CHEM 232 – Organic Chemistry II Lecture (version 8-20-2018)
Fall 2018, CRN 10215, Section 01
MWF, 11:00 AM – 11:50 AM, RSS 252

Instructor: Prof. Brooke A. Van Horn
E-mail: vanhornba@cofc.edu (best way to reach me if not in my office)
Office: School of Science and Math Building (SSMB) 104

Instructor Schedule: I want you to ask questions so that you can be successful in this course! However, if my door is closed and/or if I post that I am currently busy on my door, please respect this need for dedicated time and come back later, attend scheduled office hours, or send an e-mail to have your concerns addressed.

Office Hours (in SSMB 104): M 12:30-2 PM; W 1:30-3 PM; Th 1:30-2:30 PM; other times by appointment only!


OAKS: Course materials, including the syllabus, some extra problem sets, study guides, handouts, etc. will be made available through the OAKS system accessed via MyCharleston.

Co-Requisite and Drop Policy: CHEM 232L Laboratory is a pre- or co-requisite of this lecture course. If you drop either course, then you must also drop the other. The last day to withdraw from the course with a grade of “W” will be Wednesday, October 24th, 2018.

Course Technical Goals: This second semester course is part of a two-semester sequence and is taught to introduce the structure, properties, and reactivity of the class of chemical compounds encompassed by the descriptor “organic.” Included in this classification are biomolecules, many synthetic drug molecules, plastics/polymers, and industrial solvents, among many others. The knowledge of the basic concepts and learned study skills from the first semester course, CHEM 231/HONS 192, are the foundation from which you will build upon in this second semester course, CHEM 232, and will prepare you for success in advanced chemistry, biochemistry, and chemical/molecular biology courses when approached with similar diligence. Please see the learning outcomes at the end of this document for more specific details.

IMPORTANT: This course moves very quickly and the material presented/learned last week is the foundation for the material being covered this week. Be prepared to study every day (approximately 3 h for every hour of lecture to complete reading, lecture review, and assigned problems) and come to review sessions and office hours with your questions. Working problems should be the BULK of your study time.

As a student in CHEM 232, the burden of the learning is on you; as the instructor, I am here to present and explain the course material to the best of my ability and to help you master the material by providing examples and problem sets to practice applying the concepts.
We will be covering the following textbook chapters/material topics in CHEM 232 during our in-class lectures:

**Chapter 13** – Electrophilic and Nucleophilic Aromatic Substitution (AS REVIEW/PRACTICE)
**Chapter 14** – Spectroscopy (tentative end Exam #1)
**Chapter 15** – Organometallic Compounds
**Chapter 16** – Alcohols, Diols, Thiols
**Chapter 17** – Ethers, Epoxides, and Sulfides (tentative end Exam #2)
**Chapter 18** – Aldehydes and Ketones: Nucleophilic Addition to the Carbonyl Group
**Chapter 19** – Carboxylic Acids
**Chapter 20** – Carboxylic Acid Derivatives: Nucleophilic Acyl Substitution (tentative end Exam #3)
**Chapter 21** – Enols and Enolates
**Chapter 22** – Amines (tentative end Exam #4)
**Chapter 23** – Phenols

**Attendance Policy:** The grade of "WA" due to excessive absences WILL NOT be used in this course as it is unnecessary. It is very difficult to be successful in organic chemistry without attending the lectures, where you will be practicing the art of thinking in, translating, and writing/drawing organic chemistry. You are responsible for learning a substantial amount of required material for this course (most of which will be covered both in lecture and in the textbook, but some of which may be in lecture only or in the textbook only.)

This being said, there are **NO excused absences**. If you do miss class, it is your responsibility to recover the required material, possibly from classmates. Additionally, please arrive to class on time. Late arrivals to quizzes, tests or the final exam will not be given extra time and the instructions will not be repeated. Any work/points missed (including exams, regardless of reason) will be given a grade of zero (0) for the final grade.

**Grading Policy:** Earning the minimum percentage to achieve an “A” necessitates strong study skills and diligence in working the suggested practice problems which will prepare you to perform well on the evaluation tools in the course including: (a) four in-class exams, (b) online homework, (c) other small point earning opportunities, and (d) one ACS standardized final exam.

Two methods to determine the final grade percentage will be considered (as follows) with the final grade being assigned from the one giving the higher score.

**Method I:**
- Four (4) Exams each 15 % of overall grade 60 %
- One (1) Final Exam 20 % of overall grade 20 %
- Other Work (cannot be dropped) 10 % of overall grade 10 %
- Assigned Homework (not dropped) 10 % of overall grade 10 %
- Total Grade 100 %

**Method II:** (Beneficial for a missed or poor exam)
- Three (3) Exams – highest each 15 % of overall grade 45%
- One (1) Final Exam 35 % of overall grade 35 %
- Other Work (cannot be dropped) 10 % of overall grade 10 %
- Assigned Homework (not dropped) 10 % of overall grade 10 %
- Total Grade 100 %

Additionally, any concerns or questions regarding the correctness of grades or individual graded work are to be addressed OUTSIDE of class and by appointment, not in common office hours for privacy reasons. Any requests for the addition of points back onto graded work will require (1) the original graded work, with NO additional marks after returned to the student, and (2) a formal typed document describing in detail where the mistake in
grading was made and why (in chemical terms) the graded work demonstrates the correct answer. Lastly, requests to regrade work will only be considered if the above guidelines are followed and if the potential benefit of the regrade would result in at least 2 points on an exam (usually worth 100 points.)

