

FRSC 640

CHEMISTRY OF DANGEROUS DRUGS
Tentative Lecture Syllabus

Instructor: *Dr. Ellen Hondrogiannis*

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Office hours: By appointment.

Blackboard course site: The course ID is FRSC640001.

Schedule: **Tuesday 2:00-3:15 pm, SC 5252 for lecture**
Thursday 2:00 – 3:15 pm, SC 5331 for laboratory

Recommended text: Julien, R.M., *A Primer of Drug Action*, any edition. I will use the 12th edition.

Purpose of course: A study of the chemistry, methods of detection and analysis of select drugs. Hands-on independent laboratory component to include drug extraction, analysis on GC/MS, and evaluation of results. Literature review of current drug detection and techniques and related topics. Scientific writing.

Course Evaluation: During the semester three 60 minute in-class exams, worth 100 points each, will be given. If you miss an exam, you will be given a final exam (on the day of the university-scheduled final exam) to replace the missed exam(s). If you miss the final exam your grade will be recorded as zero unless you have made prior arrangements with me or supply me with an acceptable (my decision) documented excuse. Grade adjustments to exams can only be made within one week from the date I return them to the class. You are also required to attend 2 seminars or webinars (on anything related to science 😊) and turn into me a half page summary of each. Each summary is worth 10 points.

There is one lab exercise with a final report for a total of 50 points (20 points data collection; 30 points final report **suitable for publication in the *Journal of Forensic Sciences***). This is due on the day of your final exam and this assignment takes the place of a final exam. You are expected to find time outside of class to run your samples on the GC/MS.

The format of the laboratory is likely new to you. In class, I will orally present you with a goal. I encourage you to take notes, since a laboratory procedure will not be provided. You will need to think through the laboratory, ask questions, read the literature, plan your experiments, then carry them out independently. At a minimum you will need to prepare calibration standards and a calibration curve, so I encourage you to review this from your undergraduate courses. In the

laboratory you will be expected to follow oral instructions. I am available during class time to meet with you to discuss any of the above as you move through it. I will not, however, discuss any concepts with you if you are absent from the lab or lecture. You may ask your classmates for help but you cannot ask the RAs. Concepts from the laboratory are testable. You will be working independently on the lab.

If the university moves to remote learning, then I reserve the right to weigh any exams taken in class considerably greater than exams taken remotely. For example, if you only take one exam in class and the rest of the exams are taken remotely (because the university moves to remote learning) then I may weigh the first exam at 90% of your grade and the remaining exams at a total of 10% of your grade.

Laboratory dress: When working in the laboratory you need to wear approved chemical splash goggles, long pants, and closed-toe shoes. Please read and sign the Lab Safety Agreement (on BB) for the second week of class. There is also no food allowed in any laboratory. Any water bottles/containers must be kept inside of your backpack. A breach of any of the above (to include anything stipulated in the Lab Safety Agreement) will result in 10 points automatically deducted from your report. After the second offense you will not be allowed back into any laboratories and thus will not be able to collect any more data. You will also not be allowed to use another student's data for your report.

GC/MS online sign up: 7890 alpha GC/MS through BookMyLab (<http://towsoncore.bookmylab.com/index.php>) (I will add you after the first week of classes)
Username: your email
Pw: forensics
Calculate the total time of your run and sign up accordingly.

Laboratory Fees: Laboratory fees are used for the purchase of solid phase extraction columns, drug standards, and solvents as well as GC/MS vials and other instrument consumables.

Disabilities: Students with approved accommodations should submit their memos to the instructor the first week of class, or as soon as possible thereafter. It is the student's responsibility to present this paperwork in a timely fashion and to follow up regarding accommodations that require instructor participation (i.e., testing accommodations). If you think you need accommodations but do not yet have them, please contact Disability Support Services (410-704-2638).

Course Communications: You are responsible for anything sent by the instructor via email or posted on Blackboard. All email communication will be sent to university email accounts; you are responsible for checking your university email account frequently. I will usually respond within 24 hours of receiving an email (48 hours on weekend). However, if you are requesting an appointment, then please email me at least three days prior.

Laboratory Policy for Pregnant Students: Pregnant students should consult their physicians for advice on whether or not to perform experiments in the laboratory. Students are encouraged to provide their physician with a list of the chemicals that they might be exposed to while in lab. They should also check the MSDS sheets (available in the Department) to be aware of the hazards of the chemicals.

If a student is advised against performing laboratory work, then faculty must make accommodations for the student. Any accommodations should comprise a workload that is approximately equivalent to the regularly scheduled laboratory work. These accommodations may include:

- performing “dry” experiments only, in a place free from exposure to ongoing experiments;
- performing the wet chemistry at a later date;
- receiving an incomplete grade in the course pending completion of experimental work

Course Grading Standards:

A	93.10-100%
A-	90.10-93.00%
B+	87.10-90.00%
B	83.10-87.00%
C	70.00-83.00%
F	<70.00%

Policy on Attendance: Attendance will not be taken. However, attending lectures is highly advantageous for learning the material and succeeding in the course especially since all the material will be from handouts or notes delivered in class. If you miss a class, you are responsible for obtaining all missed material from another student.

