

Chemistry 315-001

Introduction to Forensic Toxicology Lecture

Fall 2016 Syllabus

Chem 315-001 (3 credit hours), Tuesday 4:15–6:45 pm, LSB 212

Prerequisite: Chem 222 or 224

Instructor: Dr. James DeFrancesco

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Office Hours: MWF 11:30 am -12:20 pm, Tues 2:30 pm – 3:45 pm, and by appointment.

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If an email is necessary, please write “Chem 315-001” in the subject line. I will generally answer emails within 24 hours.

Course Description

This course stresses the practical and theoretical aspects to forensic toxicology, the study of drugs, and their implications in a forensic setting when toxicity sets in. The analysis and description of drugs are introduced. Case studies are reviewed where drug use may become a forensic matter.

Critical thinking skills, as well as problem solving skills, are essential in all areas of study. This course will aid in the development these essential skills and provide students with the basic knowledge of the problems which are faced in the scientific laboratory in everyday life. Critical thinking is an important component to decision making which will determine actions taken in the laboratory. Many of these actions are positive, but if a wrong decision is made, it can have detrimental effects on an individual, a laboratory, and even an entire laboratory system.

Over the past 20 years, intense news coverage of criminal investigations and prosecutions involving a great deal of forensic evidence has certainly raised the profile of forensic science in the mind of the general public. With increased attention has come greater scrutiny of the scientific validity and operational controls essential for success to each discipline within forensic science. This scrutiny can ultimately expose scientific weaknesses and ethical breaches in operational forensic laboratories. A loss of credibility can be devastating to a laboratory and significantly reduce its ability to operate.

Course Objectives

Students should develop basic scientific literacy, understand the scientific method of inquiry, understand ethical thought, and the application of ethics to the field of forensic science. Breakdown of this thought and application will be the major part of course discussion and should be demonstrated in the written assignments. Furthermore, students will appreciate the impact of ethics on society, their laboratory, and their reputation. Upon completion of this course, the student should:

1. Understand the basic concepts of ethics and ethical thought and professional behavior in forensic science and its application to Forensic Toxicology,
2. Understand how an ethical breach can be handled in the media, and how the breach can have lasting effects not only on the scientist, but the laboratory they work for and the criminal justice system.
3. Use written, verbal, and presentational skills to discuss complex scientific concepts.
4. Understand the importance and wide applicability of scientific methodology and ethics to problems in all areas of their lives.
5. Understand the professional obligations of being involved in Forensic Toxicology.

Course Text Materials: Clarke's Analytical Forensic Toxicology; Sue Jickells and Adam Negrusz, 2nd ed.; Pharmaceutical Press; 2013; ISBN 978-0-85369-705-3

Attendance Policy

Students are responsible for all materials and homework assignments for classes missed.

Homework Assignments

The only homework assignments will be the presentation and paper. The requirements are described below.

Student Responsibilities

Students are responsible for being punctual to class, completing all assignments on time, reading assigned materials before class and participating in class discussions.

Grading System:	Quiz	10 points
	Midterm Exam	30 points
	Final Exam	30 points
	Monograph Presentation and Paper	30 points
	<u>Class Participation</u>	<u>10 points</u>
	Total	110 points

Grading Scale:	A	100–94%	C	78–76%
	A-	93–91%	C-	75–73%
	B+	90–88%	D+	72–70%
	B	87–85%	D	69–67
	B-	84–82%	D-	66–64%
	C+	81–79%	F	≤63%

Academic Honesty

Academic dishonesty in this course will not be tolerated. The Instructor encourages students to converse with each other about the topic outside of the classroom.

There is a difference between sharing knowledge and cheating. Copying others work and presenting that work as one's own is an example of academic dishonesty. Cheating and plagiarism take many forms. Academic dishonesty during an exam can take many forms, including but not limited to: sharing materials/information with another student during the exam, looking at another student's quiz/exam sheet, talking, sharing a calculator, using a cell phone, using lecture notes, etc. This list is not meant to be exhaustive, but highlights several dishonest situations. If it is determined that materials in this course are plagiarized or have been shared between students (current or past), no credit will be given for the work in question. Cases of suspected academic dishonesty will be handled according to University policy/guidelines. Review Loyola University Chicago's policy on Academic Integrity: http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml

