



CHM 2210 Syllabus– Organic Chemistry I
Department of Chemistry & Physics

Fall 2015

Time: Monday, Wednesday, Friday 11:00-11:50 AM

Location: AB7–336

Credit hours: 3 (CRN# 80084)

Instructor: Dr. Gregory R. Boyce, Assistant Professor of Chemistry

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Office: Whitaker 259

Office Hours: MWF 3:00 PM – 5:00 PM and additional hours by appointment.

Course Description

Organic Chemistry I, CHM 2210, is a three credit-hour course offered by the College of Arts & Sciences, intended for science majors. Organic Chemistry I Laboratory (CHM 2210L) is a co-requisite of this course. The course is on the FGCU's Canvas website which is where you can access and download this syllabus and posted lecture materials at <http://canvas.fgcu.edu/>.

Organic Chemistry I emphasizes fundamentals of structure and reactivity of organic molecules and focuses on nomenclature, properties and structure of common functionalities, stereochemistry, spectroscopy (both infrared and nuclear magnetic resonance), synthesis, and reaction mechanisms. A successful student will have mastered the systematic naming common organic molecules, how to predict reactivity of compounds based on structure, and formulate logical reaction mechanisms when only given the starting materials.

Prerequisite

CHM 1046 with a minimum grade of C and CHM 1046L with a minimum grade of C.

Materials Needed

- Textbook: "*Organic Chemistry*" by David Klein, 2nd Edition, customized version. ISBN: 9781118944226. Textbook and WileyPLUS are available as a package for FGCU students in this link: <http://www.wiley.com/WileyCDA/Section/id-822610.html>. E-book is available on the WileyPLUS).
- *Preparing for Your ACS Examination in Organic Chemistry: The Official Guide*. This book is necessary for students to be fully prepared for the final exam. Two copies are available at FGCU library.

Suggested Materials

Molecular Model Kit: A model set is extremely useful in this class and all other classes involving organic chemistry. The sets sold by HGS are rather good and can be bought online relatively inexpensively. http://www.maruzen.info/hgs/catalog/product_info.php?products_id=2

Grading

Everyone **MUST** take the final exam, which is cumulative, at the time specified by the FGCU Schedule of Classes.

Grades are assigned as follows:	
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
< 60	F

Quizzes	10%
Exams (3)	70%
Final Exam	20%
TOTAL	100%

Final grades in the course will be based on the following assignment types and their respective weights. Note that the +/- system is *not* used. Since the lecture class is separate from the laboratory course, your performance in the lecture class will have no direct effect on your final grade in this course. All of your grades will be available on Canvas for you to view – if you notice any errors notify your instructor immediately.

Extra Credit Opportunities

There are two opportunities for extra credit in this course. The first is to visit my office hours with prepared questions for a total of 3 extra points before the first exam. The second opportunity will be given as questions at the end of each exam. The focus of these questions will be the “broad appeal material” presented in the lecture. For instance, I go over a book that uses chirality as the central theme of a murder mystery, the only questions on the tests on such information will be in the extra credit section.

Course Objectives and Student Learning Outcomes

The development of critical thinking and problem solving skills is emphasized in this course. The following outlines what the student should know and be able to do upon completion of the course.

- ❖ Master naming simple organic compounds containing common functionalities.
- ❖ Compare and contrast the structures, properties, and reactions presented and be able to *predict reactivity* based on structure.
- ❖ Draw resonance structures for common organic functionalities.
- ❖ Describe, draw, and predict the most stable configurations of common organic functionalities.
- ❖ Classify molecules as chiral or achiral and be able to identify molecules as enantiomers and diastereomers.
- ❖ Predict which reaction (SN1, SN2, E1 and E2) will occur based on the reactivity of the substrates and reaction conditions.
- ❖ Determine molecular weight of a compound from mass spectra and predict molecular fragments Draw general features of the NMR spectra for a specific compound.
- ❖ Interpret a combination of IR, NMR and mass spectra data to define the structure of a compound.

Make-up Policy

A missed exam results in a grade of “0” for that test. Since exam grades make up the of credit for the course, it is imperative that you are present and prepared for each exam. Make-ups for any of the exams will only be allowed with documented proof of a serious unpreventable circumstance.

Laptop/cell phone Policy

Laptops **CANNOT** be used during the lecture. While laptops can be very helpful in note taking, all organic chemistry is drawn so they are useless during class. Cell phones are a distraction for everyone, and should be turned off or muted during class. **Using either during class without my expressed permission, will result in a 5 pt. penalty on the next exam.**

Homework Assignments/ Quizzes

Homework assignments are absolutely essential to succeeding in this course. The homework in this course is not graded and is provided as practice for you to hone your skills. If you do not do the homework you should not expect higher than a “C” in this course.

