

CEM 222
Organic Chemistry II
Spring 2011

[www.bluffton.edu/~bergerd/classes/CEM 222](http://www.bluffton.edu/~bergerd/classes/CEM_222)

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Office hours: 2-3 M, 10-11 W, 1-2:30 R, 10-11 F

Drop-ins are welcome; appointments made by telephone or E-mail messages **will** be honored subject to my posted schedule (www.bluffton.edu/~bergerd/classes/sched.html) and prior commitments.

Required Texts:

Organic Chemistry, 5th Edition by Paula Yerkanis Bruice, bundled with study guide

Organic Chemistry Online by Paul R. Young, CD-ROM supplied by instructor

Some resources require the ChemScape Chime plug-in; the installation file may be downloaded from Jenzabar

Molecular Visions model kit, by Darling Models, or a comparable kit.

Organic Chemistry Experiments, edited by Daniel Berger.

The Organic Chem Lab Survival Manual, 8th Edition by James W. Zubrick.*

The Hayden-McNeil 100-page laboratory notebook that makes carbon copies.

Reserve Texts:

The ACS Style Guide, J. S. Dodd, Editor. Available in **Musselman Library**, for library use only.

Preparing for your ACS Examination in Organic Chemistry: The Official Guide, by the ACS Examinations Institute. Three copies are available in **Musselman Library** for 24-hour checkout.

Introduction to Spectroscopy, by D.L. Pavia, G.M. Lampman and G.S. Kriz. Dr. Berger's personal copy will be kept in **Shoker Science Center**.

Basic Skills for Organic Chemistry: A Toolkit, by Stuart Rosenfeld. Dr. Berger's personal copy will be kept in **Shoker Science Center**.

Organic Chemistry as a Second Language, v. 1 and 2 by David R. Klein. Dr. Berger's personal copy will be kept in **Shoker Science Center**.

Computer resources. The **local web page** www.bluffton.edu/~bergerd/classes/CEM222 will contain or link to most online materials relevant to this course, including some very good spectroscopy tutorials. The course schedule will be posted to the local web page. **Powerpoint** will be used extensively in lecture, particularly during the first half of the semester. These materials will be posted to the course web page.

The *Organic Chemistry Online* **CD-ROM** will be included in reading assignments. You will also find the textbook CD useful.

Prerequisite: CEM 221 (Organic Chemistry I) or permission of the instructor.

* Any edition will do.

Overview. CEM 222 will extend the survey of organic chemistry in CEM 221. Emphasis will be placed on understanding and using organic reactions to construct new molecules. You will be expected to remember a great many reactions—especially those from CEM221; try to sort them by types so that they are easier to remember. You will also be expected to use what you learn. Remember that reactions are the palette used in the art of organic synthesis.

We will spend the first four weeks of the course learning to use spectroscopic methods to identify organic compounds, and discussing aspects of bonding and structure in organic molecules. The remainder of the course will concentrate on organic reactions and synthesis. Several new reactions will be introduced, as well as some aspects of synthetic strategy.

Safety considerations. Laboratory safety is essential. The instructor will remind you of the hazards associated with each experiment; safety aspects are also discussed in your lab manual. Future science teachers will want to make special note of these safety discussions because they will need to give similar safety instructions once they become teachers.

Integration of Ideas. The theories and ideas used in this course are not unique to organic chemistry. Students should notice how the ideas and techniques used in this course are useful in other courses, and how they may be useful in daily life or global citizenship. The instructor will attempt to point out these connections. Students are encouraged to note them themselves, and to point out connections as they notice them. Please ask questions as they arise.

Students with disabilities, including learning disabilities, who wish to request accommodations in class, should register with the Counselor for Disability Services early in the semester. This allows time for appropriate arrangements to be made. In accordance with federal laws, students requesting special accommodations must provide documentation of their disability to the Counselor for Disability Services, Jacqui Slinger, 2nd floor College Hall, extension 3215.

