CHEM 2325-01E (Organic Chemistry II) Course Syllabus, Spring Semester, 2024

MWF 11:00 am-11:50 am, Location: STC127 (Science Building)
(This is a face-to-face course)

INSTRUCTOR INFORMATION

Instructor: Allan D. Headley
Office: Science Building, 337
Office Hours: MWF, 10:00 a.m. – 11:00 noon; TR, 1:30 p.m. to 3:30 p.m.
Telephone: (903) 468 – 8106
E-Mail: allan.headley@tamuc.edu (preferred mode of communication)

COURSE INFORMATION

Your basic text is: Organic Chemistry, Concepts and Applications" 1st Edition, Headley, A. D., John Wiley & Sons; ISBN-13: 9781119504672. The Student Companion website for the textbook is: http://bcs.wiley.com/he-bcs/Books?action=index&bcsId=11621&itemId=1119504589. A model set is suggested and can be purchased at https://duluthlabs.com/

Course Description

In this course, which is a continuation of the first semester of Organic Chemistry I, additional reaction types will be studied and applied to the synthesis of different target organic molecules. For each type of reaction, the mechanism involved will be discussed and used to rationalize the various outcomes of different reactions. In addition, various spectroscopic techniques will be covered in this course, but the basics are covered extensively in lab. A letter grade earned in this course not only reflects the student's knowledge of organic chemistry, but also reflects the student's ability to solve scientific problems based on available information and to become a better scientist.
Prerequisite: CHEM 2323, CHEM 1412 with grade of "C" or better or consent of the instructor.
Corequisite: CHEM 202. Note: Credit will not be given for both CHEM 201 and 2323.

Student Learning Outcomes

1. Students should be able to utilize different reactions and strategies to synthesize various target molecules.
2. Students should be able to develop successful strategies for the synthesis of large organic compounds from smaller ones.
3. Students should be able to apply the basic concepts of organic chemistry that are discussed to mechanistic and synthetic organic chemistry problems.
4. This course is designed to develop and improve the student's ability to think critically and analytically about various problems.
5. Students' ability to think critically and solve problems should be improved.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

It is expected that students will have a basic knowledge of the internet and how to interface with D2L Brightspace, which is our learning management system (LMS). In addition, students must have the ability to scan written work and convert it to a pdf format for upload to D2L. There are many free applications, such as Camscanner, that are available that can be downloaded to smart phones, which will allow students to scan a document and convert it to a pdf format for upload.

Instructional Methods

This is a face-to-face course, and we will meet as shown in the university schedule of classes. Each week throughout the course, there will be a face-to-face quiz or a midterm exam and students are expected to be present to take these quizzes and exams. The format of the quizzes and exams will be a combination of multiple-choice questions and written responses. The final exam will be an ACS multiple-choice exam.

Student Responsibilities or Tips for Success in the Course

It is assumed that the good student will be able to work all the problems in the textbook (even the study problems within each chapter). You must work lots of problems; in addition, ensure that you work through the tutorial questions of CHEM 202, which is the corequisite for this course, and understand the concept of each question. The textbook has a student companion website (http://bcs.wiley.com/he-bcs/Books?action=index&bcsId=11621&itemId=1119504589) which has a number of different resource material to assists students better understand and apply the concepts of organic chemistry. It is not a good idea to try to memorize solutions to problems, since identical problems will not be used again. You should always critically analyze your work to ensure that you have applied reasonable steps to deduce your solution. Also, ask yourself how a problem might be rearranged as a possible test item. Be precise with your answers. You will find this helpful in preparing for exams. Since there is typically more than one possible solution to a problem, discuss possible solutions with other students. Be precise with your answers. On your exams, you will be graded on what you write, not what you meant to write, or thought you wrote. If your responses to different problems are difficult for your classmates to understand, then your responses to questions on the exam will be very difficult to grade.

GRADING

Your course grade will be based on quizzes, midterm exams, and a final exam. Quizzes are worth 20%; each course midterm exam is worth 100 points (20% of your final grade), and a course comprehensive final American Chemical Society (ACS) final exam is worth 20% of your final grade. The key and score distribution will be posted on D2L. Each midterm exam is cumulative, but will emphasize the material covered since the previous midterm exam.

First Exam: Week of February 12, 2024
Second Exam: Week of March 18, 2024
Third Exam: Week of April 15, 2024
Final Exam: Week of May 6, 2024

Assessments

Your grade will be computed based on the class average, for example if the class average is around 77% with a standard deviation of approximately 15 the grade cutoffs is: A = 90%-100%;

B = 80%-89%; C = 70%-79%; D = 60%-69%; F = 59% or below. If the class average is lower, the cutoffs will be adjusted, and students informed of the grade cutoffs after each exam and before the final exam. Your grade status in the class at any time will be available in D2L.

