

Chem 233 – Fall 2019
ACS Exam Information
Osborn's Section Only

This semester, you have the option to take the ACS Organic I final exam. You are not required to attempt the ACS final. Once you take the ACS final, your exam grade and final course grade will be calculated and posted. If you are happy with your final grade, then you are done for the semester. If you believe you can do better by taking the regular Chem 233 final exam that I write, then you can come and take this exam during the regularly scheduled final exam time. If you take the regular final exam, its score will be used in your final grade calculation regardless of whether it is higher or lower than your ACS exam grade.

ACS Final Exam:

Friday December 13, 2019 from 10:30 am – 12:30 pm in MHH G20

Regular Course Final Exam:

Tuesday December 17, 2019 from 2:00 – 4:00 pm in MHH G20

The ACS final exam will consist of 70 multiple-choice questions (a-d) covering nearly all organic chemistry I topics. If there are any questions that we did not cover the material for in class, then these questions will be dropped when calculating your final exam grade.

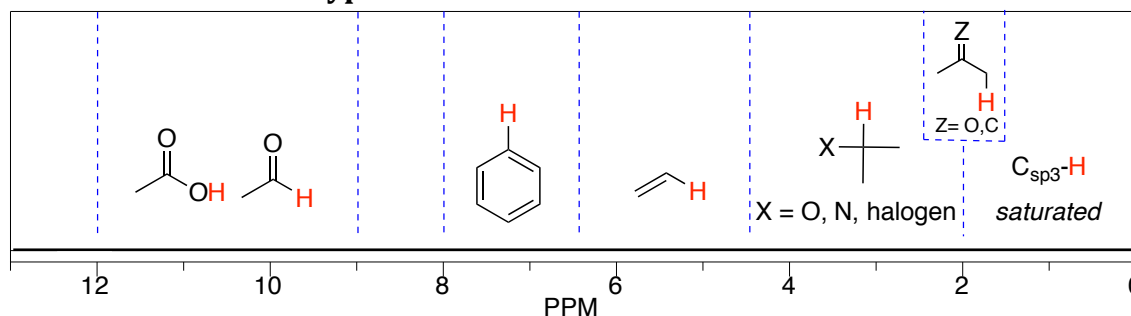
ACS does not allow supplemental data to be provided on the exam. You will not be allowed to use any notes, calculators, or model kits.

You will not be provided with a periodic table or IR/NMR data tables. If you know the following general information, you should be equipped to answer any of the spectroscopy questions.

Common IR Stretching Frequencies

OH & NH Stretch	~3300 cm ⁻¹ (relatively broad)
Csp ² -H Stretch	Just above 3000 cm ⁻¹
Csp ³ -H Stretch	Just below 3000 cm ⁻¹
C≡C Stretch	~2100 cm ⁻¹
C=O Stretch	~1700 cm ⁻¹
C=C Stretch	~1650 cm ⁻¹

Typical Proton NMR Chemical Shifts



Just know the basic trend. Most upfield is the saturated C-H, then the allylic C-H, next comes C-H with an electronegative atom attached. In the 4-8 region you have vinyl protons then aryl protons. Finally in the 9-12 region you have aldehyde and carboxylic acid protons.

Study Materials

- There is an organic I review posted on the course website.
http://community.wvu.edu/~josbour1/pages/234_Materials/handouts/Org%20I%20Review.pdf
- I have put together a practice exam on TopHat that you can take. There is a graded version that you can take as an actual exam with one attempt. There is also a review version that is ungraded and has unlimited question attempts. *The graded version* is just for your benefit and has no actual impact on your TopHat or course grade.
- Official study guide book from the ACS Exams Institute:
<http://uwm.edu/acs-exams/students/student-study-materials/study-guide-books/>

The study guide from the ACS Exams Institute cost \$\$\$\$. I want to make you aware of this resource, but don't necessarily recommend it. The study guide contains both organic I & II material and does not separate the content by course, which can be confusing. Also, the practice questions in the study guide often deal with subtle details and exceptions, which has the potential to cause panic when preparing for the actual exam. In my opinion, the actual exam is much more straight-forward and covers a general survey of organic I topics.

If you would like to see the official study guide from the Exams Institute, I have a couple of copies in my office that you are welcome to stop by and take a look at. Also, there are a few copies of the book on reserve in the downtown library.

Topics Not Covered in Lecture:

There are a few organic I topics that could appear on the ACS exam that we did not have time to cover in class this semester. I will post short review videos for each of these topics so that you know the fundamentals prior to the ACS exam.

- Boiling Points & Intramolecular Forces
- Heat of Hydrogenation
- Polymers
- Mass Spectrometry
- IR Spectroscopy (covered in lab)

For the Exam:

- Bring a pencil and a photo ID. You do not need anything else!
- Make sure you know your WVU student ID # so you can bubble it in on the bubble sheet.
- I will provide the ACS Exam, bubble sheet, and Scrap Paper.
- **You are not allowed to write in the ACS Exam booklet! All work must be done on the scrap paper.**

Grading:

Your ACS final exam grade will be calculated as a simple percentage. There will be no special scaling or percentile adjustments.

$$\text{Score} = \frac{\text{\# of questions answered correctly}}{\text{total \# of questions}} \times 100$$

Once I have reviewed the actual exam, if I feel there are any questions that you were not properly equipped to answer, then these questions will not be counted (deducted from the total # of questions).