned readings for that week.

Midterm Exam (100 Points)

Annotated Bibliography Assignment

For your **Midterm Exam**, you will prepare an **Annotated Bibliography** of **10–12 scholarly sources** that will serve as part of the literature foundation for your **Final Paper**.

You must use **scholarly, scientific, peer-reviewed journal articles**.

- **Government or expert reports** are the only exception to this requirement.
- **Web articles, popular magazines, and newspapers** (e.g., NYT, Time, Newsweek) will **not** receive credit unless the article is a **reprint from a peer-reviewed journal**.
- Your selected articles should reflect **scientific research** and the use of appropriate **research methods**.

✦ ✦ **For Each Source, Your Annotation Should Address the Following:**

1. **Author(s):** Who wrote the article?
 2. **Purpose:** What was the author's purpose in writing this piece?
 3. **Major Findings:** What are the key assertions or findings of the article?
 4. **Evidence:** How does the author support these findings?
 5. **Comparison:** How does this source compare or contrast with another source in your bibliography?
 6. **Relevance:** How does this source contribute to your understanding of your chosen Final Paper topic?
 7. **Research Methods:** What research methods were used in this study?
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✦ ✦ **Introductory Paragraph:**

Before listing your annotations, include a brief **introductory paragraph** explaining:

- The topic you are researching
 - Why you believe this topic is **important** or significant
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✦ ✦ **Formatting and Length Requirements:**

- Use **APA citation format** for all entries.
 - For APA guidance, see:
[APA Style Guide](#)
Purdue OWL APA Guide
 - Each annotation should be approximately **300–400 words per article** (excluding the citation line).
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Important Notes:

- This assignment will count as your **Midterm Exam grade (100 points)**.
- Selecting high-quality, relevant sources is critical for both this assignment and your success on the Final Paper.
- Be sure to plan ahead — preparing a strong annotated bibliography now will help streamline your Final Paper writing process.

Final / Research Paper (200 Points)

Your **Final Paper** will focus on a topic related to **Forensic Toxicology**, in keeping with the overall focus of this course. You may select any element of **Forensic Toxicology** to explore in depth, including but not limited to:

- Faz I-Faz II Reactions
- Postmortem Toxicity
- Organ System Toxicity-Common Toxins
- Alcohol
- Opiates and Opioids
- Non-Opiate Sedatives/ Hypnotic Drugs
- Amphetamines and Related Compounds
- Hallucinogens, Psychedelics, and Cannabinoids
- Cholinergic and Anticholinergic Toxins
- Metals

A **sample paper** will be posted on **Blackboard** to provide guidance on proper formatting and structure.

Requirements:

- Your paper must include **at least 10 scholarly citations**.
 - **Websites, Wikipedia, news media, or popular magazines** (e.g., NYT, Newsweek) are **not acceptable sources**.
 - Use **peer-reviewed journal articles, books, or government/expert reports**.
- Length: **10 to 15 pages** (not including **cover page** or **reference list**)
- Format:
 - **Double-spaced**
 - **12-point Times New Roman font**
 - **APA style** for formatting and citations
 - [APA Style Guide](#)
 - [Purdue OWL APA Guide](#)

Submission Process – 3 Steps:

Your Final Paper will be submitted in the following **three stages** to guide your progress and ensure proper feedback:

- **Topic Proposal / Introduction of Topic**
- **Annotated Bibliography** (Midterm Exam Assignment)
- **Final Paper Submission**

Important: Refer to the **course calendar** and **academic calendar** posted on Blackboard for all important **due dates** and **submission deadlines**.

This **Final Paper** will be worth **200 points** — it is the largest single component of your course grade. Please begin planning and researching your topic early in the term.

Grading

Grading Components

Assessment	Points
Reaction Papers (4 x 25 points)	100
Weekly Quizzes (5 x 20 points)	100
Midterm Exam	100
Final Paper	200
Total Possible Points	500

Course Grade Scale

Letter Grade	Points Range
A	500 – 460
B	459 – 420
C	419 – 380
D	379 – 340
F	339 & below

Course Schedule

This course schedule is subject to change as needed to meet the needs of the course. Students will be notified of adjustments when they are made. Also, any additional reading materials, resources and other information will be posted on Blackboard.

Students will be notified of how to access this information by the instructor. *****All times are in central time*****

DATES	TOPICS	READINGS
Week 1 July 7 – July 13	Introduction of Syllabus and course requirements Introduction A Selected History of Forensic Toxicology Toxicity and Toxidromes	Powers and Dean, Forensic Toxicology Mechanisms and Pathology, Chapter 1-2-3 QUIZ-1 REACTION PAPER 1
Week 2 July 14 – 20	Toxicokinetic Biotransformation Postmortem Toxicology INTRODUCTION RESEARCH PAPER TOPIC	Powers and Dean, Forensic Toxicology Mechanisms and Pathology, Chapter 4-5-6 QUIZ-2 REACTION PAPER 2
Week 3 July 21– 27	Organ System Toxicology: Neurotoxicology Cardiac Toxicology Hepatotoxicity Kidney Toxicology Pulmonary Toxicology	Powers and Dean, Forensic Toxicology Mechanisms and Pathology, Chapter 7-8-9-10-11 QUIZ-3 REACTION PAPER 3
Week 4 July 28 –Aug 3	Alcohols: Ethanol, Methanol, and Related Compounds Opiates and Opioids Non-Opiate Sedative/Hypnotic Drugs MIDTERM EXAM: ANNOTATED BIBLIOGRAPHY	Powers and Dean, Forensic Toxicology Mechanisms and Pathology, Chapter 12-13-14 QUIZ-4 REACTION PAPER 4
Week 5 Aug 4 – Aug 10	Sympathomimetic Amines: Amphetamines and Related Compounds and Cannabinoids Toxins Metals	Powers and Dean, Forensic Toxicology Mechanisms and Pathology, Chapter 15-16-17-18 QUIZ-5
Aug 13!!! END OF TERM!!!	FINAL PAPER SUBMISSION	(Due Date Wednesday, Aug 13, 2025)

END OF COURSE EVALUATIONS: Student evaluations of faculty are administered online at the end of each term/session for all courses with five or more students. Students will receive an email containing a link to a survey for each course in which they are enrolled. All responses are anonymous.