



Chemistry 211: Organic Chemistry

Fall 2015 Syllabus



Instructor Information

Instructor: Dr. Michael A. Bertucci (bertuccim@moravian.edu)

Office: Collier Hall of Science 222

Office Hours: M 1:00 pm – 2:00 pm, T 9:00 am – 11:00 am, W 10:00 am – 12:00 pm or by appointment

CHEM 211/212 Course Description

This course is an exploration of elementary concepts of organic chemistry and their application to the study of structure, reactivity and synthesis of organic compounds. An emphasis will be placed on the correlation of the structures of molecules with their functions and the explanation of these correlations on fundamental scientific principles. The laboratory course uses exploratory approach for learning fundamental laboratory techniques, as well as providing experience with classical synthesis and qualitative organic analysis including MS, FTIR, and FTNMR spectroscopic techniques. Prerequisite: Chemistry 114.

CHEM 211 Lecture & Problem Session Information

Lecture: MWF 8:55 am – 9:45 am

Room: Memorial 302

Problem Session: PA → R 7:50 am – 8:40 am

Room: Collier 204 (Dana)

PB → R 8:55 am – 9:45 am

Room: Collier 204 (Dana)

Textbook: **Organic Chemistry, 2nd Ed.** By Clayden, Greeves, Warren - *required* (ISBN-13: 978-0-19-927029-3); **Solutions Manual to Accompany Organic Chemistry, 2nd Ed.** By Clayden & Warren – *recommended* (ISBN-13: 978-0-19-966334-7)

Model Kits: **Maruzen HGS 1013A Organic Chemistry Set for Students** is *highly recommended*; other model kits will be considered for use by the instructor, but a model kit is *required* for the course

Online Resources: **Blackboard** will be the main interface by which all lectures, videos, problem session worksheets, and other study materials are posted. Thus, it will be your responsibility to periodically check Blackboard for updates. Grades and class related communications will also be maintained on Blackboard.

The lecture and problem session portion of the course will be problem-based in which the time spent lecturing on course content is minimized to encourage active-learning during the class period. SO EXPECT TO BE INVOLVED!!! Recent studies have shown that moving away from passive instruction enhances student attentiveness and learning in organic chemistry.¹ This also mandates that students take responsibility for preparing for class before arriving by completing all assigned readings, videos, and problems. Though they may not be graded, they will impact your quiz and test grades.

Learning Outcomes

At the completion of the lecture course, you will be able to:

- Apply rules of IUPAC nomenclature to properly name organic compounds
- Distinguish between conformational, constitutional, regio-, and stereoisomers

¹Moog, R. S. and Spencer, J. N. **Process-Oriented Guided Inquiry Learning (POGIL)**. American Chemical Society, (2008).

- Compare and contrast the electronic properties and reactivities of nucleophiles and electrophiles and their role in substitution and elimination reactions
- Draw curved arrows to represent the flow of electrons in a reaction mechanism
- Apply molecular orbital theory to predict chemical reactivity
- Predict reactions at a carbonyl centers in the presence of acids, bases, and nucleophiles
- Relate principles of kinetics and thermodynamics to reaction rate and product formation

Assessment

Quarterly Exams: **Four (4) full-period exams** will be given during the semester to assess your comprehension of the content covered during the class period and in formative course assignments. The exams will consist of multiple choice, fill in the blank, and free-response questions.

Quizzes: Short quizzes will be handed out at random at the beginning of the class period to assess your preparedness for the material to be covered that day. Completing all pre-class assignments will correlate to better performance on the quizzes. The **highest twelve (12) grades** will be counted towards your final grade. Make-up quizzes will not be issued unless in extreme circumstances with prior approval.

Problem Session Worksheets: Guided problem sets and worksheets will be distributed before and/or during the problem session period. They will be used to reinforce troubling material or introduce a topic that will only be addressed briefly during the class period. **Pre-Class Worksheets must be handed in at the beginning of the problem session period as a paper copy.** All other worksheets handed out during the problem session must be handed in by the end of the problem session in order to receive credit.

Final Exam: A summative and integrated assessment of the concepts covered in the course.

Grading Policy:

Exams: 4 x 100 points each	= 400 points
Quizzes: 12 x 10 points each	= 120 points
Problem Session Worksheets: 12 x 10 points each	= 120 points
Final Exam: 1 x 150 points	= 150 points
Teacher Evaluations: 2 x 5 points	= 10 points
Total: 800 points	

Tentative Course Outline:

Date	Book Chapter
M 8/31	Ch. 1
W 9/2	Ch. 1
F 9/4	Ch. 2
M 9/7	Ch. 2
W 9/9	Ch. 2
F 9/11	Ch. 4
M 9/14	Ch. 4
W 9/16	Ch. 4
F 9/18	Ch. 7
M 9/21	EXAM 1 (Ch. 1, 2, 4, 7)

W 9/23	Ch. 8
F 9/25	Ch. 8
M 9/28	Ch. 5
W 9/30	Ch. 5
F 10/2	Ch. 6*
M 10/5	Ch. 6
W 10/7	Ch. 10
F 10/9	Ch. 10
M 10/12	FALL BREAK
W 10/14	Ch. 10
F 10/16	Ch. 11
M 10/19	Ch. 11
W 10/21	EXAM 2 (Ch. 8, 5, 6, 10, & 11)
F 10/23	Ch. 14
M 10/26	Ch. 14
W 10/28	Ch. 14
F 10/30	Ch. 16
M 11/2	Ch. 16*
W 11/4	Ch. 16
F 11/6	Ch. 12
M 11/9	Ch. 12
W 11/11	Ch. 12
F 11/13	Ch. 12
M 11/16	CATCH UP DAY
W 11/18	EXAM 3 (Ch. 14, 16, & 12)
F 11/20	Ch. 15
M 11/23	Ch. 15
W 11/25	THANKSGIVING
F 11/27	THANKSGIVING
M 11/30	Ch. 15
W 12/2	Ch. 17
F 12/4	Ch. 17
M 12/7	Ch. 17
W 12/9	EXAM 4 (Ch. 15 & 17)
F 12/11 (LDOC!)	REVIEW

* = teacher evaluation due on Blackboard

Academic Honesty: Students are required to complete and submit all exams, quizzes and out of class assignments individually unless notified otherwise by the instructor. Group work is to be completed in a collaborative fashion in which each group member makes an equal contribution to completion of the assignment. For further details on the policies and sanctions regarding academic honesty in this course, please consult the *Moravian College Student Handbook* (<http://www.moravian.edu/studentLife/handbook/academic/academic2.html>).

Disability Policy: The Academic Support Center houses Disability Support and Greyhound Tutoring on the first floor of Monocacy Hall and can be reached at [610-861-1401](tel:610-861-1401). If you would like to work with a Greyhound Tutor to boost your academic success, please request a tutor through <http://bit.ly/NeedTutorMC> (case-sensitive). Please email Dana Wilson

(wilsond@moravian.edu), Tutor Coordinator, for more information about tutoring. Please email Laurie Roth (rothl@moravian.edu), Director of Academic and Disability Support, for more information about disability support.