

University of Wisconsin-Madison
CHEM 342: Elementary Organic Chemistry Laboratory

Contact Information

Matt (Doc) Bowman
262-2519
Chemistry 5232
bowman@chem.wisc.edu
(Please include Chem 342 in the subject line).
1 credit

Matt Bowman's Office Hours

Scheduled
Mondays 2:30-5:00 PM in Noland 379
Tuesdays 9:30-11:30 AM in Chem 1371
Wednesdays 2:30-5:00 PM in Noland 379
(or by appointment)

How Credit Hours are Met: The University defines one credit as the learning that takes place in *at least* 45 hours of learning activities, which include time in lectures or class meetings, in person or online, labs, exams, presentations, tutorials, reading, writing, studying, preparation for any of these activities, and any other learning activities. The course meets 12 times (approximately once per week) for *at most* 4 hours. There is a final exam that takes 2 hours. Students are expected to spend at least 90 min in preparation outside of class for the laboratory. Bringing the estimated time to 68 hours.

Course Description: Chemistry 342 introduces organic laboratory techniques in synthesis, purification and spectral interpretation. The course is designed to accompany Chemistry 341 and topics closely follow Chemistry 341. Enroll Info: Completion of or concurrent enrollment in Chem 341. For students who expect to take only one semester of organic chemistry and need only a single laboratory credit. Enrollment not permitted for students who have completed Chem 344

Prerequisite: CHEM 341 or concurrent enrollment; not open to students who have completed CHEM 344

Course Designations: Intermediate level; physical science breadth; counts as L&S credit

Instructional Mode: face-to-face

Course Meeting Times and Locations:

Section 301:

TA: Caitlin Utt cutt@wisc.edu

Tuesdays 5:40-9:45 Start in Chem 2381

First Day: September 11

Canvas URL: <https://canvas.wisc.edu/courses/105403>

TA Office Hours: Thursdays 8:50-10:50 AM Chem B317

Section 302:

TA: Jess Roberts jroberts24@wisc.edu

Thursdays 5:40-9:45 Start in Chem 2381

First Day: September 13

Canvas URL: <https://canvas.wisc.edu/courses/105402>

TA Office Hours:

Section 303:

TA: Sam Krerowicz krerowicz@wisc.edu

Mondays 5:40-9:45 Start in Chem 2381

First Day: September 10

Canvas URL: <https://canvas.wisc.edu/courses/105404>

TA Office Hours: Wed and Fri 12:05-12:55 pm Chem B317

Chemistry 342 Learning Outcomes

Students will understand the role of spectroscopy and spectrometry in organic structure elucidation and be able to use spectral data to analyze pure samples and product mixtures.

Students will understand and be proficient in the safe use of basic apparatus, glassware, and techniques for the synthesis, isolation, and purification of organic molecules.

Students will be able to adapt literature examples to make target products.

Students will be able to understand basic fundamental properties of organic molecules from their structure.

McBurney Accommodations

If you have McBurney accommodations, please request a Faculty Notification Letter through McBurney Connect. You are encouraged to email Dr. Matt Bowman and your TA if you would like to arrange an individual meeting. Please do this as close to the start of the semester as possible to allow us to better accommodate your needs. Accommodations for exams and quizzes will be coordinated with the chemistry undergraduate office.

McBurney Disability Resource Center syllabus statement

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility.

Students are expected to inform the course instructors and their TA of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Instructors and TAs will work either directly with you or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

<http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

Health-related Accommodations

If you have health-related issues (such as severe allergies, chemical sensitivity, respiratory illnesses, etc.) that may impact your participation in

the lab course, please contact Dr. Matt Bowman to arrange a meeting. Students who are pregnant or are trying to become pregnant should contact a laboratory director immediately. Please contact us as soon as possible prior to the start of lab work.

Institutional statement on diversity

Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

<https://diversity.wisc.edu/>

CHEM 342 Evening Section Exam Policy

Instructors of daytime courses often schedule evening exams that conflict with a scheduled CHEM 342 meeting time (5:40 pm – 9:45 pm).

According to the timetable and Faculty Document 1585a:

"Instructors who schedule evening exams should make every possible effort to accommodate students with unavoidable conflicts. It is the instructor's responsibility to assure that all students with conflicts between daytime courses with evening exams and evening courses are treated fairly and without penalty.

If a scheduling conflict exists between the evening exam of a daytime course and a regularly scheduled evening course, then the evening course takes precedence over the exam."