Services for Students with Disabilities (SSWD) Policy

Necessary accommodations will be made for students with disabilities who procure a SSWD letter. Do discuss your academic needs with the Instructor as soon as possible! However, to receive any accommodations self-disclosure, proper documentation, and registration with the SSWD office at Loyola University Chicago is required. Accommodations cannot be made until the Instructor receives proper documentation. Furthermore, accommodations are not retroactive and begin only once appropriate documentation has been received by the Instructor in a timely manner. Only those accommodations specifically listed in the formal SSWD letter will be provided. SSWD Policies and procedures can be found at: <http://www.luc.edu/sswd/>

Exams

The format of the exams may vary between multiple choice, short answer, and essay. The midterm will include all information from the lectures up to that point. The final exam will cover the remainder of the material. It will not be cumulative. I have no plans for make-up exams.

Tutoring

The Tutoring Center at Loyola University offers free tutoring to students. To see the complete tutoring schedule and find additional information, visit the Tutoring Center webpage at www.luc.edu/tutoring.

Norms of Course Proceedings

The classroom is a safe place to question and explore ideas involving chemistry. Student and Instructor voices are important to this work. Feel comfortable to ask questions during lecture/discussion, office hours, etc. To further the atmosphere of respect, no recording devices will be permitted during lecture.

Chem 315-001 Lecture Schedule (subject to change*)

<u>Week</u>	<u>Date</u>	<u>Chapter</u>	<u>Lecture Topics</u>
1	Aug 30	-	Introductions and Course Expectations
2	Sept 6	1	Introduction to Forensic Toxicology
3	Sept 13	2	Pharmacokinetics and Metabolism
4	Sept 20	3	Drugs of Abuse
5	Sept 27	-	Group independent work on drug monograph
6	Oct 4	4	Quiz worth 10 pts on chapters 1-3; Other Substances Encountered in Clinical and Forensic Toxicology
7	Oct 11	-	Presentation of Drug Monographs (return quizzes)
8	Oct 18	-	no class (holiday)
9	Oct 25	-	Midterm Exam (ch 1-4)
10	Nov 1	5	Workplace Drug Testing
11	Nov 8	6 7	Alternative Specimens Postmortem Toxicology
12	Nov 15	10 12	Drug-Facilitated Sexual Assaults (DFSA) Solid Dosage Forms ID
13	Nov 22	11	Alcohol, Drugs, and Driving
14	Nov 29	13-21	Selections from Chapters 13-21: Analysis of Toxicology Samples
15	Dec 6	22	Quality Control and Assessment
16	Dec 13	-	Final Exam (ch 5-7, 10-12, parts of 13-21)

*This schedule is a general guideline of what to expect during each course lecture. The schedule herein is subject to alteration at the discretion of the Instructor based on the pace of the course.

Guidelines for Grading of Drug Monograph

The monograph assignment is worth 30 pts. The presentation should have a maximum of 10 slides (please email this to me directly after the presentation). The paper will be typed, double spaced, and printed single sided. The font size will be either 10 or 12. The paper should be 4-5 pages and submitted in hard copy form. Email or disc submission of the paper will not be accepted. Papers are penalized 1 point per day they are late. The point allocation for the oral presentation and paper is detailed below:

Presentation (18 pts)

Organization (3 pts)

Content (3 pts)

Graphics (3 pts)

Mechanics (3 pts)

Style (3 pts)

Class Engagement (3 pts)

Paper (12 pts)

Organization (4 pts)

Grammar, sentence structure, punctuation (4 pts)

Completeness of each section (4 pts)

Issues to cover in presentation:

1. History of the drug and its use
2. Scheduling of the drug including why, when, penalties, and in which schedule
3. Pharmacokinetics of the drug in humans
4. Expected effects of the drug
5. Drug toxicity
6. Street names and dosages
7. Additional drug specific information
8. Trip Reports (underground websites/chat rooms)

IDEA (Individual Development and Educational Assessment)

IDEA is the course/instructor evaluation system that Loyola University Chicago utilizes. *Essential* and *Important* objectives have been selected by the Instructor which represent the goals and development to be achieved throughout and as a result of completing the course. Near the end of the semester, an email will be sent to you requesting the completion of the IDEA course/instructor evaluation for Chem 315-001. The objectives will be discussed the first day of class.

Essential objectives:

3. Learning to apply course material (improve thinking, problem solving, making decisions)
4. Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course
11. Learning to *analyze* and *critically evaluate* ideas, arguments, and points of view

Important objectives:

1. Gaining factual knowledge (terminology, classifications, methods, trends)