Chemistry 1307: Survey of Organic and Biochemistry

Course Syllabus: Spring 2025

INSTRUCTOR INFORMATION

Instructor: Ashley Gusukuma
Office Location: Caddo Mills High School, Room 206
Office Hours: T, F 3:00- 4:15 pm; MTWF: 7:45 am-8:15 am or by appointment
Office Phone: (903) 527-3164; (903) 527-3164 ext 6206
Office Fax: (903) 527-4772
University Email Address: agusukuma@leomail.tamuc.edu
Preferred Form of Communication: email
Communication Response Time: < 24 weekday hours

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required: Introduction to General, Organic, and Biochemistry, 11th Edition, ISBN: 9781285869759; by Bettelheim, Brown, Campbell, Farrell.

The *syllabus/schedule are subject to change.*

Course Description

CHEM 1307) Survey of Organic and Biochemistry: Three semester credit hours (lecture only). This course is designed for students majoring in Agricultural Science, Wildlife and Conservation Science, the Environmental Sciences, Nursing and non-majors seeking an understanding of organic chemistry and biochemistry and their applications in human health, agriculture and the environment. Students are introduced to the structure of organic compounds, the naming of organic compounds, the stereochemistry (the shapes of organic compounds in 3-dimensions), and the basic reactions of organic compounds. The course also provides an introduction to amino acids, peptides, proteins, carbohydrates, lipids, nucleic acids and metabolism. The course will prepare students for further study in organic and biochemistry courses.

Student Learning Outcomes

1. Students will be able to analyze, evaluate, or solve problems when given a set of circumstances, data, texts, or art.
2. Exam questions will be developed to evaluate a student's critical thinking skills. The students in the course will be required to analyze, evaluate, or solve problems when given a set of circumstances or data.
3. Exam questions will be developed to evaluate a student's ability to understand and utilize mathematical functions and empirical principles and processes.
4. Student communication in the class will be clear, purposeful, and make appropriate use of evidence, data and technology as applicable.
5. Students will be able to engage with peers in a way that demonstrates their understanding of relevant course theories and concepts.
6. At the completion of the course, students will understand the structures of organic and biochemical compounds, how to name these compounds, their basic physical properties and the factors that affect their physical properties.
7. Students will also know basic reactions of organic and biochemical compounds, including basic metabolic pathways.
8. Communications-- In written, oral, and/or visual communication, A&M-Commerce students will communicate in a manner appropriate to audience and occasion, with an evident message and organizational structure.
9. Empirical and Quantitative Skills-- Students will be able to interpret, test and demonstrate principles revealed in empirical data and/or observable facts.
10. Teamwork-- Students will be able to work together toward a shared purpose relevant to the course or discipline with a sense of shared responsibility for meeting that purpose.

Prerequisite: Math 1314 or Math 1324 or Math 179; CHEM 1305

COURSE REQUIREMENTS

Online Vs. Face to Face

In the event face to face meetings are not possible all students will be responsible for attending our live sessions online. Attendance will be taken.

Minimal Technical Skills Needed

Students must be able to use Microsoft office, PowerPoint, D2L, and Google Classroom.

Instructional Methods

This course is mainly lecture oriented and will focus on important chemistry concepts but will not serve as a substitute for reading the textbook. The textbook is a more detailed presentation with more extensive examples and problem sets. You are expected to read all handouts and to allot adequate time to study the material on your own. If you miss a lecture, you are still responsible for that day's material-read the chapter, get notes from someone in class, and see the instructor for any clarification. If you have difficulty with the material feel free to see the instructor as soon as you can for advice on how best to improve your understanding of the material. It is recommended that you remain active in our online classroom as well.

Student Responsibilities or Tips for Success in the Course

1. Read the chapter before class.
    - ***Read the chapter we are covering when it is assigned.*** This helps you in at least two ways: (1) it exposes you to the material before the lecture, making it easier for you to understand the lecture or supplemental material and thus get more out of it; and (2) it prepares you to complete the homework assignment.
2. Attend all lectures and problem sessions.
3. Take good class notes.
4. Ask questions in the class if the material is not understood or ask after the class.
5. Correct ALL quizzes and exams & review them!!!
6. Work all of the in-text problems.
7. Work ALL of the chapters end problems.
8. Study consistently!!
9. Use supplemental material questions (online classroom, other textbooks, etc.)
10. Use flash cards.
11. Use a study group (3-5 people).
12. Take advantage of the instructor's office hours.
13. Take notes as you read the chapters
14. Summarize your lecture notes.
15. Complete all assignments, both in person and online.
16. Get a tutor.