**Exams:** Four in-class exams will be used to evaluate your level of understanding of the material presented in lecture, the readings in the text, and the practice problems assigned. The exact exam format will vary from test to test, but will contain multiple choice questions, short answer/ranking problems, drawing of mechanisms, and at least one larger "bring-it-all-together" free response problem. The exams will be given on the following dates:

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<thead>
<tr>
<th>Date</th>
<th>Exam Date</th>
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<tbody>
<tr>
<td>Friday,</td>
<td>Friday,</td>
</tr>
<tr>
<td>Sept 14th</td>
<td>Oct 12th</td>
</tr>
<tr>
<td>Friday,</td>
<td>Nov 2nd</td>
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<td>Nov 30th</td>
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</tbody>
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**Other Work:** These point-earning opportunities will be presented in class, online, or as take-home assignments to allow you to demonstrate how well you are keeping up with the day-to-day course material and they may be unannounced. These assignments may take the form of group work, quizzes, individual problems etc. but will not occur more than once every 2-3 lectures, with each piece of work being worth approximately 2% of your total course grade. The total points accumulated will be used to calculate a percentage and weighted as 10% of your total grade. You will be able to drop your lowest score before the average is calculated.

**Homework:** There are a few important levels of “homework” that you will be asked to complete.

1. Each chapter will be assigned a set of GRADED online homework to be completed by the due date noted within each Connect assignment. These assignments are NOT accepted past the due date – no exceptions. They can be submitted twice but do try to put in the effort the first time. *(weighted as 10% of grade)*

2. I will provide a list of *suggested* problems from the textbook for you to work – these should be done by hand and brought to me when you do not understand them from the solutions manual. As you will hear from upperclassmen and faculty alike, organic chemistry is learned through SOLVING PROBLEMS not by memorizing reagents or mechanisms. These suggested problems are NOT GRADED.

One online homework may be dropped and the total points accumulated from the online assignments will be used to calculate a percentage and weighted as 10% of your total grade.

**Final Exam:** The final exam will be an ACS-standardized multiple-choice final – 70 questions in 110 minutes. The date/time will be as indicated on the college-wide Academic Calendar – 8 AM Wednesday December 12th.

**Grading Scale:** The grading scale below reflects the grade percentages necessary to achieve each letter grade:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>100-93</td>
</tr>
<tr>
<td>A-</td>
<td>92-90</td>
</tr>
<tr>
<td>B+</td>
<td>89-87</td>
</tr>
<tr>
<td>B</td>
<td>86-83</td>
</tr>
<tr>
<td>B-</td>
<td>82-80</td>
</tr>
<tr>
<td>C+</td>
<td>79-77</td>
</tr>
<tr>
<td>C</td>
<td>76-73</td>
</tr>
<tr>
<td>C-</td>
<td>72-70</td>
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<tr>
<td>D+</td>
<td>69-67</td>
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<tr>
<td>D</td>
<td>66-63</td>
</tr>
<tr>
<td>D-</td>
<td>62-60</td>
</tr>
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<td>&lt;60</td>
<td></td>
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</tbody>
</table>

Finally, grades will be posted online through MyCharleston as FERPA (The Family Educational Rights and Privacy Act) restricts instructor ability to give these grades by posting, e-mailing, or over the phone.

**Students with Disabilities:** Please contact me and stop by my office hours (as early as possible in the course) if you have been approved to receive accommodations through SNAP Services. Consult the Student Guide to SNAP Services for more information: [http://disabilityservices.cofc.edu/documents/student-guide.pdf](http://disabilityservices.cofc.edu/documents/student-guide.pdf)
**Honor Code Policy:** Students are expected to be aware of and conform to the standards of the College of Charleston Student Honor Code Policy (linked from http://studentaffairs.cofc.edu/honor-system/index.php). In addition, students in this course are also expected to be conscious of and conform to the standards provided by the Department of Chemistry and Biochemistry Policy on Scientific Integrity (link on the Department main page and provided in laboratory class).

**Electronic Device Policy:** One aspect of being a member of a community of scholars is to show respect for others by the way you behave and do your part to create or maintain an environment that is conducive to learning. Allowing your cell phone to ring or texting/messaging in class are examples of inappropriate behavior because it distracts your classmates and thus degrades their overall classroom experience. For the sake of your classmates, you are expected to **turn off your cell phone** or set it to mute/silence BEFORE you enter class — every class. I reserve the right to ask you to leave if I believe your attention or the classroom environment is compromised through electronic device use.

**Essential Student Learning Outcomes for CHEM 231 and CHEM 231L:**
First Semester of Introductory Organic Chemistry Lecture and Laboratory

The successful student is expected to (Lecture):
- Demonstrate basic communication skills within organic chemistry for example structure, nomenclature, mechanisms, reaction schemes
- Define and use fundamental concepts associated with physical organic chemistry
- Using foundational skills of organic reactions to predict organic reaction outcomes

The successful student is expected to (Laboratory):
- Demonstrate awareness of and compliance with safety standards within organic chemistry laboratory as demonstrated by weekly deportment and safety inspections
- Apply ad perform the basic processes used in organic chemistry including distillation, recrystallization, extraction, and spectroscopic acquisition and analysis
- Succinctly summarize experimental findings obtained from in-lab chemical synthesis and experiments

**Essential Student Learning Outcomes for CHEM 232:**
Second Semester of Introductory Organic Chemistry Lecture

The successful student is expected to:
- Demonstrate intermediate communication skills within organic chemistry for example structure, nomenclature, mechanisms, reaction schemes
- Draw and interpret mechanisms for reactions of increased sophistication
- Integrate knowledge and principles of organic reactions and reactivities to make reasonable predictions about likely outcomes when presented with related chemistry