Supplemental Instruction

It is highly recommended that you take advantage of the free tutoring available through the Center for Academic Achievement: <http://www.fgcu.edu/caa>

Academic Behavior Standards and Academic Dishonesty

All students are expected to demonstrate honesty in their academic pursuits. The university policies regarding issues of honesty can be found in the FGCU Student Guidebook under the ***Student Code of Conduct*** and ***Policies and Procedures*** sections. All students are expected to study this document which outlines their responsibilities and consequences for violations of the policy. The FGCU Student Guidebook is available online at <http://studentservices.fgcu.edu/judicialaffairs/new.html>

Disability Accommodations Services

Florida Gulf Coast University, in accordance with the Americans with Disabilities Act and the university’s guiding principles, will provide classroom and academic accommodations to students with documented disabilities. If you need to request an accommodation in this class due to a disability, or you suspect that your academic performance is affected by a disability, please contact the Office of Adaptive Services. The Office of Adaptive Services is located in Howard Hall 137. The phone number is 239-590-7956 or TTY 239-590-7930.

Student Observance of Religious Holidays

All students at Florida Gulf Coast University have a right to expect that the University will reasonably accommodate their religious observances, practices, and beliefs. Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence. Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances. Where practicable, major examinations, major assignments, and University ceremonies will not be scheduled on a major religious holy day. A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason for the absence. The full FGCU policy is available online at <http://www.fgcu.edu/generalcounsel/policies-view.asp>

Syllabus Statement for Center for Academic achievement

The center for academic achievement (CAA) provides academic support service to all FGCU students. Students can take advantage of our free peer tutoring and supplemental instruction sessions for lower-level science course, as well as workshops to facilitate the development of skill necessary for college success. For more information, please visit CAA in Library 103 or call at (239) 590-7906. The CAA website is www.fgcu.edu/caa.

Lecture Schedule

(This schedule is tentative and may be adjusted as needed)

	Date	Concepts Covered
Week 1	8/19	Introduction and Syllabus
	8/21	Ch. 1 – A Review of Chemical Bonds and MO Theory Ch. 2 – Molecular Representation
Week 2	8/24	Ch. 2 – Molecular Representation
	8/26	Ch. 3 – Acids and Bases
	8/28	Ch. 4 – Alkanes & Cycloalkanes
Week 3	8/31	Ch. 4 – Alkanes & Cycloalkanes
	9/2	Ch. 5 – Stereoisomerism
	9/4	Ch. 5 – Stereoisomerism
Week 4	9/7	Ch. 6 – Chemical Reactivity and Mechanisms
	9/9	Ch. 6 – Chemical Reactivity and Mechanisms
	9/11	Ch. 6 – Chemical Reactivity and Mechanisms
Week 5	9/14	<i>Exam 1 – Chapters 1 – 6</i>
	9/16	Ch. 7 – Substitution Reactions
	9/19	Ch. 7 – Substitution Reactions
Week 6	9/21	Ch. 7 – Substitution Reactions
	9/23	Ch. 8 – Alkenes: Structure and Preparation
	9/25	Ch. 8 – Alkenes: Structure and Preparation
Week 7	9/28	Ch. 9 – Addition Reactions of Alkenes
	9/30	Ch. 9 – Addition Reactions of Alkenes
	10/2	Ch. 9 – Addition Reactions of Alkenes
Week 8	10/5	Ch. 10 – Alkynes
	10/7	Ch. 10 – Alkynes
	10/9	<i>Exam 2 – Chapters 7 – 10</i>
Week 9	10/12	Ch. 11 – Radical Reactions
	10/14	Ch. 11 – Radical Reactions
	10/16	Ch. 12 – Synthesis
Week 10	10/19	Ch. 12 – Synthesis
	10/21	Ch. 12 – Synthesis
	10/23	Ch. 13 – Alcohols and Phenols
Week 11	10/26	Ch. 13 – Alcohols and Phenols
	10/28	Ch. 13 – Alcohols and Phenols
	10/30	Ch. 13 – Alcohols and Phenols
Week 12	11/2	Ch. 14 – Ethers & Epoxides; Thiols & Sulfides
	11/3	<i>Last Day to Drop/Withdraw without Academic Penalty</i>
	11/4	Ch. 14 – Ethers & Epoxides; Thiols & Sulfides
	11/6	<i>Exam 3 – Chapters 11, 12, 13 & 14</i>
Week 13	11/9	Ch. 14 – Ethers & Epoxides; Thiols & Sulfides
	11/11	Ch. 14 – Ethers & Epoxides; Thiols & Sulfides
	11/13	Ch. 15 – IR and MS
Week 14	11/16	Ch. 15 – IR and MS
	11/18	Ch. 16 – NMR
	11/20	Ch. 16 – NMR
Week 15	11/23	Ch. 16 – NMR

	11/25	Review for Exam 3
	11/27	<i>Thanksgiving Break – No class</i>
Week 16	12/1	<i>Exam 3 – Chapters 14-16</i>
	12/3	Review for Final
Week 17	12/7	<i>Final Exam – all Chapters (ACS Exam); 10:00 AM – 12:15 PM; Location: AB7 – 336</i>