
C hem 341 ~ Organic Chemistry I

Syllabus - Fall 2004

Instructor: Professor Gregory R. Cook
Office: Dunbar Hall 360A
Telephone: 231-7413
Email: Gregory.Cook@ndsu.nodak.edu
World Wide Web: <http://cook.chem.ndsu.nodak.edu/chem341/>
Office Hours: Monday and Wednesday, 9:00 am - 10:00 am, or by appointment

Required Text: "Organic Chemistry" Sixth Edition, J. McMurry bundled with "Study Guide and Solutions Manual for McMurry's Organic Chemistry" Sixth Edition, S. McMurry.
Optional: Darling Molecular Models available in the Varsity Mart - Highly Recommended!

INTRODUCTION: This course is designed to introduce you to the fascinating field of organic chemistry. In its simplest definition, organic chemistry is the chemistry of carbon compounds. We will discover what makes carbon compounds unique from other branches of chemistry. We will begin by discussing the concepts of structure and bonding in organic molecules. We will explore the preparation and reactions of various types of organic molecules, including alkanes, alkenes, alkynes, and alkyl halides. Modern chemists use a variety of techniques to probe the structure of molecules. Organic chemists utilize Nuclear Magnetic Resonance Spectroscopy as a structural tool. We will introduce you to this powerful technique.

GRADING: Grading will be based on a 500 point scale (3 - 100 point exams or 2 - 100 point exams and 5 - 21 point quizzes, and a 200 point comprehensive final exam). Letter grades will be assigned according to the following percentiles (subject to change):

A	85 - 100	C	60 - 74
B	75 - 84	D	45 - 59

EXAMS: Three hourly exams (100 points) and a comprehensive final exam (200 points) will be given on the dates specified in the attached schedule. There will be no make-up exams without prior approval of the instructor. If you must miss an exam due to a scheduled university function (athletic event, etc.), the instructor must be notified at least two weeks before the exam date. An alternative exam will only be given *prior* to the scheduled exam date. *Absolutely no make up exams will be given after a scheduled exam date.* Extraordinary circumstances (death, hospitalization, etc.) will be evaluated on a case by case basis. Exams are short answer and will not use computer scantron sheets. **Please note:** Hats, Cell Phones, Calculators and PDA's are prohibited during examinations. Please bring a picture ID to the exam.

QUIZZES: Six short quizzes (21 points) will be given throughout the semester. These quizzes will be unannounced and can occur at any time. *They are not directly added to your grade total for this course, however, they can be beneficial.* Quizzes can only help your grade, not hurt it. The best 5 quizzes out of the 6 will be totaled. This total will replace your lowest hourly exam score if it is higher. *Under no circumstances will there be any makeup quizzes.* It is in your best interest to attend class and take all quizzes. Even if the points will not help your grade, it is a good exercise to practice organic problems. Quiz answers will be posted on the class web page. All quizzes will be multiple choice and computer scored. You may keep the quizzes, but scantron answer sheets are not returned.

LEARNING TIPS: Organic chemistry is not hard, but it does *take a lot of work*. The most important thing you can do to be successful in this class is to attend every class, stay current and keep up. Unfortunately, Organic Chemistry is a broad field with lots of new concepts for you to learn. The material comes very fast and there's really not much I can do other than try to explain the material in a simple and understandable a fashion. It just isn't possible to cram for organic chemistry on the night before an exam. Believe me when I tell you that studying an hour or two everyday will be much better than studying for 12 hours on a weekend. It is not easy to absorb all the material in one sitting, and a daily dose will make comprehension much easier. It will take effort on your part to learn organic chemistry.

Learning organic chemistry is very much like learning a foreign language. You need to learn the vocabulary in terms of names, structures, and types of functional groups. You also need to learn the rules of grammar. For example, how an alcohol will react with a halide, etc. Once you learn certain rules, they can be applied to many different reactions. Thus you can construct chemical sentences. There will be a certain amount of memorization required, however, because of the vastness of the subject, learning general trends and rules will be most helpful.

Homework is not required for this course. However, suggested problems will be announced for each chapter. You are **strongly urged** to work through the suggested problems as many times as it takes to become proficient with the material. This will take a lot of work on your part, but it will be key to your success in this class.

Here are some suggestions:

- Read the chapter ahead before coming to class.
- Ask questions.
- Rewrite your notes after every class.
- Do the suggested problems as many times as it takes to understand the material, then try the other problems in your text.
- Use the Study Guide and Solutions Manual - but try to understand the problems without looking at the answers first.
- Use flash cards to help learn structures, names, and reactions.
- Find a friend or group of students to study with..
- Buy a set of molecular models.
- Utilize instructor and TA office hours.

Special Needs: All students have the right to an environment that is conducive for learning. Any students who need special accommodations for learning or who have special needs are invited to share these concerns or requests with the instructor as soon as possible.

Academic Responsibility: It is assumed that students at NDSU have the integrity to complete examinations on their own. I will provide an examination environment that discourages temptation otherwise. Any student who is found to have acted dishonestly on an exam will receive an F for that exam or depending on the circumstances, an F for the course. A second infraction will result in an automatic F for the course and the student will be reported to the Dean of Science and Mathematics for further action. Please note that a single infraction of academic responsibility could be grounds for expulsion from the university. The policy applied is that of the Code of Academic Responsibility and Conduct as outlined in NDSU University Senate Policy, Section 335: Code of Academic Responsibility and Conduct (<http://www.ndsu.nodak.edu/policy/335.htm>).

Course Outline

Tentative Class Schedule (subject to change)

Chapter 1:	Structure and Bonding
Chapter 2:	Polar Covalent Bonds; Acids and Bases
Chapter 3:	Organic Compounds; Alkanes and Cycloalkanes
Chapter 4:	Stereochemistry of Alkanes and Cycloalkanes
Chapter 5:	An Overview of Organic Reactions
EXAM 1	Friday, Sep 24 Chapters 1-5
Chapter 6:	Alkenes: Structure and Reactivity
Chapter 7:	Alkenes: Reactions and Synthesis
Chapter 8:	Alkynes: An Introduction to Organic Synthesis
EXAM 2	Friday, Oct 22 Chapters 6-8
Chapter 9:	Stereochemistry
Chapter 10:	Alkyl Halides
Chapter 11:	Reactions of Alkyl Halides: Nucleophilic Substitutions and Eliminations
EXAM 2	Friday, Nov 19 Chapters 9-11
Chapter 12:	Structure Determination: Mass Spectrometry and Infrared Spectroscopy
Chapter 13:	Structure Determination: Nuclear Magnetic Resonance Spectroscopy
FINAL EXAM	Friday, December 17, 1:00-3:00 ~50% chapter 12-13, ~50% Comprehensive

EXAMS

Students with last names beginning with A-G should report to IACC 104 for exams and Students with last names beginning with H-Z should report to Stevens Hall. A-G students will use FLC 124 for the Final Exam.

September 24	Exam 1
October 22	Exam 2
November 19	Exam 3
December 17	Final Exam

HOLIDAYS

September 6	Labor Day Holiday
November 25-26	Thanksgiving Holiday