FSC/CHE444 Forensic Chemical Analysis Spring Semester 2014

**********PLEASE READ THIS ENTIRE SYLLABUS**********

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Office hours: Th 1 - 3 or by appointment  Office hours: TBA
Online: http://blackboard.syr.edu

Meeting Times: Lecture Online
Lab: T 12:30 – 4:30 pm    Room: 201 LSC    Credits: 4
Prereq: CHE 116 or 119, 117 or 139
You must arrive on time for the lab sessions. If you are late, you will miss important instructions and will lose points. Students are required to attend lab and lecture.

Laboratory Manual, distributed via on-line resource or in class (check blackboard!).
Safety glasses, which must be worn at all times in the lab, will be provided.

Course Description: FSC 444 is a lecture and lab course in forensic chemistry, which can be thought of as analytical chemistry applied to the law. The lecture part of the course, delivered online, focuses on concepts and theory behind the analytical techniques, and the laboratory provides direct experience in the methods. This course will cover many of the commonly used forensic chemical analysis techniques, which include most methods used more generally for chemical analysis. The course satisfies the analytical chemistry requirement for the chemistry major.

Learning Outcomes: After completing this course, a student should

- Understand the techniques covered and the underlying strategies at a conceptual level.
- Recognize situations in which the covered techniques would apply.
- Appreciate the strengths and limitations of each of the covered techniques.
- Be able to collect data using each of the covered techniques.
- Be able to interpret data from each of the techniques and draw appropriate conclusions.
- Understand and be able to perform and interpret statistical analyses of data.
- Understand the need for calibration and the use of standards.
- Be able to plan the analysis of a given sample based on its characteristics.
- Be able to effectively report analytical results to both technical and lay audiences.

Academic Honesty: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort.
For more information and the complete policy, see http://academicintegrity.syr.edu.
In this course, students are allowed and encouraged to help each other, but all assignments turned in must be the work of the individual student and may not written by anyone else or copied from any other source, except for short quotations with proper attribution.

Help and Support Options: Professor Englich and the TAs, Leanna Kim and Craig Sherwood,
will be available for help both in person and electronically. Come during office hours, chat electronically during office hours, send email to schedule an appointment or ask questions, communicate through the journal, or just talk to us during lab.

**Absences and Make-ups:** If you are ill or must miss lab for another valid reason, contact the TAs and me immediately — in advance if at all possible.

**Preparation for Lab:** Your success in the experiments will depend very much on your pre-lab preparation. *Before* you arrive in lab, the following steps are imperative: reading the text assignment, online lectures, lab procedure, and supplied modifications; completing the prelab assignment; and thinking through the experiments step-by-step. You should complete the entire online module. Understanding what is to be done is important both for learning and for safety. The online lecture portion contains background information for the lab experiments, sometimes a week early but often in the same week. *Note that the reading assignments are listed on the calendar on the week that they are to be finished, so you should generally be doing these the week before in order to stay current.* Lab reports will generally be due in lab one week after the last lab meeting for the experiment. Any exceptions will be announced.

**Grading:** The semester grade will be divided evenly between lecture and laboratory. The lecture grade will consist of two exams (65%), online assessments (max. 7%), and a final exam (35%). Exams will be given in the first hour of the lab period. The online assessments will include quizzes and exercises interspersed in the material. The final exam will cover the entire semester. The laboratory grade will consist of reports (90%) and technique (10%). The technique grade will be based upon the student’s preparedness, cleanliness, attitude, and attention to safety.

**Disability Accommodation:** If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), [http://disabilityservices.syr.edu](http://disabilityservices.syr.edu), located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

**Safety Issues:** Safety is very important in any laboratory — please take the laboratory and its risks seriously. Knowing the risks and minimizing them is the best way to avoid accidents. Particular hazards relating to reagents or procedures will be pointed out, but all reagents must be handled with respect and all procedures done with care. **Safety goggles must be worn at all times in the lab.** Forbidden attire in the lab includes shorts, short skirts, and sandals (or any shoes that do not completely cover your feet). Your skin below the waist must be completely covered, and skin above the waist should be mostly covered. Leather shoes provide better protection than canvas shoes. Contact lenses may be worn at your own risk along with proper safety goggles that protect the eyes completely — front and all sides. Wear clothes that are not too expensive. Long hair must be tied up. You must know the locations of each piece of safety equipment in the lab, including fire extinguishers, shower, and eyewash station. You must wash your hands before you leave the lab and whenever you think you may have gotten chemicals on your hands. Eating, drinking, and smoking are prohibited in the lab. Also forbidden are pranks of any kind and any form of physical roughhousing. If you are ever in doubt about the safety of any procedure or situation, you should ask. Report any accident immediately. Do not try to hide anything out of embarrassment - you will be making the situation worse, endangering yourself and others.