Course Specific Procedures/Policies

NO make-up exams will be offered. If you miss a midterm exam for a reason beyond your control, you may request in writing to be excused from that exam providing you have valid written documentation supporting your reason.

You are encouraged to carefully review your graded exams. If you think a grading error was made, you can request that the exam be regraded, but ONLY if the following procedure is followed:

(1) Write a very concise note explaining what you think the error in grading was. This must be specific as to the mistake, typically no more than two sentences.

(2) Return your request, along with the graded exam, to the instructor NO LATER THAN ONE WEEK after the graded exam was returned.

The entire exam will be regraded and results posted in D2L approximately one week after the request. You are allowed only one regrade for each midterm exam. There are no regrades for the final exam.

TENTATIVE COURSE OUTLINE / CALENDAR

Week of	TOPICS TO BE COVERED
Jan 8	Review and applications of elimination reactions – synthesis (Chapter 12)
Jan 15	Nucleophilic substitution reactions; bimolecular substitution reaction mechanism (S_N2 mechanism); applications of bimolecular substitution reactions. (Chapter 15)
Jan 22	Unimolecular substitution reaction mechanism (S_N1 mechanism); applications of unimolecular substitution reactions (Chapter 15)
Jan 29	Types of alkanes and alkyl halides; chlorination of alkanes; bromination of alkanes; reactions of alkyl halides (Chapter 14)
Feb 5	Substitution reactions involving alcohols (Chapter 14)
Feb 12	**Exam#1** Applications of nucleophilic substitution reactions – synthesis (Chapter 14)
Feb 19	Mechanism for acyl substitution; substitution reactions involving acid chlorides; substitution reactions involving anhydrides; substitution reactions involving esters; substitution reactions involving amides; substitution reactions involving carboxylic acids (Chapter 16)
Feb 26	Structure and properties of benzene; nomenclature of substituted benzene; stability of benzene; features of aromatic compounds; electrophilic aromatic substitution reactions of benzene. (Chapter 17)
Mar 4	Electrophilic aromatic substitution reactions of disubstituted benzene; electrophilic substitution reactions of polycyclic aromatic compounds (Chapter 17)
Mar 11	**Spring break**
Mar 18	**Exam#2** Electrophilic substitution reactions of pyrrole; electrophilic substitution reactions of pyridine (Chapter 17) Nucleophilic aromatic substitution of substituted benzenes; nucleophilic aromatic substitution of substituted of pyridine (Chapter 17)

The *syllabus/schedule are subject to change.*

Mar 25	Cycloaddition reactions; electrocyclic reactions; sigmatropic reactions. (Chapter 18)
Apr 1	Non-transition metals in coupling Reactions; palladium catalyzed coupling reactions. (Chapter 19)
Apr 8	Cationic polymerization of alkenes; anionic polymerization of alkenes; free radical polymerization of alkenes (Chapter 20)
Apr 15	**Exam#3** Acid-Base Properties of amino Acids; synthesis of amino acids; reactions of amino acids; structure and properties of peptides; peptide synthesis; primary structure of proteins; secondary structure of proteins (Chapter 20)
Apr 22	Monosaccharides; disaccharides and polysaccharides; N-glycosides
Apr 29	Lipids; properties and reactions of waxes; properties and reactions of simple lipids; properties and reactions of phospholipids; complex Lipids. (Chapter 20)
May 6	**Final Exam***

* Each midterm exam is cumulative but will emphasize the material covered after the previous midterm exam. Check examination schedule for specific date and time of final examination: http://appsprod.tamuc.edu/Schedule/Schedule.aspx
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Course withdrawal information: https://www.tamuc.edu/admissions/registrar/documents/2020-2021%20Academic%20Calendar.pdf

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

I will communicate mostly through myLeo Online Learning Management System, D2L Brightspace with students. As a result, make sure that you have a way to get alerts of

announcements that are posted on D2L. I will also communicate with students via e-mail, so please make sure to check your e-mail daily for important announcements and information about the course.

Technical Support

If you are having technical difficulty with any part of D2L 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

Interaction with Instructor Statement

The preferred mode of communication is via e-mail and if you have any questions or are having difficulties with the course material, please contact your Instructor; response time is typically within one day.

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

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

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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
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.

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.

A&M-Commerce Supports Students' Mental Health
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

Additional Information

The *syllabus/schedule are subject to change.*

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.

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