Policy on Cheating: Before the exams are handed out, you must put books, notes and cell phones away. You are not allowed to leave the room once the exam has begun. You are also not to talk to another student during the exam. Students are not allowed to ask questions of the professor once the exam has begun. You will be given 5 minutes prior to starting the exam to read it over and ask questions. After that time, you will not be allowed to ask questions. The use of cell phones during an exam, quiz, or laboratory will be dealt with as if the student was cheating and is grounds for failure of the exam, quiz, or practical. Cases of academic dishonesty, to include plagiarism, will be handled in compliance with the Towson University Student Academic Integrity Policy. The penalty for any violation in this course is an automatic F in this course and removal from the program. If you observe another student cheating, I encourage you to let me know. I will keep your information strictly confidential. If students are found working

together on any part of the laboratory including instrument operation, then both students will fail the course. Making up data will also result in you failing the course.

Copyright Notice:

Your instructor retains all copyrights to all original materials distributed in this course (including, but not limited to, hard copies and electronic copies of lecture slides, notes, practice problems, worksheets, assignments, lab materials, and exams). Reposting, selling, or otherwise distributing these materials in any fashion at any time is prohibited.

Mental Health: Students who are experiencing personal difficulties or mental health challenges are encouraged to seek free and confidential assistance at the Towson University Counseling Center (TUCC). Same-day appointments are available, and you can reach a crisis counselor by phone after hours. For more information about TUCC, please visit their website at <https://www.towson.edu/counseling/>. To make an appointment or for after-hours crisis assistance, please call 410-704-2512.

All TU students can access 24/7 digital peer support through TogetherAll, an online community to share feelings anonymously and get support to improve mental health and well-being. Register [here](#)

Welltrack Boost is a self-help app that all TU students can access for free. Through self-assessment and the use of fun and engaging tools, it will help you improve and maintain your mental health. Register [here](#).

The Towson University Counseling Center (TUCC) provides free and confidential counseling services. For more information about TUCC, please visit their website at <https://www.towson.edu/counseling/>. To make a same-day appointment or for after-hours crisis assistance, please call 410-704-2512.

We all experience emotional distress and personal difficulties as a normal part of life. As your instructor, I am not qualified to serve as your counselor. However, The Towson University Counseling Center (TUCC) provides free and confidential mental health services that are not connected to your academic record in any way. If you are experiencing mental health challenges, I strongly encourage you to take advantage of TUCC's services. For more information about TUCC, please visit their website at <https://www.towson.edu/counseling/>. To make a same-day appointment or for after-hours crisis assistance, please call 410-704-2512.

Chemistry Department Statement on Classroom Diversity and Inclusion: The students, faculty, and staff at Towson University represent a diverse and vibrant community of learners and scholars. As a community, we value the unique contributions of each individual and promote active participation in all aspects of the learning process by each community member. Your instructor supports Towson University's goal of fostering a diverse and inclusive educational

setting. Your instructor strives to create a classroom environment built upon the principles of mutual respect and support. Toward this end, all members participating in this course are expected to demonstrate respect for all other members of the class. If you feel these expectations have not been met, please speak with your instructor or the designated diversity liaison, Dr. Cindy Zeller (czeller@towson.edu).

For further information regarding the diversity and inclusion policies of Towson University, please see [Towson University's "Strategy 1: Exposure to Diversity"](#), [the Fisher College of Science and Mathematics Diversity Action Plan](#), and the [Chemistry Department Diversity Action Plan](#).

Tentative lecture schedule

Tuesdays are lectures SC 5252; Wear lab attire

Thursdays are labs SC 5331

Reading assignments will be given in class; all material is testable.

Exams will be announced one week prior. You are expected to keep up-to-date on all material presented.

<u>Week of</u>	<u>Lecture Topics</u>
Aug 28	Introduction to the course
Sept 4	Mass spectrometry/Tuning GC/MS instrument overview
Sept 11	GC/MS method development and data analysis
Sept 18	Pharmacokinetics and pharmacodynamics
Sept 25	Cannabinoids
Oct 2	Liquid/liquid and solid phase extractions <i>Reading assignments</i>
Oct 9	SPE Drug extraction Stimulants
Oct 16	Drug extraction/ Stimulants
Oct 23	HPLC
Oct 30	HPLC
Nov 6	No class on Tuesday so you can vote. Thursday HPLC

Nov 13 Opioids; (R) deadline to submit paper to me for one-time feedback

Nov 20 no class; Thanksgiving Break.

Nov 27 opioids

Dec 4 Designer drugs

Dec 12 pdf of final paper due by 3 p.m. to me through email.