

CHEM 418 – Undergrad Research Course Information Summer 2023

LAB TIME AND LOCATION: Mon/Tues/Wed/Thurs/Fri; SCI # TBD

INSTRUCTOR: Dr. Stephen Starnes, SCI 339 Phone: 5389, Stephen.Starnes@tamuc.edu

Office Hours: M-F: 11:00 am – 12:00 pm or by appointment

COURSE DESCRIPTION: The course will provide students with the knowledge and skills needed to conduct laboratory research, design research experiments, analyze research data, and write research reports. Data analysis and report writing skills are important aspects for interpreting the laboratory research and producing technically written, scientific reports. Over the duration of the course you will be expected to apply a range of instrumental and data analysis techniques and we will develop report writing skills all of which are needed to interpret laboratory research and produce technical scientific reports. You will become familiar with a variety of experimental techniques and the use of SciFinder, Web of Knowledge and Endnote for searching and collecting scientific literature related to your project and developing a bibliography. You will also be required to develop your critical reading skills of research papers and develop your technical writing skills. The class will be assessed by the completion of weekly research assignments, the submission of bi-weekly written reports, a midterm and end of semester research report, and research presentations. The class is 1-3 semester hours.

STUDENT LEARNING OUTCOMES: Students will gain the necessary skills involved in conducting chemistry-related research and computational scientific research. The skills will include “wet” chemistry techniques, computational chemistry, oral presentations, report writing, critical reading of literature, chemical database searching and review of the literature. During the course you will develop the skills and material needed for a technical research report. The database searching portion of the course will familiarize you with the software tools of Web of Science, SciFinder, and Endnote. The instrumental analysis portion of the course may cover nuclear magnetic resonance spectroscopy (NMR), infrared spectroscopy (IR), ultra-violet and visible (UV-VIS) spectroscopy, polarimetry, fluorescence spectroscopy, circular dichroism spectroscopy, mass spectrometry, etc. The computational portion of the course will use the Spartan and Gaussian software package on the computer cluster for exploring a range of chemical properties. Students will be required to complete weekly research assignments, to regularly present their research to the group and write research progress reports.

COURSE REQUIREMENTS, ASSIGNMENTS AND GRADING:

Weekly research progress: (50%).

Oral presentation: based on your lab and literature research (15%)

Midterm research report: based on literature review, research results, and bibliography (15%)

Final research report: introduction to a scientific problem, literature review, and research results. (20%)

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

A grade of B or higher is necessary to make satisfactory progress towards a Thesis

TECHNOLOGY REQUIREMENTS

LMS – myLeo Online – D2L Brightspace

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements.

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here: <https://community.brightspace.com/support/s/contactsupport>

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](http://www.albion.com/netiquette/corerules.html)
<http://www.albion.com/netiquette/corerules.html>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).
<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>
<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)
<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>
[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)
<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

ADA Statement

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 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)
<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department