

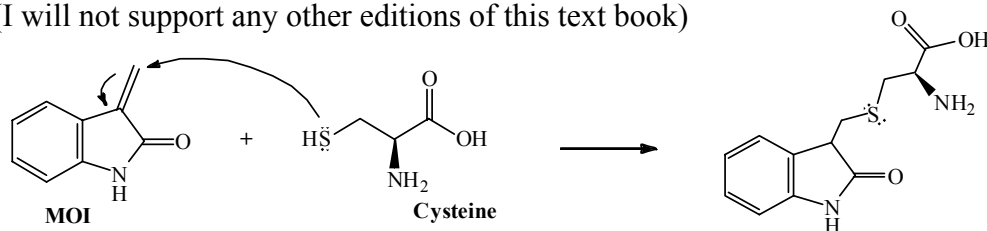
CHEM 344-002 Organic Chemistry II - Spring 2012

GENERAL INFORMATION

Instructor: Dr. Ed Brush: Conant 407
Office Hours: Monday & Wednesday 11:00-12:00; or by appointment. I also have an “Open Door” policy, so if my door is “open” feel free to stop in!
Office Phone: 508-531-2116
e-mail: ebrush@bridgew.edu
web page: <http://webhost.bridgew.edu/ebrush/>

Class: MWF, CON 120, 8:00 - 8:50 AM

Required Text: “Organic Chemistry” – 10th Edition (2011), Solomons & Fryhle
(I will not support any other editions of this text book)



Student research: Illustration of the proposed Michael addition reaction between MOI and the amino acid cysteine. MOI (3-methyleneoxindole) has been synthesized by BSU undergraduate research students as a potential therapeutic agent.

COURSE DESCRIPTION, GOALS, and OBJECTIVES. CHEM 344 Organic Chemistry II (4 credits). This is the second semester of an introductory course in organic chemistry designed for students majoring in biology, chemistry, earth sciences, and geography. CHEM 344 carries four credits earned by three hours of lecture, one hour of recitation, and three hours of laboratory work weekly. Prerequisite: a minimum C- grade in CHEM 343. **Please note that a C- is the minimum passing prerequisite in all chemistry courses.**

Why do I need to study Organic Chemistry? Organic Chemistry is truly the “*Chemistry of Life*”, and is essential for students pursuing careers in the biological, chemical, environmental, health and medical sciences, as well as biochemistry, genetics, and medicinal chemistry. You may want to consider working on a research project in Bioorganic, Green Chemistry, or Sustainability as the discipline is rich in basic research that has led to numerous biomedical advances, the design and synthesis of modern materials, and development of safer products for society. Examine your surroundings; wherever you are, you will be surprised to discover that almost everything around you is composed of organic molecules, including the biomolecules in your own body, not to mention the numerous Bioorganic reactions occurring in the environment and in all living organisms.

Goals of this Course. My goals are to provide you with a solid foundation in the basic facts and concepts of organic chemistry, and to demonstrate that the field is dynamic and exciting, and essential to the understanding of all life processes. This will be accomplished through the following objectives in the lecture and laboratory:

- 1) This course will help you build a solid foundation of facts and fundamental principles in organic chemistry that you will be able to apply to intermediate and advanced courses in biology, chemistry, and earth sciences, as well as to research in any of these fields;
- 2) The course will help you to develop college level study skills, and through problem solving you will develop skills in critical thinking and decision making;
- 3) The laboratory portion of the course will help clarify some of the concepts discussed in lecture, and you will be introduced to some of the methods used by professionals to gain new knowledge in organic chemistry;
- 4) You should gain a better appreciation of the importance of organic, bioorganic, and green chemistry in society and in our everyday life;
- 5) You will experience the benefits of working together in a group, cooperatively solving problems and learning new material.

GRADING POLICY

	<u>% of final grade</u>
• Three semester exams (100 points each), and a final exam (200 points)	500 points - 80%
• “Booster Points” may replace the lowest exam grade (or 50% of final exam)	(100 points max)
• Lab grade	125 points - 20%
• TOTAL	625 points - 100%

Your course grade will be assigned at the end of the semester based on the following scale: A's (90+), B's (80-89), C's (70-79), D's (60-69), F (<60). Each exam will be assigned a numerical score that will not be curved. You are strongly encouraged to work together and cooperate with other students in the learning process. **Note: an “A” grade requires a 95% average or 591 points.**

CLASS ATTENDANCE IS MANDATORY. Class attendance will be taken by sign-in sheet on a daily basis. Students are responsible for obtaining missed lecture notes and assignments. I do not accept written excuses for missed classes, but each student can miss four classes without penalty. ***However, students who miss more than four classes will have points deducted from their exam grades (3 point deduction for each additional absence).*** Arriving more than 10 minutes late will be regarded as an absence. It is your responsibility to sign the attendance sheet at the beginning of class or you will be marked absent....period.

