

SYLLABUS FOR CHEMISTRY 2182 (Fall 2018)
ORGANIC CHEMISTRY LABORATORY 2

Section # (time)	Briefing Room	Lab	TA	Professor	Section # (time)	Briefing Room	Lab	TA	Professor
1 (T 1PM)	SH 332	CPB 208		Bugarin	5 (T 6PM)	SH 315	CPB 208		Bugarin
2 (R 1PM)	SH 332	CPB 208		Bugarin	6 (W 6PM)	SH 330	CPB 208		Bugarin
3 (T 8AM)	SH 315	CPB 208		Bugarin	7 (R 6PM)	SH 331	CPB 208		Bugarin
4 (R 8AM)	SH 315	CPB 208		Bugarin	R=Thursday				

Dr. Alejandro Bugarin (CRB 205, Tel. 817-272-9399, e-mail: bugarin@uta.edu) is the coordinator for CHEM 2182. [Go to MyMav for your TA email and other important information.](#) Information about various aspects of CHEM 2182, including office hours, will also be available on Blackboard (<https://elearn.uta.edu/>). For reasons of web security, faculty, staff, and students **must** use their **official** UT Arlington e-mail address for all university-related business.

The pre-requisite for this course is CHEM 2181 or equivalent, with a grade of C or better. Students enrolled in CHEM 2182 must also be enrolled in CHEM 2322 or have prior credit for CHEM 2322 or an equivalent course. Others will be dropped from Chem 2182. Students enrolling in Chem 2182 with the intention of replacing a previous Chem 2182 grade must declare their intention to do so at the registrar's office by the census date (**September 7th**) for this semester. If you are dropped from this class for non-payment of tuition, you may secure an Enrollment Loan through the Bursar's Office. You may not continue to attend class until your Enrollment Loan has been applied to outstanding tuition fees.

This course is intended to familiarize you with many common procedures and techniques for preparing, identifying, and purifying organic compounds. On completion of this course it is expected that you will:

- know how to correctly assemble and operate common laboratory glassware and equipment required for the synthesis, purification, and identification of organic compounds.
- demonstrate habits of careful workmanship in the laboratory, including skills of observation, measurement, and record-keeping.
- perform laboratory work in accordance with accepted regulations with due regard for your own and others' safety.

The laboratory manual (REQUIRED) is *Experiments for Organic Chemistry II*. Please read the PREFACE of the manual **prior** to coming into the lab for the first time. You should read and be familiar with all of the assigned experiments **before** they are scheduled to be performed. You should also complete the appropriate pre-lab exercises in your notebook **before** starting the experiments. You will be taking a brief quiz **before** starting an experiment. You will be expected to answer questions or do any procedures involving spectroscopy, i.e. NMR and IR, this semester.

Mandatory Online Safety Training: Students registered for this course must complete the University's required "Lab Safety Training" prior to entering the lab and undertaking any activities. Students will be notified via MavMail when their online training is available. Once notified, students should complete the required module as soon as possible, but no later than their first lab meeting. Until all required Lab Safety Training is completed, a student will not be given access to lab facilities, will not be able to participate in any lab activities, and will earn a grade of zero for any uncompleted work.

Required Online Safety Training: Students registered for this course must complete all required lab safety training prior to entering the lab and undertaking any activities. Once completed, Lab Safety Training is valid for the remainder of the same academic year (through the following August) and must be completed anew in subsequent years. There are no exceptions to this University policy. Failure to complete the required training will preclude participation in any lab activities, including those for which a grade is assigned. Until all required Lab Safety Training is completed, a student will not be given access to lab facilities, will not be able to participate in any lab activities, and will earn a zero for any uncompleted work.

1. Login to **Blackboard** at <https://elearn.uta.edu> with your NetID and password.
2. Under **My Blackboard** tab, click **Lab Safety Training**.
3. Click **Welcome** from the left pane to start and follow the instructions.

