CH 242 Sections A and B (Spring, 2020): Organic Chemistry

Syllabus and Course Information

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Course Web Page: http://web.colby.edu/dmthamat/ch242spring2020/

Materials:
(a) "Organic Chemistry" by Maitland Jones, Jr. and Steven A. Fleming, 5th Edition, Norton and Co. (Required)
(b) "Organic Chemistry Study Guide and Solutions Manual" by Maitland Jones, Jr., Henry L. Gingrich and Steven A. Fleming, Norton and Co. (Recommended)
(c) "ChemBioDraw" software from CambridgeSoft. (Required). For instructions to obtain a free copy, please go to http://www.colby.edu/chem/chembiodraw/
(d) “Biology and Chemistry Online Notes and Tutorials (BACON)”. (Required). Please see below for free access to tutorial and quizzes.
(e) Molecular Model Set. (Optional)

Lectures:
Section A (MWF 9:00 – 9:50 am) and Section B (MWF 10:00 – 10:50 am). It is essential that you attend the lectures, participate in class, and take good notes. These notes, and corresponding segments from the text, will be important resources to learn the material and prepare for exams.

Laboratory:
You have been assigned to one of five sections. Your overall laboratory performance will be worth 20% of the course grade. Additional details are given in the accompanying handout. Laboratory materials will be posted online on Moodle at https://moodle.colby.edu/my/. All questions related to the laboratory should be addressed to Ed Klinkerch.

Office Hours:
As announced in class, open door, and by appointment. If I am not in my office, please check my research lab (Keyes 204/206) or the X-ray Room (Keyes 307).

Problem Sets:
Problem sets will be posted on the course web page each weekend. The corresponding answer keys will be available online the following weekend. These problem sets will not be collected and graded. However, please resist the urge to look up answers without working out the problems first. Selected problems at the end of chapters will be also assigned for practice.

BACON Quizzes:
Colby has an institutional subscription to the Biology and Chemistry Online Notes and Tutorials. This program is offered to you at no charge as an additional resource for learning the material covered in this course, exploring its relevance to daily life, and honing your skills by taking online quizzes. Please note that you will not be penalized for any wrong answers you provide to the quiz questions. On the other hand, there is an “extra credit” reward for completing ALL quizzes (see Grading below). To sign up for BACON, please complete the following two steps.

1. Visit https://learnbacon.com/ and click ‘Sign Up’ to create your account. If you already have a BACON account, you can sign in and then follow instruction #2.

2. Follow the instructions and then register for the appropriate course. You will need a course pin number (which is CH242S20) to access the tutorials and quizzes.

The BACON system is simple and automated. After you sign up, you will receive emails when tutorials become available. If you encounter any problems related to BACON during the quarter, please email support@learnbacon.com for help.

Department Policies:
The chemistry department has a policy regarding attendance, missed exams, and academic honesty that will apply to this course. Please familiarize yourself with these policies that are posted online at http://www.colby.edu/chem/about/chemistry-attendance-and-exam-policy/.
Grading: There will be three, one-hour exams and a cumulative two-hour final exam. Make-up exams are not available so a score of zero will be assigned to missed exam(s). If you need to miss an hour exam due to a doctor-certified medical emergency, you will be given a score that is the average of your other hour exam scores and the final. Exam dates and point values are given below.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Points</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>100</td>
<td>Monday, March 2</td>
<td>5:30 – 6:30 pm</td>
</tr>
<tr>
<td>Exam 2</td>
<td>100</td>
<td>Friday, April 3</td>
<td>5:30 – 6:30 pm</td>
</tr>
<tr>
<td>Exam 3</td>
<td>100</td>
<td>Tuesday, April 28</td>
<td>5:30 – 6:30 pm</td>
</tr>
<tr>
<td>Final</td>
<td>150</td>
<td>Sunday, May 17</td>
<td>6:00 – 8:00 pm</td>
</tr>
<tr>
<td>Lab</td>
<td>100</td>
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</tbody>
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[BACON: 5 points will be added to your lowest hour exam (raw) score for completing ALL assigned quizzes before computing your grade as follows.]