It is your responsibility to check for any evening exam conflict(s) and contact the instructor of the daytime course as soon as possible so an accommodation can be made.

CHEM 342 Lab Safety Policies

You are required to follow the rules and guidelines discussed in the lab safety presentation at the start of the semester.

In summary:

Place book bags, coats etc. in the hanger area at the side of the lab

You must wear long pants and a lab coat.

No sandals, flip-flops, open-toed/heeled shoes!

Your entire foot must be covered by shoes or a combination of shoes and socks

Gloves, goggles, and lab coats must be worn at all times in the lab

The only exposed skin can be your arms, neck, and part of your face.

Gloves must be removed and discarded before leaving the lab

Don't wear anything that you care about – someone or something will ruin it! Do not eat/drink/chew in the lab

Do not inhale chemicals

No smoking or open flames

Laptops, iPods (and similar) and cell phones are not allowed in the lab
Follow all safety instructions given by your TA! Access to the lab

The only times that you are allowed access to the organic teaching labs are during the scheduled meeting times for the lab session in which you enrolled. You may not work in the lab at any other time. Unless you are enrolled in the scheduled lab session you are not allowed in the lab. There are no visitors allowed.

Required Materials:

Laboratory notebook

Safety goggles (*not safety glasses*)

Fall 2018 Chem 342 Laboratory Manual

Lab Coat

Grades

Each section will be treated independently. At the end of the semester, the total points values will be listed out and the grade cutoffs will be placed where there are significant gaps in points. The course will be curved so the GPA of all the sections will be close to 3.2.

C's will be awarded to students with scores more than two standard deviations below the average. D's will be awarded to students that fail to submit lab reports. F's will be awarded to students that miss multiple lab sessions.

Points will be earned based on your conduct in lab, prelab exercises (at the end of each chapter in the lab notebook), post lab exercises (handed out in lab), product quality, quizzes, and the final exam).

Quizzes

There are 3 quizzes given during CHEM 342. Each quiz will be worth 30 points. The quizzes will mainly focus on the most recent subjects, but organic chemistry is cumulative, so questions regarding concepts/techniques taught in earlier experiments are fair game. The quizzes will be held during the weeks of Oct. 8, Oct. 22, and Nov. 25.

Lab Practical

During the week of December 3, there will be a lab practical. Essentially, you will be asked to repeat one of the experiments you have done this semester with minor alterations. You will not know which experiment you will be doing until that day. Also, you will not be able to use the lab manual. You can only use your lab notebook, calculator, and a periodic table.

Final Exam

There will be a final exam on December 20 from 7:25-9:25 PM. This date was set by the registrar. It will be worth 100 points.

Grading Guide for CHEM 342 Lab Reports

Experiment	PreLab	Lab	PostLab	Product
NMR			37	--
PC	15	--	15	--
Distillation	15	3	15	--
Extraction	15	6	15	--
Lab Skills	15	3	15	--
Substitution	15	3	15	--
Elimination	15	3	15	--
Reduction	15	3	15	5
Grignard	15	3	15	5
Ester	15	3	15	5
Amide/Aldol	15	3	15	5
Lab Practical	--	25	--	5
Total points	150	55	187	25

A Pre-Lab sheet for each experiment can be found in the lab manual. These sheets must be filled out and turned into the TA at the start of the discussion. It is vital that you work through these sheets as you will need the information for the lab experiment itself. The experiment that you will be performing may not be the one in the lab manual. As a result, you will need to run some calculations before you begin the experiment.

The Lab points are based on your performance during the lab period. Most of the time you will receive these 3 points. However, if you come to lab without your goggles, wear inappropriate footwear, do not write in your notebook during the lab, or fail to recap reagent bottles these points will be forfeit. Also, if you endanger yourself or others, it is entirely possible for you to lose more than 3 points.

The postlab worksheet will be posted on Canvas. Your TA will have hardcopies of this worksheet for you to fill out. On it will be several questions for you to answer on your own regarding the experiment. This will be due on the indicated date along with the spectra from your submitted samples and a copy of your notebook pages.

Product points will be assigned by Matt on experiments where everyone makes the same product. These will be assigned based on the quality of the spectra, so be extra diligent in preparing samples.