General questions about the Lab Safety Training, including content or enrollment should be directed to the Office of Environmental Health and Safety at ehsafety@uta.edu or (817) 272-2185. All technical questions/problems with online training should be directed to the Blackboard Support Center either online or by calling 1-855-308-5542.

Required Lab Attire: IMPORTANT! You will be exposed to hazardous chemicals in this class. Personal protective equipment (PPE) is necessary to protect your body. You will not be admitted into the lab if any of the following guidelines are not met. If you violate any of the following guidelines, you may be asked to leave the lab. All missed work will receive zero credit.

1. Goggles, gloves and aprons are provided and are required at all times. Alternatively, UTA-SACNAS organization is selling inexpensive and beautiful lab-coats and goggles. **To purchase one or more, go to Dr. Bugarin's office, CRB 205.**
2. Shoes that cover the entire foot are required at all times. No sandals, Crocs, etc., even with socks. *Absolutely no exceptions will be made to this guideline. Warnings will not be issued.*
3. Long pants and sleeves are highly recommended.
4. Contact lenses should not be worn in the lab.
5. Long hair should be tied back.
6. No musical or other entertainment devices may be used in chemistry lab at any time.
7. Cell phones are not permitted in lab and must be turned off and put in your bag before you enter lab.

Notebook: A hard-bound notebook (NOT spiral-bound) is required. The notebook should be kept **in ink**. The pages should be numbered sequentially, and there must be a table of contents at the beginning. Each experiment must include the date the work is done, a title, and a main equation or object of the experiment.

Notebook Content:

BEFORE COMING TO THE LAB:

1. Title of the experiment and date.
2. Balanced equation(s) for any reactions.
3. Data for all reactants: molecular weights, moles and grams/volume used, physical constants and calculation of limiting reagent. Look up major hazard classed for all reagents used in the experiment. Look at the MSDS sheets.
4. Sketch and names of apparatus used in experiment.
5. **Outline the experiment in sufficient detail that the experiment can be conducted without your lab text.** Note items related to safety. Include a scheme for purification of the product, as needed. **Each experiment must be conducted from the outline you write in your notebook.**
6. Calculate the theoretical yield of your product (show calculations).
7. Answer assigned questions.

DURING THE LAB:

8. Record what you do and observe during the experiment. Weights are to be recorded using the Tare + compound – Tare = weight, unless you use an automatic tare. If using an automatic Tare, record this in your notebook. The boiling point or melting point “range” is to be recorded.

AFTER THE LAB

9. Calculate the percent yield (show all calculations).
10. Conclusion: Comment about or discuss any part of the experiment you think appropriate (e.g., an explanation of why the yield is too low, a suggestion for improving some part of the experiment, etc.).

A SHORT QUIZ WILL BE GIVEN FOR EACH EXPERIMENT, WHICH WILL BE ADMINISTERED VIA BLACKBOARD. THE QUIZ MUST BE COMPLETED ONE HOUR BEFORE YOUR LAB IS DUE TO START; FAILURE TO COMPLY WILL RESULT IN THE AWARD OF ZERO FOR THAT LAB. **PRE-LAB EXERCISES MUST BE FINISHED AND STAPLED IN YOUR NOTEBOOK BEFORE YOU BEGIN EXPERIMENTS.**

Notebooks will be taken up for grading (unannounced) two or three times during the semester. Your notebooks will also be examined by the TAs periodically to insure you are complying with 1-7 above.

Grading: Practical I (15%), Practical II (15%), Unknowns (15%), Other Experiments (15%), Notebook (Pre-lab Exercises are 25% of the notebook grade) (15%), Quizzes (10%), Final Exam (15%). Course grades: 90% or >-A, 89-80%-B, 79-70%-C, 69-60%-D, <60%-F.

