



EAST TEXAS A&M
UNIVERSITY

CHEM 550-01W: Advanced Methods in Chemical Research

LOCATION: Web-based online course.

INSTRUCTOR: Dr. Laurence Angel, SCI 341

Phone: 5391, Laurence.Angel@tamuc.edu (email is the preferred form of communication)

OFFICE HOURS: Mon - Fri: 4:00 – 5:00pm (or by appointment)

COURSE DESCRIPTION: The course will provide students with the knowledge and skills to advance their technical reading and writing skills by developing a report over the semester that describes an experimental research area. The report will include an introduction including a literature review of the research area, detailed description of the protocol, and presentation and discussion of representative results. In this endeavor, the student will develop critical reading skills to understand research articles and develop their own technical writing skills. The use of databases and online research tools such as SciFinder, Web of Science and Endnote for searching and collecting scientific literature will be required. The student will also present their research outcomes using an online 10-min PowerPoint presentation at the end of the semester. These skills are important aspects for recording and disseminating scientific knowledge.

STUDENT LEARNING OUTCOMES: Outcomes will include completion of chemical database searching, critical reading, technical writing, and an oral presentation. Students will be required to complete the assignments and present their report progress to the instructor through quarterly submissions of their midterm reports. At the end of the semester a final comprehensive research report that includes all sections developed during the semester and a 10-min PowerPoint presentation are due. The class is 3 semester hours.

COURSE REQUIREMENTS, ASSIGNMENTS AND GRADING

Midterm reports: introduction to a scientific research area, literature review, representative research results, discussion of results. (15% each or 60% total)

PowerPoint presentation: presentation of your research to instructor and class (20%)

Final research report: comprehensive report of your research results including an abstract, introduction with literature review, experimental methods, representative results, discussion and bibliography (20%)

A: >90.0; **B:** 80.0 - 90.0; **C:** 70.0 – 89.9; **D:** 60.0 – 69.9; **F:** <60.0

Course Schedule

Week	Subject	4 Midterm Reports Due
1	Introduction to Advanced Research Techniques	
2	Laboratory Research Techniques	
3	Chemical Database Searching and Critical Article Reading	
4	Presentation of Introduction and Scientific Writing First Midterm Report due by Monday 9am	1
5	Protocols and Experimental Research Techniques	
6	Advanced Laboratory Techniques	
7	Presentation of Experimental Section and Scientific Writing Second Midterm Report due by Monday 9am	2
8	Representative Results	
9	Development of laboratory Research	Spring Break
10	Development of Scientific Writing	
11	Presentation of Experimental Results Section Third Midterm Report due by Monday 9am	3
12	Development of Discussion of Protocol	
13	Development of Discussion of Representative Results	
14	Presentation of Discussion of Protocol and Representative Results Fourth Midterm Report due by Monday, 9am.	4
15	Development of abstract and final report	
16	Development of PowerPoint presentation	
17	Final report due by Monday 9am Oral Presentations due by Wednesday 12:00pm	Final Report Due PowerPoint Presentation

FIRST MIDTERM REPORT: Due Monday, 9:00 am in the 4th week of classes

The first report will focus on the “Introduction” to your research report.

Use the “Introduction” in the JoVE articles on the course site as a guide. Do not include an Abstract or any other section in the first report because these will be developed later in the course.

The grade for the report will be based on how descriptive and informative the report is. It should be concisely written in a scientific technical language. Format chemical names or chemical formula appropriately with subscript and superscripts. On first use of a chemical name you should describe it completely and in brackets give an abbreviation, if appropriate, to use in future uses of the chemical name. I would like to be informed and rewarded by reading the report and feel like I have learnt something new. This report will help the student to develop their critical reading skills for understanding research articles and develop their own technical writing skills. The report will be checked for plagiarism so make sure it is originally written.

The format of the “Introduction” should be single-spaced, **2-page limit in 12 font size Arial font**. The report should include **10-20 references** to articles that you have collected using **SciFinder** or **Web of Science** and **saved in EndNote** and used to explain the background and current developments in your specific research area. The **references should be cited in the report** where their information was used

in the ACS style using EndNote. Following the 2-page report, EndNote will list the references and these should be in the same font, single-spaced as the rest of the report in the ACS style.

Once you have **EndNote set-up** on your computer and added to your **Word program** you can **download articles to EndNote from SciFinder** by choosing the “**Download**” and “**.ris**” format. This will automatically download the article(s) to your EndNote. During the process, you may be asked to **login to EndNote** and should at the end receive a message that citations have been **saved to EndNote**. *It is your responsibility to set-up SciFinder and EndNote with your Word program and to have them working together properly. Read the information in the Databases on the library site <https://tamuc.libguides.com/chemistry/introduction>. The grade associated with your first midterm report will reflect your proper use of SciFinder, EndNote and the citation in Word of the references.*

You should be able to follow the instructions for setting up SciFinder or Web of Science and EndNote available on the library site. Librarians are also available to help you with your research. See the following link for contact information.

<https://www.tamuc.edu/research-help-and-faculty-support/>

Introduction Grading Rubric

Name _____

	Exceeds Standards	Meets Standards	Below Standards	Fails Standards
Completeness of background and current research in chosen area (25%)	Superior completeness; student's introduction of the article was extraordinarily thorough (25)	Complete; student's introduction of the article covered mostly all aspects (20)	Mostly complete but with gaps in some areas; student's introduction was missing some key points (18)	Incomplete in most respects (15)
Focus and detail on the research area (25%)	Research area was described in extraordinarily specific detail (25)	Research area was described in complete detail (20)	Research area description was mostly complete but there were gaps (18)	Research area description was inadequate (15)

Technical writing quality (25%)	Introduction was extraordinarily clear and insightful (25)	Introduction was clear and effective (20)	Introduction was unfocused (18)	Introduction failed to communicate in an adequate manner (15)
Format of report followed guidelines, with SciFinder and EndNote used appropriately to include citations (25%)	Report was extraordinarily formatted following the guidelines. (25)	Report was formatted following the guidelines. (20)	Report was mainly formatted following the guidelines. (18)	Report was poorly formatted not following the guidelines. (15)

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

Coronavirus Protection Measures

A&M-Commerce suggests the use of face-coverings in all instructional and research classrooms/laboratories. Exceptions may be made by faculty where warranted. Faculty have management over their classrooms. Students should not attend class when ill or after exposure to anyone with a communicable illness. Communicate such instances directly with your instructor. Faculty will work to support the student getting access to missed content or completing missed assignments.

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>

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

Velma K Waters 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.

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

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 at 903-886-5868 or 9-1-1.

AI Use Policy

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

TECHNOLOGY REQUIREMENTS**LMS**

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>