CHEM 232 – Organic Chemistry II Lecture (version 7-1-2019)
Summer II 2019, CRN 30062, Section 01
MTWRF, 8:00 AM – 9:45 AM, SSMB 138

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 10:30 AM – 12 PM; T-Th 1:30-2:30 PM; Sundays (TBA)


OAKS: Course materials, including the syllabus, any 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, July 24th, 2019.

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 from CHEM 231)
Chapter 14 – Spectroscopy (IR, MS, NMR and UV-Vis)
Chapter 15 – Organometallic Compounds (end Exam #1)
Chapter 16 – Alcohols, Diols, Thiols
Chapter 17 – Ethers, Epoxides, and Sulfides
Chapter 18 – Aldehydes and Ketones: Nucleophilic Addition to the Carbonyl Group (end Exam #2)
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.)

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 practice problems which will prepare you to perform well on the evaluation tools in the course including: (a) four exams, (b) written and online homework, (c) other small point earning opportunities including in-class and out-of-class participation activities, 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:**

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<thead>
<tr>
<th>Component</th>
<th>Percentage of Overall Grade</th>
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<tbody>
<tr>
<td>Four (4) Exams</td>
<td>60%</td>
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<tr>
<td>One (1) Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Homework (one drop per category)</td>
<td>10%</td>
</tr>
<tr>
<td>Participation</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total Grade</strong></td>
<td>100%</td>
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**Method II:** (Beneficial for a missed or poor exam)

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage of Overall Grade</th>
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<tbody>
<tr>
<td>Three (3) Exams – highest</td>
<td>45%</td>
</tr>
<tr>
<td>One (1) Final Exam</td>
<td>35%</td>
</tr>
<tr>
<td>Homework (one drop per category)</td>
<td>10%</td>
</tr>
<tr>
<td>Participation</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total Grade</strong></td>
<td>100%</td>
</tr>
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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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<th>Monday,</th>
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<th>Monday,</th>
<th>Friday,</th>
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<td>July 15th</td>
<td>July 22th</td>
<td>July 29th</td>
<td>August 2nd</td>
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**Homework:** There are a few important levels of homework that you will be asked to complete.

1. Each chapter will have one or more “pre-lecture” LearnSmart modules. These online guided uses of SmartBook on McGraw-Hill’s Connect platform are to gear your reading/studying for the lectures that will follow. **Completion of these modules will be weighted as 25 % of your Homework grade.**

2. Each chapter will be assigned a set of GRADED online Connect homework to be completed by the due date noted within each Connect assignment. These assignments are NOT accepted past the due date. **Completion of these Connect assignments will be weighted as 25 % of your Homework grade.**

3. Additionally, both small and larger bring-it-together written homework sets will be distributed online. These extra problems sets will target higher level problem solving and can be done cooperatively, so long as the names of each collaborator are acknowledged. Each student must turn in a written set of worked problems for these written assignments to be uploaded electronically as a PDF in a labeled OAKS dropbox. These are GRADED for effort as 0 or 100 (however I reserve the right to change that if effort drops.) **Completion of these written assignments will be weighted as 50 % of your Homework grade.** Solutions to these assignments will only be made available after assignments are due. You are welcome to discuss them among yourselves or to ask questions of me or your peers prior to the due date. I will not however “give” you the answers! 😊

4. I will provide a list of suggested problems from the textbook for you to work – these should be done by hand and posed to me when you do not understand them from the solutions manual. **These suggested problems are NOT GRADED but can be used in building exam problems – they are very worth doing!**

**NOTE:** One homework from each of the first three categories may be dropped. The total points accumulated from the online and written assignments will be used to calculate a total homework percentage and **weighted as 10 % of your total course grade.**

**Participation:** Participation in the course is required as 10% of your overall grade. It is very difficult to be successful in organic chemistry without engaging with lecture materials, where you will be practicing the art of thinking in, translating, and writing/drawing organic chemistry. To ensure active participation the course, there will be daily required engagement activities, including in class “minute quizzes” over recent material, discussion thread posts/responses, OAKS submissions, to name a few modes of engagement. Details for each day’s required engagement will be provided throughout the term – please use the OAKS checklists and lecture announcements to make sure you are turning in to all that is required!

**Final Exam:** The final exam will be an American Chemical Society (ACS) standardized final – 70 multiple choice questions in 110 minutes – and is scheduled on the Academic Calendar for **Saturday 8/3/19 from 8-11 AM.**

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

- A: 100-93
- A-: 92-90
- B+: 89-87
- B: 86-83
- B-: 82-80
- C+: 79-77
- C: 76-73
- C-: 72-70
- D+: 69-67
- D: 66-63
- D-: 62-60
- <60: F
Final 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](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. You are expected to mute/silence your phone 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 and 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