CHEM 342 Fall 2018 Lab Schedule

Week	Monday	Tuesday	Thursday
Sep. 3	No Class	No Class	No Class
10	Lab Check-in/NMR	Lab Check-in/NMR	Lab Check-in/NMR
17	Part. Coeff/Distillation	Part. Coeff/Distillation	Part. Coeff/Distillation
24	Extraction	Extraction	Extraction
Oct. 1	Extraction	Extraction	Extraction
Oct. 8	Lab Skills	Lab Skills	Lab Skills
15	Substitution	Substitution	Substitution
22	Elimination	Elimination	Elimination
29	Reduction	Reduction	Reduction
Nov. 5	Grignard	Grignard	Grignard
12	Ester	Ester	Ester
19	No Class	No Class	No Class
26	Amide or Aldol	Amide or Aldol	Amide or Aldol
Dec. 3	Lab Practical	Lab Practical	Lab Practical
Dec. 10	No Class	No Class	No Class

CHEM 342 Fall 2018 Lab Report Due Dates

Lab Report	Mon Section	Tue Section	Thurs Section
NMR	Tues Sep 18	Wed Sep 20	Fri Sep 22
Distillation	Tues Sep 25	Wed Sep 27	Wed Sep 29
PC	Tues Oct 2	Wed Oct 3	Wed Oct 5
Extraction	Tues Oct 9	Wed Oct 10	Fri Oct 12
Lab Skills	Tues Oct 16	Wed Oct 17	Fri Oct 19
Substitution	Tues Oct 23	Wed Oct 24	Fri Oct 26
Elimination	Tues Oct 30	Wed Oct 31	Fri Nov 2
Reduction	Tues Nov 6	Wed Nov 7	Fri Nov 9
Grignard	Tues Nov 13	Wed Nov 14	Fri Nov 16
Ester	Tues Nov 27	Wed Nov 28	Fri Nov 30
Amide/Aldol	Tues Dec 4	Wed Dec 5	Fri Dec 6

Reports are due in your TA's mailbox by 5 pm on the day indicated. Late work penalties will be applied to reports turned in after this deadline.

CHEM 342 Late Work Policy

Work submitted up to one day after the stated submission deadline will receive a maximum of 50 % of the total points available. Work submitted over one day late will not be graded. It is your responsibility to be aware of all deadlines for submission of work to your TA.

CHEM 342 Academic Misconduct Policy

All work submitted by a student for grading in CHEM 342 is required to be the product of that student alone. This will be assumed to be the case unless the work is clearly labeled otherwise. In the laboratory, this means that all lab work is carried out by the student and the data obtained is recorded directly into the notebook. The data recorded must pertain to actual measurements and observations made by the student on their own experiment (even when working in pairs or as a group). Calculations, assignment of spectroscopic data, answers to pre- and post-lab questions and all other items submitted for grading must be the original work of the student.

Submission of work copied directly from a textbook, website, journal article, from a current or previous lab report, or any other source without citation or reference is considered to be plagiarism and will be dealt with according to University guidelines.

Information as to what constitutes academic misconduct is available on the website of the Office of the Dean of Students (www.wisc.edu/students/). It is your responsibility to understand and be familiar with these guidelines

Mental Health Resources:

I realize you are under a lot of pressure. Some of that pressure is internal and some of that is external. Regardless of the source of the pressure, the pressure is very real. Students have a tendency to equate grades with future happiness. It is an understandable connection, but not really a true one. I have quite a few C's on my undergraduate transcript (a few in chemistry) and I still ended up with my dream job. I have had a student that received an F in organic chemistry and had to retake the class. She went on to medical school. So, a low grade is not the end of the world.

If disaster happens or at anytime you feel that you cannot cope with something, or just need to vent, there are resources available on campus for you. Take advantage of them.

University Health Services (UHS):

Offers group, individual, couple/partner therapy stress management, and disordered eating assessments and treatment at no cost. It also provides massage therapy, yoga, and other wellness services.

Student Activity Center 7th floor 608-265-5600

www.uhs.wisc.edu/mentalhealth/getting-started

Ask.Listen.Save:

Ask.Listen.Save. is a student org that aims to prevent suicide by reducing the stigma of mental illness. Through educating the student body, they aim to increase the awareness and create a safe environment in which students know they are not alone and can feel free to ask for help.

Student Activity Center Suite 3196 www.Asklistensave.org

Badgerspill:

BadgerSpill is a peer-to-peer support network of and for UW-Madison students. You can write in online to "spill" or vent privately about whatever you are going through and get unbiased feedback, empathy, and resources from other students who have dealt with similar situations. Both parties are anonymous to one another and the spiller gets multiple responses within 24 hours.

www.badgerspill.com

Please look on the canvas page for the mental health resource sheet for more resources.