Responsibilities of the student. By registering for this course, you have accepted the responsibilities expected of all BSU students. Foremost of these, ***it is the student's responsibility to take the initiative to learn the course material!*** Examples include: attending and participating in lecture and lab; taking exams as scheduled; notifying the course instructor with an approved excuse if you miss lab or an exam; reading the text and working recommended text problems; taking lecture notes; turning in lecture and lab assignments on time; participating in study groups; taking advantage of the learning opportunities provided by the course instructor.

Responsibilities of the instructor. I will be as accessible as is reasonably possible, and it is my responsibility to provide all students with every opportunity to master the material covered in this course.

Missed Exams. You must contact me by phone or email within 2 hours of a missed exam. Upon receipt of a written, verifiable excuse, you may be given a make-up exam at my discretion. ***Illness requiring doctor's care or personal emergencies are the only acceptable excuses.*** I do not accept excuses from your parents unless they are your physician. All other excuses will result in a zero exam grade, although your Booster Point total will replace the missed exam (but only 50% of the final exam). Make-up exams are given on the next class day immediately following the scheduled exam date. Students are allowed one make-up exam per semester, including the final exam. **Please note that I do not give “incompletes” for CHEM 344!**

BSU Policy on Academic Integrity and Classroom Conduct.

<http://www.bridgew.edu/handbook/PoliciesProcedures/academicintegrity.cfm>

<http://www.bridgew.edu/handbook/PoliciesProcedures/StudentCodeofConduct.cfm#ConductCodeViolations>

At BSU, academic honesty is expected of all students; plagiarism and cheating are not condoned and are subject to academic penalty, which may result in a failure for the course in which the violation took place. A record of the violation is kept and may result in suspension or dismissal from the college. Academic dishonesty may include cheating on exams; plagiarism; and the blatant copying of lab reports, problem assignments or projects, and other infractions identified by the instructor, any of which may result in dismissal from the course with an F grade.

Booster Points. You may earn up to 100 “Booster Points” that can be used to replace the lowest of your exam grades (or 50% of the final exam). Your “Booster Point” account can be credited as follows:

- **Booster Quizzes & Worksheets:** (0-10 points each)
- **Text Problem Notebook:** (checked during each semester exam on a 0 - 5 point scale; 15 points max)
- **Special Projects** (as assigned by the instructor)
- **Attendance at specified BSU seminars and campus events** (0-10 points with one-page report)
- **Student Study Groups** (10 or more points for study groups that meet on a weekly basis)

There are no make-ups for missed "Boosters Points" or work turned in late. How you accumulate Booster Points depends on your own motivation and maturity.

Booster Quizzes. At random intervals there will be a collaborative, 10-minute booster quiz beginning at 7:55 AM, so don't be late! Booster quizzes will be based on material from the previous class, or on reading or problem assignments. Points from each quiz will be added to your booster point total. You can work together on Booster Quizzes, or work alone.

Classroom Group Work. Cooperative group work is a formal part of the course, and no student is excused. Periodically, we will spend our regular class meetings solving problems through a combination of lecture and collaborative group work. The advantages include: (1) students interacting with each other and not just listening to the instructor; (2) students taking responsibility for their own learning; (3) a less intimidating classroom atmosphere; (4) seeing how others solve problems will improve your own problem-solving skills; and (5) you will be better prepared for grad school or employment in the sciences. Classroom work groups will be assigned and changed at the discretion of the course instructor.

Take-Home Booster Worksheets. Occasionally, I will assign take-home worksheets that will be graded either individually or on a group basis. **YOU ARE ENCOURAGED TO WORK TOGETHER ON THESE WORKSHEETS!** There is no make-up for missed worksheets, and they will not be accepted late.

Textbook Problem Notebook (15 max booster points). I will assign text problems from each chapter that are chosen to drill fundamental concepts. These problems must be included in a separate, bound notebook, your name must be clearly written on the cover, and there should be a heading for each set of chapter problems. Although for most problems only a simple answer is needed, I do expect that you will show your work as much as possible. You are strongly encouraged to work these problems, individually or in a study group, as they will appear on worksheets and exams. I will collect your problem notebook at each exam and evaluate it for completeness, effort, organization, and readability. These will be graded either zero (not acceptable or incomplete) or 5 points (clear evidence that significant effort was applied to solving the problems).

