

Environmental Chemistry Laboratory

CHEM 4152, CRN# 31543

Course Syllabus, Spring 2019

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| Instructor: | Dr. Kristin Dooley |
| Office: | Laney-Manion Hall 201C |
| Website: | http://faculty.uca.edu/kdooley |
| Phone: | (501) 450-5940 |
| Email: | kdooley@uca.edu |
| Office Hours: | T and R 2:45-4:00 pm W 8:00-10:00 am Other times by appointment. |
| Lab | 2:00-4:50 pm Lan 305 |
| Required Text | None, we will print protocols to use for procedures |
| Other Requirements | See below. |

Course Description Upper-division elective for chemistry majors and minors and a required course for those in the biology and chemistry tracks of the environmental science program. Uses a laboratory format emphasizing sampling, analysis, and data reduction techniques for multicomponent environmental samples.

Prerequisite A Pre- or co-requisite of CHEM 4351 (Environmental Chemistry).

Course Objectives The main goal of this course is to supplement your understanding of Environmental Chemistry through the use of analytical techniques and instrumentation that are common in environmental science testing. The student should leave the course with a basic understanding of sampling techniques and storage and handling procedures. We will focus on experiments with a local impact. Experiments will be quantitative in nature and use EPA protocols when available.

Required Course Materials **Communication** – You are responsible for material and announcements distributed through email and the website.

Eye Protection - Approved (ANSI Z.87) laboratory eye protection should be worn at all times when chemicals or glassware is being used.

Lab Notebook – You will need a bound, hardback composition style notebook that has non-removable numbered pages.

Calculator – you need to bring a trusty calculator to each lab meeting.

Basic Office-type Computer Software Access – You will need a software package that allows for word-processing and generating graphs of data.

Appropriate Attire

Although in general attire is dictated by lab safety measures, there will be times that we will collect samples outside of the lab. You should always plan ahead and have appropriate clothes/shoes as dictated by the conditions.

In lab, you are expected to wear closed-toed shoes. Shoes should cover the entire top of the foot and have hard-soles that are non-absorbent. Hair should never be worn loose. You should tie back as much as is possible to minimize accidents. Also in the lab, pants or skirts should cover the knee when you sit. If it does not, you should bring and wear a lab coat. Students may also prefer to wear a lab coat at every lab meeting as it offers added protection for you and your clothes.

You should make plans to wear outside appropriate clothing on days we will collect samples. Depending on the weather, you may want boots, hats, sunscreen, etc. Chemical safety is not as much of a concern here as is comfort and physical safety. Wearing appropriate clothing and footwear will help keep you on your feet if the terrain is slippery or muddy.

Grading

Your grade in this lab will be based on your grades on each of the lab reports you turn in throughout the semester. Each lab report will carry the same weight for your overall grade calculation. The number of labs that we complete will vary depending on the length of each procedure.

Lab Safety

You must complete the lab safety agreement BEFORE you will be allowed to work in the lab.

You must follow all lab safety guidelines, or you will be asked to leave the lab and credit will not be given for the work missed.

General Lab Instructions

Lab experiments will be carried out either in groups or individually depending on the complexity of the experiment.

There will be times when sample preparation or analysis requires strict adherence to a timeline. Leaving a sample for too long may ruin the analysis, and some samples have short use-by dates. For this reason, you will need to be willing to complete a lab experiment outside of the scheduled lab times. You will be able to access your samples 8:00 am to 4:00 pm on weekdays. You will need to schedule a time with me so that I can supervise your time in the lab.

Lab Reports will be due one week after the experiment is completed. You will use the following headings to organize your report: Abstract, Introduction, Experimental, Data and Results, and Conclusions. If you feel that you need to use more headings to organize your work that is acceptable. These are not meant to be literature reviews or explanations of the inner-workings of the instrumentation. The majority of the report should focus on the organization and handling of the data points, and the ways the raw data was manipulated to arrive at your results. Unless otherwise stated, all lab reports will be individual efforts regardless of whether the experiment was done individually or as a group. A copy of the notebook pages for each experiment should be attached to each report.

Lab notebooks should include enough information for someone to repeat the work you did in the lab. A short objective statement will suffice to explain the purpose of the experiment. Keep written records of each step you follow, file names, sample labels, sampling sites, etc. Mistakes, spills, and errors should also be noted. Bad data points are often just as important as usable ones. When working as a group, each member should keep a copy of the lab notebook. If we do field work, one student per group will be the designated stenographer. After the samples are collected a copy of the stenographer's work should be attached to each group member's notebook. The job of stenographer should rotate among the group members.

University Policies

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| Americans with Disabilities Act | The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Office of Disability Support Services, 450-3613. |
| Academic Integrity | The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy. |
| Course Evaluations | Student evaluations of a course and its professor are a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge. Students may evaluate courses they are taking starting on the Monday of the twelfth week of instruction through the end of finals week by logging in to myUCA and clicking on the Evals button on the top right. |
| Emergency Procedures | An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at http://uca.edu/mysafety/bep/ . Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes. |
| Title IX Disclosure | If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs and the obligation to conduct an investigation will depend on those specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: https://uca.edu/titleix . *Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity. |
| Other Policies | Students are encouraged to familiarize themselves with all policies included in the Student Handbook, particularly the Sexual Harassment Policy, and all Academic Policies. |