Make-ups are allowed only for Practical I or II and only for students who have an excused and documented absence. Make-ups are not allowed for non-practical experiments. There will be a 15-point deduction for any practical grade if the practical is started over. **Make-ups must be scheduled by turning in a request form to Dr. Cleaver** (CPB 217, email: wcleaver@uta.edu, Tel. 817-272-3849) **by 4:30 PM on Thursday, November 15th**. The practical makeup will occur on **Tuesday, November 20th**.

Make-ups are NOT allowed for non-practical experiments. If a non-practical is missed and not excused, 10% of your course grade will be deducted. If more than one experiment is missed, either an incomplete (with excused absences) or failing grade (with unexcused absences) will be given for the course.

All equipment on temporary loan from the Stockroom must be returned the same day it is checked out.

Check-out is completed on the assigned day, unless they have a legitimate, documented excuse. Students failing to check-out on the assigned day will receive a point penalty of a deduction of 10% of your final grade. If check-out is still not complete one week after the assigned date, the stockroom will check out the student and assess a fixed check-out fee, a key fee, and the cost of any broken, missing or excessively dirty glassware.

Fees: All fees are non-refundable once they have been billed.

UTA will bill your account and it will have to be paid before you will be allowed to register for the next semester. This will show up on your tuition bill as “chemical breakage.”

Note: If you decide to drop or stop attending the lab, YOU need to:

Contact the Chemistry Stockroom, 110 CPB, to check out on or before the scheduled check-out date.

Drop the class in the Chemistry Office, 130 CPB. Contact your academic advisor as well.

Students with Disabilities: Students who need an accommodation based on disability should arrange to meet with the laboratory coordinator in his office during the first week of the semester to see that they are appropriately accommodated. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD)**. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: **The Office for Students with Disabilities, (OSD)** www.uta.edu/disability or calling 817-272-3364;

Students with Pregnancies: For students who are pregnant, it is recommended by the Chemistry and Biochemistry Dept. that you do not enroll into a chemistry lab at this time. If you become pregnant during the semester, we recommend dropping the course as soon as possible; and special provisions will be made to assist you in finishing the course at a later date. *Please see your faculty instructor for assistance.*

Schedule:

Aug 22-Aug 24 After briefing students check into the laboratory.

Instructor: Discuss safety rules. Discuss lab routine and notebook form in the classroom. In the laboratory, demonstrate the use of the fire extinguisher, eyewash, and safety shower.

Students: Check equipment and replace from the Stockroom any missing or damaged pieces. Remember, you are responsible for equipment being in good condition when it is checked back in at the end of the semester.

Aug 27 - 31 Polymers. Solution Polymerization of Styrene and Nylon 6,6.

Sept 03-07 Preparation of Grignard Reagents and Preparation of 4-Chlorobenzhydrol

Sept 7 **Census Date**

Sept 10-14 Complete 4-Chlorobenzhydrol experiment. Do not discard your product, as you will need it as a precursor for the next experiment.

Sep 17- 21 Preparation of 4-Chlorobenzophenone

Sep 24- 28 The Diels-Alder Reaction

Oct 01-05 **Practical I.** Nitration of Methyl Benzoate. There should be **no communication** with the other students in the lab. Direct all questions to your TA.

Oct 08-12 Complete Practical I. Weigh your product, calculate the yield, and determine the m.p. Turn the product in to your TA.

Oct 15-19 The Aldol Condensation. Reaction of Piperonal with Pinacolone

Oct 22- 26 **Practical II.** The Horner-Wadsworth-Emmons Reaction. Work individually. There should be **no communication** with other students in the lab. Direct all questions to your TA.

Oct 29- Nov 02 Complete **Practical II.** Work individually. Determine the weight and yield of your sample and turn it in to your instructor.