The *syllabus/schedule are subject to change.*

Communication: If the instructor needs to contact an individual student, it will be via the student's email account. Students should check email frequently, especially after an absence. Email is the best, easiest and fastest way to communicate with me. Remind 101 is also an option.

Student Conduct Policy: In order to create a "learning environment" free of disruption, you MUST TURN OFF your cell phones, MP3 players, PDA's, Pagers, and any other electronic devices before entering the class. All the students enrolled at the university shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment (this includes online classes). (See current Student Guidebook). If the student fails to comply with the code of conduct and is disrespectful, disruptive to the instructor or the students of the class, the instructor reserves the right to dismiss the student from the class on the first offense. A second offense may constitute dismissal from the course with a failing grade. A & M-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 expression will be maintained.

GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% or Below

*The instructor reserves the right to assign extra credit at her discretion, but it will not exceed 10% of a student's final score.

Assessments

The start of the semester is January 13th. The last class day is May 2nd. Finals week is May 5-9.

Exam 1: Week of February 10th
Exam 2: Week of march 3rd
Exam 3: Week of March 31st
Final Examinations: TBD, Week of May 5th

The *syllabus/schedule are subject to change.*

Your course grade will be based on your exams, homework, and quizzes. Each course exam is 20% of your final grade. Homework will be 15% and the average of your quizzes will be worth 15%. A comprehensive final exam is worth 10% of your final grade.

Make-Up Exams: Make-Up Exams: NONE. No Makeup exams will be offered. NO MAKE-UP EXAMS WILL BE GIVEN. Exams may be rescheduled, without penalty, only when arrangements have been made in advance of the testing date. Please come to me within the first week of class if they have conflicts with the exam dates. Make-up exams will only be given in the case of verifiable medical or legal emergencies. Verifiable means that written documentation is provided (e.g., signed doctors' notes, court appearance tickets, newspaper obituaries). T**he final decision concerning make-up exams rests with me, the instructor.** If no valid excuse is presented your exam grade is a zero. Exams are multiple-choice and short answers. You are responsible for all lecture/supplemental videos and reading materials. The exams are not open notes or textbooks and should be taken individually. Your final will replace a missed exam grade if necessary.

Make up Quizzes: NONE. There are NO make-up quizzes. There will be weekly quizzes covering the reading assignment and lecture material for the week.

Homework late policy: There will be mandatory online and paper-based homework, which needs to be completed by the due time to receive grades. There will be homework for each chapter.

Extra Credit: Extra credit opportunities may be offered per instructor discretion not to exceed 10% of the maximum course grade. Any extra credit assignments will be the responsibility of the student to complete outside the course and submit on time. Any late submissions will not be accepted. This semester a group project will be offered to assess communication and teamwork skills.

Suggested Additional Chapter Problems:
Chapter 10: 12, 15, 17, 24, 27, 29, 30, 32, 38, 44, 47.
Chapter 11: 11, 14, 15, 21, 28, 29, 35, 36, 45, 48, 50, 51, 52, 55.
Chapter 12: 13, 14, 19, 22, 24, 29, 40, 41, 45.
Chapter 13: 2, 3, 4, 5, 10, 14, 15, 19, 21, 32.
Chapter 14: 10, 11, 12, 16, 20, 23, 26, 33, 38, 48.
Chapter 15: 8, 9, 13, 16, 22, 23, 31, 35.
Chapter 16: 11, 13, 15, 18, 25, 30, 32, 47, 52, 54.
Chapter 17: 13, 14, 17, 24, 28, 31, 36, 40, 49, 57, 64.
Chapter 18: 6, 7, 17, 18, 25, 27, 29, 34, 41, 42, 44.
Chapter 19: 4, 11, 13, 41,42, 43, 44.
Chapter 20: 15, 18, 20, 21, 23, 34, 44, 64.
Chapter 21: 4, 10, 14, 43, 70, 79.
Chapter 22: 9, 10, 27, 30, 42, 50, 52, 56, 69, 92.

