NAU NORTHERN ARIZONA UNIVERSITY

Course Title: CHM 235 General Organic Chemistry I

Term: Winter 2023

Instructor: TBA

Course Credit: 4

Mode of Instruction: Online

Course Description:

Comprehensive introduction to the basics of organic chemistry with an emphasis on Functional Groups, Nomenclature and Conformations of Alkanes and Cycloalkanes, Stereochemistry, Nucleophilic Reactions, Alkenes and Alkynes, Spectrometry, Structure Determination, and Reaction Mechanisms. Labs are required.

Course Prerequisites:

CHM 130 Fundamental Chemistry

Learning Outcomes:

By the end of the course, the student should be able to:

A. Reason and think analytically in solving problems involving organic chemistry;

B. State how typical organic compounds react;

C. Identify, calculate and draw the product of a chemical reaction;

D. Apply typical methods of spectrometry to structure determination;

E. Conduct scientific experiments and interpret scientific experimental results.

Course Material:

Organic Chemistry, Craig B. Fryhle, Scott A. Snyder, T. W. Graham Solomons, 12th Ed., Wiley, 2016.

Evaluation:

- Assignments [5%*2]
- Labs [10%*4]
- Mid-term Exam [20%]
- Final Exam [30%]

Description of the Evaluation tasks:

Assignment/ Essay/ ... : During the term, students will be required to finish several evaluation tasks within due date. All the tasks are linked with specific course topics/outcomes and will adequately assess students' competence and learning outcomes. Students are encouraged to meet with instructor about these tasks at any point.

Mid-term/ Final Exams/ Quiz/... : There may be periodic quizzes given at the beginning of lecture sessions; the feedback from these quizzes will monitor the progress of the learners and help to set learning priorities. There will be mid-term exam/ final exam for the course. They are the basic criteria for the evaluation of students' learning outcomes and final grade.

Grading Policy:

Students are supposed to finish each online lecture. Prior to each class, students should finish the required readings. During the class time, students are encouraged to make use of all relevant online course resources and communicate with the instructor. Students' grades are accumulated based on the cumulative evaluations.

Students' letter grade will be assigned according to the following scale:

A+ 90-100	A 85-89	A- 80-84
B+ 77-79	B 73-76	B- 70-72
C+ 67-69	C 63-66	C- 60-62
D+ 57-59	D 53-56	D- 50-52
F < 50		

Academic Integrity:

Students must strictly adhere to the university's academic integrity rule; and all essays, exams and any other form of academic assignments must adhere to these rules. Any form of plagiarism, cheating, or misappropriation of materials will be considered a violation of academic integrity and will be punishable by the university.

Withdrawal from the Course(s):

Students will be able to apply for a transfer or withdrawal within 3 days of the starting date of the course. If a withdrawal is applied for within 3 working days, the tuition fee will be fully refunded. After 3 days, the tuition fee will not be refunded. If a withdrawal is applied for in the first two weeks, it will be recorded as W (Withdraw) on the course transcript. After this initial two-week period, the class will be recorded as F (Fail).

Tentative Schedule:

Week 1	
1	Course Introduction
2	Bonding and Molecular Structure
3	Families of Carbon Compounds
4	Functional Groups
5	**Lab #1: Bonding**
Week 2	
6	Intermolecular Forces **Assignment #1**
7	Infrared (IR) Spectroscopy
8	Mass Spectrometry
9	Nuclear Magnetic Resonance
10	**Lab #2: Spectroscopy**
Week 3	
11	Acids and Bases
12	Organic Reactions and Their Mechanisms
13	**Midterm Exam**

14	Nomenclature and Conformations of Alkanes and Cycloalkanes
15	Stereochemistry

Week 4

16	Chiral Molecules **Assignment #2**
17	Nucleophilic Reactions
18	Properties and Substitution Reactions of Alkyl Halides
19	Alkenes and Alkynes: Properties and Synthesis
20	**Lab #3: Chiral Molecules**

Week 5

21	Alkenes and Alkynes: Elimination Reactions of Alkyl Halides
22	Alkenes and Alkynes: Addition Reactions
23	Radical Reactions
24	**Lab #4: Elimination Reaction**
25	**Final Exam**