Your total score in the course (out of 500 points) will be calculated, after making BACON adjustments, using the two methods given below. The formula that gives you the higher score will determine your course grade.

Formula I: Two “best” hour exam scores + half of remaining hour exam score + final exam score + lab score.

Formula II: All three hour-exam scores + two-thirds of final exam score + lab score.

Please note: There is an incentive program that rewards you for improving your performance from one exam to the next. Thus, if you score higher in exam 2 than exam 1, your exam 1 score will be revised upward to the average of the two exam scores. For example, if you score 70/100 in exam 1 and 90/100 in exam 2, your exam 1 score will be raised from 70 to 80 points (the average of 70 and 90). Similarly, an improved score in the final exam can raise your score in the third exam which can then raise your score in the second and so on …. You will not be penalized, however, if your score in an exam is lower than in the previous one. All of these adjustments will be made after adding BACON points to your lowest hour exam raw score.

Intellectual Honesty: Honesty, integrity, and personal responsibility are cornerstones of a Colby education and provide the foundation for scholarly inquiry, intellectual discourse, and an open and welcoming campus community. These values are articulated in the Colby Affirmation and are central to this course. Students are expected to demonstrate academic honesty in all aspects of this course. Academic dishonesty includes, but is not limited to: plagiarism (including quoting sources without quotation marks around the borrowed words and a citation); presenting another’s work as one’s own; buying or attempting to buy papers or projects for a course; fabricating information or citations; knowingly assisting others in acts of academic dishonesty; violating clearly stated rules for taking an exam or completing homework; misrepresentations to faculty within the context of a course; and submitting the same work, including an essay that you wrote, in more than one course without the permission of instructors. Academic dishonesty is a serious offense against the college. Sanctions for academic dishonesty are assigned by an academic review board and may include failure on the assignment, failure in the course, or suspension or expulsion from the College. For more on recognizing and avoiding plagiarism, see: libguides.colby.edu/avoidingplagiarism

Resources: Please see me as soon as possible if you have any questions about the course or lab material. Help is also available at the Chemistry Help Center, staffed by experienced and knowledgeable chemistry majors, which is open Monday through Thursday in Keyes 104 from 7:30 - 9:30 pm. These students will help answer your questions and work problems with you. If you need additional help beyond what is provided by the Help Center and office hours, please consult Ed Klinkerch, Lisa Miller (Keyes 310; lmmiller@colby.edu), or me to request a tutor. Free tutorial help will be provided to you if we determine that it is necessary. The number of tutors available is limited and we will try to assign them according to the level of student need. Room 142 in the Olin science library also has a number of organic chemistry texts, relevant to lecture and laboratory, available for your use. This room is well suited for group study and is equipped with a blackboard that you may use to work out problems. Old exams and answers, as well as class handouts, will be provided online.
Topics: The approximate order of topics to be covered is given below.

- Chapter 10: Electrophilic Additions to Alkenes
- Chapter 11: More Addition to $\pi$ bonds
- Chapter 12: Radicals
- Chapter 9: Spectroscopy
- Chapter 13: Dienes and Conjugation
- Chapter 14: Aromaticity
- Chapter 15: Substitution Reactions of Aromatic Compounds
- Chapter 18: Carboxylic Acid Derivatives
- Chapter 19: Carbonyl Chemistry II: Reactions at the $\alpha$-Position
- Chapter 23: Reactions Controlled by Orbital Symmetry

Some Advice: CH242 builds upon, and extends, the material covered in CH241. Thus, a sound knowledge of the concepts and reactions discussed last semester is vital to your success in CH242. This semester there will be a heavy emphasis on reaction mechanisms, spectroscopy, and syntheses. Furthermore, the ability to draw flawless Lewis structures and push arrows, among other things, will be indispensable skills. Recognizing patterns, and applying them, rather than rote memorization, will be the key to your success in this course.

Perseverance also will be an important ingredient for success. Stay involved and keep a positive attitude. You are more likely to learn the material if you can find ways to enjoy it. Yes, it is a challenging course but there’s no reason why you can’t master the material. The course can, in fact, be a lot of fun if you give it a chance.

Welcome to CH242, and good luck!