Meeting schedule. We will meet at 9 AM every Monday, Wednesday and Friday, January 7 through April 23, except as follows:

January 17 (Monday)	Martin Luther King Day (no classes)
March 7-11	Spring Break (no classes)
April 6 (Wednesday)	Civic Engagement Day (schedule TBA)
April 22 (Friday)	Good Friday (no classes)
April 25 (Monday)	Easter Monday (no classes)
April 28 (Thursday)	“Wednesday,” class makeup day for April 6

Meeting topics, with the relevant chapters in Bruice, are published on the course web page.

Laboratory schedule. The laboratory schedule is posted to the course web page and handed out with this syllabus.

Course Expectations and Grading:

Meetings. Attendance is required at all class meetings. Any missed in-class work will receive a zero unless the absence is excused. Any reasonable excuse will be accepted, but you must account for your absences to the instructor! An excessive number of absences (excused or not) will require a reconsideration of your grade in the course.

You may work as a group during meetings, and the results of this work may be graded. There will also be quizzes at various times during the term. Quizzes and other graded in-class or take-home work will comprise 10% of your grade.

Laboratory. Your laboratory grade will be 25% of your final grade; grading rubrics will be identical to those used in the Fall Semester. Completion of all laboratory work is required, including submitting acceptable reports for each experiment.* However, the last three syntheses of the term are operationally simple, and you may, if you can, perform more than one per week. Expectations for the laboratory portion of the course are given in the laboratory manual. **All laboratory work, except reports, must be completed before April 22!** Failure to complete all laboratory work, *including* acceptable reports and computational chemistry assignments, will lower your final grade in addition to a zero for the incomplete work.†

Reasonable excuses will be accepted for absences from the laboratory. Students who miss a laboratory period must make up the work as best they can. With the exception of melting point determinations and IR/NMR spectral readings, **all laboratory work must be performed during the scheduled laboratory time slots.** No more than 45 minutes “overtime” will be allowed, that is, you must be out of the lab not later than 5:45 PM. Therefore, you should be sure you plan your work before coming to lab!

Examinations. Examinations will, as a group, comprise 65% of your grade. There will be four two-hour examinations, equally weighted. You are required to take **all four** examinations; ½ of each of the two lowest exam scores will be dropped. If an examination is missed for an excused absence, the remaining three will be averaged for your exam score; unexcused exam absence will result in that exam score being counted, as a zero. There will be no makeup examinations.

All examinations will be given on Thursdays from 7-9 PM, in Shoker Science Center. They will be cumulative, including material from CEM 221.

Exam Date	Comments
February 3	These exams are given at 7 PM on the date given. You may take the exam earlier the same day, if you make an appointment to do so in advance.
March 3	
April 7	
May 4, 8-10 AM	This is the ACS Organic Chemistry examination. Grades will be based on national test score percentiles.

Grades will be based on adjusted percentage scores:

	A (90%)	A- (85%)	B+ (80%)	B (75%)	B- (70%)
C+ (65%)	C (60%)	C- (55%)	D+ (50%)	D (45%)	D- (40%)

* See the lab manual for more information.

† The normal criterion is “one incomplete week = ½ grade, two incomplete weeks = full grade, three or more incomplete weeks = failure of the course.” Be advised that some lab activities count as two or more weeks!

Academic Integrity

The Bluffton College Honor System will be followed in this course. After completing each examination, you will be asked to write and sign the statement, "I am unaware of any aid having been given or received during this examination." You are expected, on your honor, to refrain from violating the Honor System and to report any violations you may observe.

Examinations (except take-home exams) will be closed-book. Calculators are acceptable but will not often be needed; palmtop computers *may not* be used. *Take-home assignments* may use any available aid or reference (properly cited) **except other students**, and are expected to represent your own work.

You are expected to write your own *lab reports* using your own words. Use of someone else's lab report as your own is an honor violation for both the student who turns in the plagiarized report and the student who allows her report to be plagiarized. However, you are encouraged to work closely with other students in the laboratory, and in analysis of the data you obtain in the laboratory.

Uncontested academic dishonesty will result in the *minimum* penalty of receiving a zero for the examination or experiment during which the infraction took place, without the possibility of making it up. **Penalties for dishonesty will normally be greater than for failure to complete the work**, up to and including failure of the course. Sufficiently serious violations will result in referral to the Dean's office for further action, according to the judgment of the instructor.