

Chem 397 Special Topics, Summer 2015

COURSE DESCRIPTION: Research Experiences for Undergraduates, 1 semester hour (combination of lectures, seminars, field trips, workshops, labs, etc. for 40 hours per week)

CLASS TIME AND LOCATION: Lecture/Seminar: F 1:00pm-3:00pm Sci #127
Lab: Mon-Fri assigned by research group adviser

INSTRUCTOR: Dr. Ben Jang; SCI 335, x5383, ben.jang@tamuc.edu

OFFICE HOUR: MTWR: 1:30-2:30pm or by appointment. Messages can be left in the mailbox in the Department office.

GOALS OF THE COURSE: Introduce the students into undergraduate research, including basic skills in literature search, computer software, report preparation, presentation preparation and presentation delivery. Students are to become an expert in setting up and operation of specific apparatus and/or instrumentation used by the research groups which they are assigned to. During the course, the students are to present their research progress and summarize their research finding in writing following the format required by each group. Presentation and writing workshops and field trips are to enhance student's skill, knowledge and interest in undergraduate research in chemistry. In addition, research ethics training will be provided to students to be a responsible individual for his action inside and outside of the laboratory.

COURSE REQUIREMENTS, ASSIGNMENTS AND GRADING:

Grading Procedure:

Presentations: 40%

Reports: 40%

Attendance: 20%

A: >85.0; **B:** 75.0 ~ 84.9; **C:** 65.0 ~ 74.9; **D:** 55.0 ~64.9; **F:** <55.0

Student Learning Outcomes:

At the end of this course students should demonstrate the skills and knowledge in the following areas:

1. Effective use of various literature search methods and database.
2. Principles of academic integrity and intellectual ownership.
3. Comprehensive understanding of safety issues related to the selected project.
4. Training on extensive procedures for various experiments
5. Critical analysis of literature and data.

6. Learn to effectively and appropriately communicate scientific findings to the audience
7. Learn and apply writing skills to prepare scientific reports
8. Applying scientific methods to solving education-related problems.
9. Comprehensive understanding of various instrumentations related to the research project.

Attendance Policy:

The Department of Chemistry adheres to the attendance policy set by the University as stated in the most current Catalog. The attendance record is kept by spot check. Being more than 5 minutes late or missing a daily assignment is equivalent to missing a lecture. Excessive absence is defined as missing more than 10% of the lectures without excusable reasons. In addition, **according to the TAMU-Commerce Procedure A13.02, if a student has excessive absences, the instructor may drop the student from the course.** The instructor will only excuse an absence if the student provides, with appropriate documents an excusable reason allowed by the TAMU-Commerce Procedure A13.02.

Student Conduct Policy:

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment (see Student's Guidebook, Policies and Procedures, Conduct, TAMU-Commerce Procedure 13.02.99.R0.06). Any student engaging in disruptive behavior will be dismissed from class on the first offence. A second offence may constitute dismissal from the course with a failing grade.

Cheating and other Breaches of Academic Conduct:

Academic cheating, plagiarism, and other forms of academic misconduct may result in removal of the student from class with a failing grade or may in extreme cases result in suspension or expulsion from the University as described in the Code of Student Conduct section of the Student's Guidebook A&M-Commerce Procedure 13.99.99.R0.10.

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact: Office of Student Disability Resources and Services, Texas A&M University-Commerce, Gee Library, Room 132, Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148, StudentDisabilityServices@tamuc.edu

Dishonesty:

The reports must be written by the student. Any instance of cheating will result in a grade of “F” and result in dismissal from the course. Freedom to discuss problems does not mean that you can copy other peoples work. You must develop individual reports of your own. Blatant plagiarism will result in a grade of “F” for the course. Proven offenders will be dismissed from the research.

TENTATIVE SCHEDULE

WK 1: Literature Review & Lab safety training

WK 2-3: Lab Experiment Training

WK 3-9 Project work, data analysis, summary of research and periodic reports submission;

Instrumentation training could include NMR, MS, FT-IR, UV, TGA, DSC, Chemisorption, surface area/pore size distribution, etc.

WK 10: Final Report