

Organic chemistry I – CHEM 342 – spring 2024 (1/16/2024 – 5/2/2024)
Monday, Wednesday, Friday from 11:30 am – 12:25 pm in Snell Hall 4114

Instructor:

Dr. Lawrence Hill

Email: lawrence.hill@wku.edu (Email is the best way to reach me. I try to respond by close of the following business day)

Office: KTH 4058; Phone: 270-745-2136; Zoom meeting ID: 403 241 6374

Office hours will be posted on Blackboard during the first week of classes and then updated as needed.

Course materials:

1. **OpenStax Organic Chemistry – A Tenth Edition**

- You can find a pdf of the book here: <https://openstax.org/details/books/organic-chemistry> (look for “download a pdf” on the left). ISBN-13: 978-1-951693-98-5.

2. **ACS Organic Chemistry Exams – The Official Guide – Second Edition** (ISBN: 978-1-7327764-1-8)

- This book is the study guide for the American Chemical Society’s national standardized exam on organic chemistry, and we will use a full year ACS organic chemistry exam as our final exam in CHEM 342. I recommend working problems from the ACS book to supplement the OpenStax book. Questions from the ACS study guide may be used on quizzes and exams, but only those questions that cover learning objectives already seen in openstax or in class.
- You can purchase the ACS book online (<https://acsexamsinstitute.com/organic-chemistry---study-guide/>) or through the WKU Chemistry Club in the chemical stockroom.

3. **Portable model kit**

- You will be allowed to use a hand-held model kit for quizzes and regular exams with the exception of the ACS final exam. Any model kit is fine. Here is a link to a model kit that looks similar to mine.
<https://www.walmart.com/ip/Chemistry-Molecular-Model-Kit-Organic-and-Inorganic-Modeling-Set-Science-Teaching-Learning-Aids-for-Teacher-Students/1373250192>
- Here is a link to a virtual model kit that may help when you are studying. <https://chemagic.org/molecules/amini.html>

Prerequisites:

CHEM 340 (C or better); **Corequisite:** CHEM 343

Course description:

Standard reactions, mechanisms, and nomenclature of organic chemistry will be covered in this course, which includes chapters 14 – 23 of OpenStax Organic Chemistry, 10th Edition.

Course learning objectives:

By the end of this course, students will learn to:

1. Use the vocabulary of organic chemistry. (nomenclature)
2. Draw correct structural representations of organic molecules. (structure)
3. Write reasonable mechanisms and predict products with correct stereochemistry. (reactions)

Grading: (Your grade will be determined based on 500 possible points in this course)

• **Mid-term exams = 400 points. (Summative assessments)**

The content is divided into four units, each with one exam worth 100 points. Exam questions are chosen to assess the learning objectives posted on Blackboard and many of these questions are based on textbook problems and online homework problems. **There are no make-up exams in this class without prior agreement from the instructor.** Missed exams will be counted as zeros, and your quiz grade will become much more important if you miss an exam (see below).

○ **Quizzes (Formative assessments to help you keep up with the practice problems)**

Quizzes are graded so that they can only help your grade in this course, and three quizzes are dropped to encourage students to keep trying to improve their grades throughout the semester. Nine quizzes are scheduled during the semester. Your top **six** quiz grades will be used to calculate your average quiz grade (%), and this quiz grade will replace your lowest mid-term exam grade at the end of the semester only if that improves your final grade. **There are no make-up quizzes without prior agreement from the instructor.** Missed quizzes (excused or otherwise) will be scored as zeros which will count towards your quiz grade only if you don't have six higher quiz scores; exceptions may be made for students with four or more excused absences that coincide with quiz dates.

• **Cumulative final exam (ACS exam) = 100 points. (Cumulative assessment and evaluation of learning)**

A nationally standardized exam for organic chemistry. Multiple choice format with 70 questions over 110 minutes. Your percentage score on this exam will be calculated by multiplying the number of correct answers by two. This means that you can in principle earn over 100% on the ACS final (up to 140 points = 40 bonus points). Note that the 50% percentile nationally is around 35/70, which translates to 70% in this course after adjusting the grade.