The *syllabus/schedule are subject to change.*

TOPICS TO BE COVERED *The syllabus/schedule are subject to change*

Exam #1

- Introductions, definition of organic chemistry
- Structural formulas, functional groups
- Functional groups, alkanes, isomers
- Nomenclature of alkanes cycloalkanes
- Cycloalkanes and conformations
- Alkanes: properties & reactions
- Alkenes: structure & nomenclature
- Alkenes: properties & reactions

Exam #2

- Alkenes: reactions
- Aromatic compounds: structure & nomenclature
- Aromatic compounds: reactions
- Alcohols: structure and physical properties
- Alcohols: reactions; ethers
- Thiols, stereochemistry
- Stereochemistry
- Amines: nomenclature & physical properties
- Amines: reactions

Exam #3

- Aldehydes & ketones: nomenclature & properties
- Aldehydes & ketones: reactions
- Carboxylic acids: properties and reactions
- Carboxylic acid derivatives: structure & reactions
- Carbohydrates: structure, nomenclature
- Carbohydrates: reactions
- Lipids: structure, properties & reactions

Final Exam: COMPREHENSIVE

- Lipids: role in biology
- Proteins: composition, structure & reactions
- Proteins: structure & conformations

General Advice Regarding Problems

It is assumed that a good student will be able to work through all the problems in the textbook (even the study problems in each chapter) even though only some may have been suggested. You must work on lots of problems, even from other textbooks and study guides to be sure you understand and can use the concepts studied. It is not a good idea to try to memorize solutions to problems, since identical problems will not be used again. You also should determine ways to check the answer to a problem you have solved by application of common sense. Also, ask yourself how a problem might be rearranged as a possible test item. You will find this helpful in preparing for exams. Compare your answers with other students. Remember that there are typically more than one possible solution to a problem! 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 explanations do not make sense to your classmate, then they probably will not make sense to the exam grader.

Class Attendance Policy

All students are expected to attend class on a regular basis. The Department of Chemistry adheres to the attendance policy set by the University as stated in the most current Undergraduate Catalog. Being late by more than 5 minutes is equivalent to missing a lecture or laboratory. You must be on time in order to take an exam. Excessive absence is defined as missing more than 10% of the lecture or laboratory sessions without excusable reasons. Excessive absences will be reported to the Dean of the College and the Dean of Students, in accordance with the TAMU-Commerce Procedure A13.02. Good class attendance will be necessary in order to pass the course. If you miss more than 3 lectures prior to the first exam, the instructor reserves the right to drop you from the course. If you miss more than 6 lectures throughout the course of the semester, the instructor reserves the right to drop you from the course

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

Interaction with Instructor Statement

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific 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: https://www.britannica.com/topic/netiquette

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
Undergraduate Student Academic Dishonesty Form

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf

Graduate Student Academic Dishonesty Form

http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Students with Disabilities-- ADA Statement

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 Rm 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/

The *syllabus/schedule are subject to change.*

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

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

The *syllabus/schedule are subject to change.*

COURSE OUTLINE / CALENDAR

Tentative Schedule: Reading assignments should be done and ALL reading notes taken prior to class to ensure best understanding of the material being presented.

Week of	Chapter/Topic	Reading Assignment/Exams
January 13th	Chapter 10: Organic Chemistry	Chapter 10 *This is the same chapter we ended on in 1305
January 20th	Chapter 11: Alkanes	Chapter 11
January 27h	Chapter 11: Alkanes	
February 3rd	Chapter 12: Alkenes and Alkynes	Chapter 12
February 10th	Chapter 12: Alkenes and Alkynes	Exam over Chapters 10, 11, 12
February 17th	Chapter 13: Benzene and Its Derivatives	Chapter 13
February 24th	Chapter 14: Alcohols, Ethers, and Thiols Chapter 15: Chirality: The Handedness of Molecules	Chapter 14 and Chapter 15
March 3rd	Chapter 15: Chirality: The Handedness of Molecules Chapter 16: Amines	Chapter 15, Chapter 16, Test over Chapter 13, 14, 15, 16
March 10th	Chapter: 17: Aldehydes and Ketones	Chapter 17
March 10th	Chapter 18: Carboxylic Acids	Chapter 18
March 17th	Spring Break	Caddo Mills SB
March 24th	Chapter 19: Carboxylic Anhydrides, Esters, Amides	Chapter 19
March 31st	Chapter 20: Carbohydrates	Chapter 20; Test over Ch 17, 18, 19, 20
April 7th	Chapter 21: Lipids	Chapter 21
April 14th	Chapter 22: Proteins	Chapter 22
April 21st	Chapter 22: Proteins	Chapter 22
April 28th	Dead Week	Make up time if lost earlier in the semester
May 5th	Final Exams	Final covers all 13 Chapters

The *syllabus/schedule are subject to change.*