

CHEM 595 - Research Lit & Techniques, Summer 2015

Catalog Description: Three semester hours. Students learn about current research by studying assigned articles in primary literature and preparing a scholarly review of primary literature or doing a smaller research project.

Class Time and Location: Lecture/discussion — W 10:00am-4:00pm
Laboratory — as needed

Instructor: Dr. Ben Jang; Sci #335, x5383, ben.jang@tamuc.edu

Office Hour: TW: 9:00-10:00am & 4:00-5:00pm. Messages can be left in the mailbox in the Department office.

Goals of the Course: The course will facilitate students to gain an advanced training on research literature and techniques of selected topic in the chemical sciences. Students are to critically review literature, conduct laboratory research if needed, and/or prepare scientific manuscripts or summary reports. Each student works directly with the instructor to review and select specific topic as the project, such as in the areas of chemistry teaching and learning, catalyst synthesis and characterization, biodiesel synthesis, oil production from algae, selective hydrogenation, etc. The project is to demonstrate the mastery knowledge and skills of students in recent chemistry teaching/learning theories, chemical theories and instrumentation, applications of different research techniques, etc. The class will be assessed by the completion of assignments, presentations, progress reports and final report.

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. Effective screening and organization of large number of literature.
3. Principles of academic integrity and intellectual ownership.
4. Critical analysis of literature and data.
5. Applying scientific methods to solving education-related problems.
6. Comparison of different aspects of conflicting theories and findings.

7. The requirements of professional scientific reports and journal publication and the manuscript preparation.
8. Comprehensive understanding of various instrumentations related to the selected project.
9. Mastery of research techniques related to the selected project.
10. Comprehensive understanding of safety issues related to the selected project.

Course Requirements and Assignments:

Literature Tools:

Web of Knowledge
Advanced Search (ACS Publications)
Science Direct
Etc.

Assignments: Assignments will normally be given in the beginning of each week. Each assignment is due normally a week later, but could be longer depending on the nature of assignments.

Grading Procedure:

Assignments and Weekly Reports: 50%
Peer reviews: 20%
Final Report: 30%

A: ≥ 90.0 ; **B:** 80.0 ~ 89.9; **C:** 70.0 ~ 79.9; **D:** 60.0 ~ 69.9; **F:** < 60.0

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 Course introduction and discussion to determine project areas
- WK 2 Literature search to finalize the general project direction
- WK 3 Literature search and analysis; submit the weekly report on the summary of the literature search and analysis; and finalize the project specific direction
- WK 4 Literature search and analysis; submit the weekly report on the summary of the literature search and analysis; and narrow down the majority of literature coverage
- WK 5 Weekly report with the outline of the final report
- WK 6 Weekly report with additional literature search and analysis
- WK 7 Submission of the draft final report for peer review
- WK 8 Review of draft final reports and additional literature search and analysis

WK 9 Revision based on peer review comments, instructor's comments and additional literature search and analysis

WK 10 Final report due