- **Example calculation.**
 - $100 \times (\text{points earned}) / (500 \text{ points possible}) = \text{percent}$
 - or, $(\text{points earned}) \times 100 / (500 \text{ points possible}) = \mathbf{0.2 \times (\text{points earned}) = \text{final percentage}}$
 - final grade in the course (percent) = $0.2 \times (\text{points earned}) = 0.2 \times [(\text{top 3 regular exams}) + (\text{greater of lowest exam or percentage of top 6 quizzes}) + (\text{modified percentage score from ACS exam})]$

Letter grade scale (final grades are rounded to the nearest whole number at the end of the course):
A = (100 – 90%), B = (89 – 80%), C = (79 – 65%), D = (64 – 50%)

Honors section:

Students in the honors section will participate in an activity that includes a service component such as weekly time for group study (virtually or in person). Honors students are expected to fulfill their responsibilities without constant oversight, but I may check in periodically. ***I sincerely hope that you make the most of this time and actively participate in group learning.*** Details of the honors requirement may be modified during the semester, but it should not take more than 1 – 2 hours per week. I am open to suggestions for different honors requirements provided that they have service components.

Some tips to succeed in this course:

- **Schedule time to work problems every day.** It is important to build skills rather than just understanding the material; consistent practice and self-assessment are important for success. The skills we will learn are cumulative in this course, and you will need to review problems from previous chapters when you recognize that a skill set needs improvement. The goal is to create consistent, healthy, study habits. Practice is the best way to spend time on this organic chemistry.
- **Prepare for class** with the assigned reading and practice problems. Lectures will be much more beneficial to you if you have some familiarity with the material and are ready to ask questions in class. Lectures and exam questions closely follow the text, and the ACS study guide provides extra practice problems and short lessons. I strongly recommend making your own outline of the book by starting with the table of contents and filling in the details as you read. You are more likely to retain the material if you make something from it.
- **Ace the quizzes!** Work problems in the text and online until you can answer them without any errors. Re-work problems you answer incorrectly later, even if you understand what you did wrong. Repeat until you solve each problem without any mistakes. It is important to revisit problems until you can solve them without errors or notes, just like exams.
- **Ask questions** and speak up if you are confused. Your peers will thank you for helping them understand.
- **Make an effort to enjoy the material.** Being calm or happy facilitates learning. Search online for, “how stress affects memory and learning,” or you can read articles like this one: <https://tinyurl.com/2rshzceh>.
- **To summarize:**
 - **Do:** read before class, attend lecture, work problems every day, write notes describing any errors in your solutions to practice problems, rework problems that have any errors, ask questions, come to office hours.
 - **Don't:** miss lecture, work each problem only once, view the answer before writing your own answer, erase your wrong answers in your notebook.

Students with disabilities:

In compliance with university policy, students with disabilities who require accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, 1074. SARC can be reached by phone at 270-745-5004 [270-745-3030 TTY] or via email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

Title IX discrimination and harassment

Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) and Discrimination and Harassment Policy (#0.2040) at:
<https://wku.edu/eoo/documents/titleix/wkutitleixpolicyandgrievanceprocedure.pdf>
https://wku.edu/policies/hr_policies/2040_discrimination_harassment_policy.pdf.

Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121. Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are “Responsible Employees” of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, contact WKU's [Counseling and Testing Center](#) at 270-745-3159.

Attendance:

Please show up on time, stay the entire class period, and wait until class is dismissed to pack your belongings. Please leave quietly and respectfully if necessary. I strongly recommend attending every lecture.

Ogden College attendance statement:

The faculty and staff of Ogden College of Science and Engineering are committed to providing you with learning experiences and opportunities. You must assume ownership of your education and be an active participant in the classroom and laboratory to take advantage of these opportunities. Active participation requires you to attend. Scientific studies have shown that attendance during scheduled classroom and laboratory meetings is directly correlated to your performance on assignments and exams and the potential to earn higher grades. Additionally, if you do not regularly attend class, you are missing important information about course topics, due dates, and assignment details that are crucial to your success in the course. Therefore, as a student enrolled in an Ogden course, you are expected to attend every class meeting.

Technology (e.g., phones, computers, tablets)

Taking notes on paper helps build skills for the exams and allows you to communicate unambiguously. Using a stylus on tablet is a close approximation of drawing, but it is not the same. While tablets may be used for notetaking, I do not recommend laptops for this course since we need to build drawing skills. I will ask you to sit near the back of the class if you choose to use a laptop that does not lay flat on your desk so that the screen does not distract students sitting behind you. Please do not use your phone in class.

Acceptable behavior:

You are expected to prepare for class, interact with your peers, attend class, ask relevant questions, participate in guided discussions, and be a good citizen. Any other behavior is likely to be unacceptable.

Academic dishonesty (<https://www.wku.edu/handbook/academic-dishonesty.php/>):

“Students who commit any act of academic dishonesty may receive from the instructor a failing grade in that portion of the course work in which the act is detected or a failing grade in a course without possibility of withdrawal.”

Changes to the syllabus

I reserve the right to modify the syllabus throughout the semester. I will inform you of any changes through Blackboard.