# CHEM 2021 - Organic Chemistry Laboratory

**Text Book:** Modular Laboratory Program in Chemistry, H. A. Neidig, Publisher.

**Other Sources:** [D2L](https://elearn.etsu.edu/) and hand-outs

**Brief Course Objectives:**

* To learn basic techniques of practical organic chemistry and its underlying principles
* To learn how to collect and analyze experimental data.
* To learn how to report the results in a technical language and format.

**Assignments:**

It is essential plan carefully for each experiment before attending lab. Read all assigned background material in the text and prepare appropriate notes in lab notebook.

**Notebook:**

You are required to have a bound laboratory notebook to be used for pre-lab preparation (e.g. notes regarding the experimental procedure, tables of physical constants for reagents and products, etc.), and for recording your data and observations during the laboratory period. Your notebook is also the primary source from which individual short reports and formal reports are prepared. Choose a notebook that has sewn-in pages (NOT a spiral notebook or loose-leaf paper), and you should reserve the notebook only for organic lab. A standard composition notebook is ideal for this purpose. Note that it is acceptable to use the same notebook for both Organic 2011 and 2021 labs.

**Grading:**

Exams 40%

Short Report Forms 15%

Pre-lab assignments 5%

Formal Reports 20%

Laboratory Notebook 10%

Lab Technique 10%

Lab exams will be based upon lab activities and the underlying principles. Short Reports are based upon individual laboratory activities and are due at the end of lab period when experiment is completed. Short report forms are available on the D2L course web page under "Course Documents", and must be printed out prior to each experiment. Two Formal Reports are required during the semester. Formal reports must be typed; the format of the reports will be explained in pre-lab lectures. Laboratory notebooks will be evaluated at least twice throughout the semester. Lab Technique grade is based upon your general laboratory performance including attendance, promptness, preparedness, organization, safety practices, etc.

**Grading Scale:**

A = 93 - 100% C+ = 77 - 79%

A- = 90 - 92% C = 74 - 76%

B = 84 - 86% C- = 70 - 72%

B+ = 87 - 89% D+ = 60 - 69%

B- = 80 - 83% D = 50 - 59%

 F = < 50%

**Attendance:**

You are expected to make every effort to attend laboratory. Make-up labs will be authorized only for very special reasons (i.e., serious illness, death in family, etc.), and it is the responsibility of the student to document the reason of absence. Written authorization must be obtained from your lab instructor. Make-up of missed lab must be completed within one week. Additionally, it is your responsibility to obtain permission from the instructor of the section you plan on attending prior to showing up in the lab. A total of three or more absences will result in a failing grade for the course.

**Lab Safety:**

* Safety glasses must be worn at all times in the lab. You must purchase your own. Safety glasses are for eye protection. If you are caught in the lab without safety glasses, you will receive one warning. Any further offense during that lab period will result in dismissal from the lab and a grade of zero for that experiment.
* Long hair must be confined and not allowed to hang loose.
* Proper shoes (no sandals or open-toed shoes, even with socks) must be worn.
* In case of fire or accident, notify the instructor at once. Be familiar with the emergency equipment in the lab (such as safety showers, eye-wash fountains, fire extinguishers, etc.).
* Do not eat or drink in the lab.
* Never taste or try to smell any lab substance. Exercise great precaution if you are asked to note the odor of a specific substance.
* Be sure to dispose of chemical wastes properly! Only water goes in the sink. Do not throw broken glass in trashcans. There is a special broken glass container for that purpose.
* In case of mercury spill (mainly because of a broken thermometer), do not try to clean it up. Immediately notify the lab instructor and/or the stockroom personnel to arrange for special clean up procedure.
* Read and understand TECH 700: Practicing Safety in the Organic Chemistry Laboratory in the textbook.

**Additional Notes:**

Although CHEM 2021 (Lab) is a separate course from CHEM 2020 (Lecture), the lecture is a co-/pre-requisite for the lab; in case of dropping the lecture, you must also drop the lab. Read and sign the lab safety rules form. Repeated unsafe behavior in the lab will result in expulsion from the course.

**Keeping a Good Notebook:**

If you were working in a research laboratory, your lab notebook could be the most important scientific document that you write. In legal cases, it is treated as a legal record of your experiments, and is sometimes used to prove when and how you conducted the experiments. Although we doubt that your organic lab notebook will ever appear as evidence in a court of law, we want you to keep a good notebook that is an accurate, permanent record of what you have done in the lab. You have some leeway in how you prepare the notebook, but the following hints should be considered:

* The notebook must be bound. Loose-leaf or spiral notebooks are unacceptable.
* All pages must be numbered in sequence.
* A ballpoint pen with non-erasable ink is preferred.
* All errors must be crossed out with a single line, no scribbles or white-out!
* A clear Table of Contents should appear on the first few pages
* No pages must be missing; do not remove any pages. Pages can be crossed out with an (X) if the entire page is incorrect. Avoid leaving any pages blank. Use front and back of each page.
* All experiments must have titles and dates they are performed. Upon completion of each experiment, sign and date the last page of the experiment.