



Course CHEM 2324 Introductory Organic Chemistry for Engineers
Professor Mihaela C. Stefan
Term Spring 2017
Meetings T/R 11:30 am -12:45 PM, GR 3.420

Professor's Contact Information

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Office Hours T/R 3-4 pm
Other Information Contact by e-mail to set up an appointment if you cannot make it to office hours

General Course Information

Course Description This course is a one semester organic chemistry course designed for engineering students. This course covers both organic chemistry 1 and organic chemistry 2 concepts. Students who successfully complete this course will acquire an understanding of molecular architecture, molecular transformations, reaction mechanisms, synthetic strategy, and structure-properties relationship. You should attempt to keep up with the material on a daily basis. Seek help if a concept is causing difficulties. Re-read the lecture materials after we cover them to reinforce the concepts. Also, remember this is not a memorization course. The course instead favors the student who can apply the information learned to a new example. Some memorization is mandatory, but merely memorizing will only allow you to see a very small part of organic chemistry. Understanding why the reaction occurs allows you to see the bigger picture. Finally, always remember that reactions are governed, and the properties of organic molecules are determined, by where the electrons are located.

Upon completing this class, students will:

Learning Outcomes 1) Be able to predict bonding and three-dimensional structure, including chirality; 2) Be able to compare reactivity amongst a series of organic compounds.; 3) Be able to predict reactivity of specific functional groups and to construct simple and efficient routes for the preparation of desired organic compounds.; 4) Be able to determine and compare the acidity of organic compounds; 5) Be able to determine and compare the basicity of organic compounds.; 6) Be able to use organic chemistry knowledge to understand biological pathways.; 7) Be able to design the synthesis of an organic biomaterial using single and multi-step organic chemistry reactions.; 8) Be able to identify relevant organic chemistry for biomedical engineering applications.

Required Texts & Materials There is no required textbook for this class. Lecture notes and problems for each chapter will be posted on E-Learning.

Suggested Texts L.G. Wade, Jr., "Organic Chemistry", eighth edition, 2012; P. M. Dewick, Essentials of Organic Chemistry,

Assignments & Academic Calendar

[Topics, Reading Assignments, Due Dates, Exam Dates]

Date	Topic	Quiz
Jan. 10	Functional Groups and Bonding	N
Jan. 12	Bonding, Valency, Atomic Orbitals	N
Jan. 17	Covalent Bonding, Hybridization	N
Jan. 19	Polarity, Conjugation, Aromaticity (Quiz 1)	Y
Jan. 24	Resonance Structures, Formal Charge	N
Jan. 26	Stereochemistry, Newman Projections	N
Jan. 31	Stereochemistry, Cyclohexanes	N
Feb. 02	Stereochemistry, Optical Isomers	N
Feb. 07	Acidity, Resonance/delocalization effect	N
Feb. 09	Basicity, Hybridization Effect (Quiz 2)	Y
Feb. 14	Reaction Mechanisms, Ionic vs Radical	N
Feb. 16	Nucleophilic Substitution (SN2)	N
Feb. 21	Nucleophilic Substitution (SN1)	N
Feb. 23	Elimination Reactions (E2 and E1)	N
Feb. 28	Comparison SN vs E	N
Mar. 02	Test 1	Y
Mar.07	Alkenes (Addition Reactions)	N
Mar. 09	Alkynes (Addition Reactions)	N
Mar. 21	Alcohols	N
Mar. 23	Alcohols, Ketones and Aldehydes	N
Mar. 28	Ketones and Aldehydes	N
Mar.30	Amines (Quiz 3)	Y
Apr.04	Amines	N
Apr.06	Carboxylic Acids	N
Apr.11	Carboxylic Acids	N
Apr.13	Test 2	Y
Apr.18	Radical Reactions	N
Apr.20	Electrophilic Aromatic Substitution	N
Apr.25	Organic Chemistry of Metabolism	N
Apr 26	Review (Quiz 4)	N
Apr.27	Review	N
May XX	Final	Y

Days with either a test or quiz are marked in bold

Course Policies

The University's policies and procedures segment of course syllabi can be found at <http://provost.utdallas.edu/syllabus-policies/>

Grading (credit) Criteria	Grades will be determined from a combination of test, quiz and final grades			
	Tests	2 x 250	500 points	
	Quizzes	4 x 50	200 points	
	<u>Final</u>	1 x 300	<u>300 points</u>	
	<u>Total</u>	<u>1000 points</u>		
	900 – 1000 = A+	700 – 769 = B+	550 – 599 = C+	400 – 449 = D+
	800 – 899 = A	650 – 699 = B	500 – 549 = C	350 – 399 = D
	770 – 799 = A-	600 – 649 = B-	450 – 499 = C-	<350 = F
Make-up Exams	There are no make-up exams or quizzes. If a student misses either an exam or quiz then that missed grade will be counted as their dropped exam/quiz.			
Class Attendance	Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. Absences may lower a student's grade where class attendance and class participation are deemed essential by the instructor. Attendance will be taken for this class in the days of quizzes and also in other days as decided by the instructor.			
Class Rules	<p>1) Some handouts given in the class will not be posted on E-learning. The handouts can be additional lecture notes or solutions to problems posted on E-learning.</p> <p>2) Quizzes will be given in class during the regular class time at the end of class. A total time of 15 minutes will be allocated for the quiz.</p> <p>3) Tests will be given during the class time. Please see scheduling for details. Students who take tests at StudentAccessAbility must schedule their tests at the times given in the syllabus. This also applies to the final exam. All test and quiz dates and times are clearly marked in the schedule.</p> <p>4) Attendance will be taken for tests and the final and the students will be required show their Comet Card.</p> <p>5) If you wish to submit an exam or quiz for re-grading because you believe you lost points unfairly, you must do so within one week of receiving your quiz or exam. Your entire exam and/or quiz will be re-graded, not just the exact problem you pointed out. No exceptions will be allowed.</p> <p>6) A short key (only answers) for tests and quizzes will be posted on E-learning.</p> <p>7) If you plan to get a letter of recommendation from me you have to make sure that your attendance for this course is 80% or above and you should come to see me in my office during office hours. A statement about what grade you made for this course does not constitute a strong letter of recommendation.</p>			

These descriptions and timelines are subject to change at the discretion of the Professor.