Nov 02 **Last day to drop a course**

Nov 05-09 Begin Experiments on Identifying Organic Compounds. You will be given two unknowns to identify. Each will either be an alcohol, aldehyde, amine, carboxylic acid, ketone, or phenol. Work individually. All unknowns are listed in the *Handbook of Tables for Organic Compound Identification*. Determine the solubilities and physical constants of your unknowns. Report the preliminary classification of both unknowns to your TA for verification. When these have been correctly reported, IR and NMR spectra will be issued to you.

Nov 12- 16 Complete identification of unknowns. Submit final report.

Nov 19- 23 *No scheduled labs.* Excused, missed Practical Experiments may be made up on **Nov 20th**.

Nov 26- 30 **Sections 001, 003, 005, and 006:** check out equipment in scheduled lab time. The remaining sections will check out on **Thursday November 29th**, after completion of the *unknowns' experiment*. **Broken and excessively dirty or lost equipment must be replaced.**

Dec 6 (Thu) **Final Examination, 5:30-8:00 p.m.** (Departmental and cumulative). Final location to be announced. Exam will emphasize procedures and techniques. (**Travel is not an excuse for rescheduling your exam**). Bring a Scantron form 882 ES and your lab Notebook to the exam.

Academic Integrity: All students enrolled in this course are expected to adhere to the UT Arlington Honor Code.

UT ARLINGTON HONOR CODE:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. **Student work that violates the Honor Code will receive zero credit.**

Violations include (but are not limited to) cheating, falsification of data, plagiarism, and contracting/collusion with others to do your test or do your work. Cheating is the use or acquisition of information (data, constants, formulas, textual material, etc.) from either unauthorized sources or in an unauthorized manner. Examples include but are not limited to:

- 1) **turning in work that is not your own, whether copied from another student or online source.**
- 2) exchanging information during a test or quiz.
- 3) looking at another student's paper during a test or quiz.
- 4) bringing information in any form into a test or quiz other than personal knowledge. This includes written notes (crib sheets) and digitally stored information (formulas, constants, textual, etc.)
- 5) looking at a book or any other unauthorized source during the test or quiz.
- 6) accessing information by any electronic means. **No electronic devices (e.g. computers, phones, watches, glasses, of any type) are to be used during examinations without permission.**
- 7) processing data or information in an unauthorized manner using a programmable calculator or computer, i.e., there should be no use of a computer program. You are only permitted to use simple calculators that perform arithmetical, logarithmic, and trigonometric functions.

In the event that a test proctor determines that a student is cheating, the following actions will be taken:

- 1) the student will be notified and, if the situation merits, asked to explain his/her actions.
- 2) the source of the unauthorized information will be removed during the remainder of the test period and returned to the student following the test, if appropriate.
- 3) the student may be removed to a different location to complete the test.
- 4) calculator/computer memory will be cleared of the stored information and programs as appropriate. In some cases the proctor will need to temporarily examine the calculator to verify unauthorized use. The calculator will be returned to the student to finish the test.
- 5) a record of the events and actions surrounding the alleged act of cheating will be submitted to the Associate Vice Provost for Student Affairs for further action. See Undergraduate Catalog for further information.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, **which location will be indicated by your TA in the first lab period**. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Title IX: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit www.uta.edu/titleIX.*

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Americans with Disabilities Act

In an effort to be certain that students with documented disabilities are reasonably accommodated, I would like to ask your cooperation in informing me of any legitimate needs you might have in this course. Your need for this request will be verified through the appropriate University office to be certain the best accommodation is provided for your particular disability as it relates to this course. It is important for you to understand that this document will be held in the strictest confidence and will not be kept with any of your permanent student records.

Name: _____ SS# or EID: _____

Course: _____ Section: _____

Disability: _____

Suggested Accommodation: _____

Also, if you do not require an accommodation but would be agreeable to having your class notes duplicated or assist in another manner with a disabled peer, please indicate below.

Name: _____ SS#: _____

Note Sharing: _____ Other Assistance: _____

***For accommodations contact: **The Office for Students with Disabilities, (OSD)** www.uta.edu/disability or calling 817-272-3364.