Student Study Groups. I strongly encourage students to form study groups that meet on a weekly basis to review lecture notes, discuss text problems, go over labs, complete worksheets, etc. A minimum of three students must meet for at least one hour each week. **YOUR STUDY GROUP MUST WELCOME ANY STUDENT WHO ASKS TO PARTICIPATE.** Students who attend a minimum of ten study sessions will receive ten booster points. **One student will be responsible for taking attendance and completing a report that must be signed by each student present, and given to the course instructor by the end of each week (late reports will not be accepted).** Report forms are available on the course web page. I will always hold a review session before each exam and the final.

Miscellaneous. All lecture and lab material can be downloaded from <http://webhost.bridgew.edu/ebrush/>. This includes all lecture and lab handouts, worksheets, and answer keys. **I DO NOT post class lecture notes.**

Sustainability. "Sustainability" is about "going green," preserving the environment, and sustaining our natural resources for future generations. Chemical Sustainability and "Green Chemistry" will be a major focus in this course, especially in the lab. In addition to green chemistry topics in the lecture and lab, you may want to explore green chemistry, our class carbon footprint, or energy/water/paper consumption. If anyone is interested, there are numerous student project and/or research opportunities that I would love to discuss with you.

CHEM 344 ORGANIC CHEMISTRY II SYLLABUS (subject to change)

Chapter 11	Alcohols and Ethers
Chapter 12	Alcohols from Carbonyl Compounds: Oxidation/Reduction
Chapter 9	Nuclear Magnetic Resonance and Mass Spectrometry (Infrared Spectroscopy Review)
Chapter 14	Aromatic Compounds
Chapter 15	Reactions of Aromatic Compounds
Chapter 16	Aldehydes & Ketones – Nucleophilic addition to the carbonyl carbon
Chapter 17	Carboxylic Acids and Their Derivatives – Nucleophilic addition-elimination reactions
Chapter 18	Reactions at the α carbon of carbonyl compounds – Enols and enolates
Chapter 19	Condensation and conjugate addition reactions of carbonyl compounds
Chapter 20	Amines

Exam Schedule. Exams will be given on these dates ONLY, so plan your schedules accordingly. You must give me a minimum two week notice of conflicts due to athletic participation or other university extra-curricular activities. I do not accept scheduling conflicts with other courses as rationale to reschedule an exam. Please note that you may begin the exams as early as 7:30 AM:

Exam I - Friday, February 10

Exam II - Friday, March 16

Exam III - Friday, April 13

Cumulative Final Exam: Friday, May 4; 8:00 – 10:00 AM

IMPORTANT DATES:

January 25: Last day to Drop/Add

February 20: No Classes – President's Day

February 22 (Wed): Monday Schedule

March 5-9: Spring Break

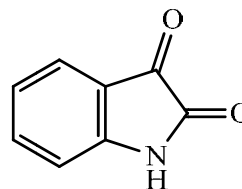
April 5: Last day to withdraw

April 16: No Classes – Patriots Day

April 30: Last Day of Classes

May 1: Reading Day

May 12: Commencement



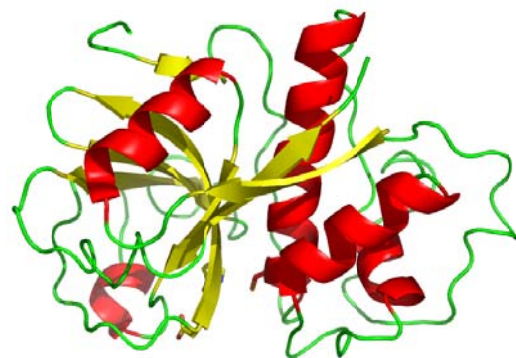
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SPECIAL EVENTS (Booster Points can be earned):

BSU Undergraduate Research Symposium, Monday, April 23, 8:00 am – 5:00 p.m., Moakley Center. All students are encouraged to attend a portion of the Symposium, and may choose to participate in a research “Scavenger Hunt” for Booster Points.

CHEM 344-002 Organic Chemistry II Web Page (<http://webhost.bridgew.edu/ebrush/>). The following supplementary course material is available on the course web page:

- Lecture Syllabus
- Lab Syllabus
- Comments from past students who took Organic Chemistry
- “Survival Guide” for Organic Chemistry
- Text reading and problem assignments
- Lab handouts and reading assignments
- Booster Worksheets
- Answer Keys to text problems, worksheets, and exams



Papaya – plant source of the model cysteine protease Papain.