

SYLLABUS FOR CHEMISTRY 2182 (Spring 2015)
ORGANIC CHEMISTRY LABORATORY 2

Section # (time)	Briefing Room	Lab	TA	Professor	Section # (time)	Briefing Room	Lab	TA	Professor
1 (M 1pm)	SH 332	CPB 205	Parham	Bugarin	7 (T 8am)	SH 332	CPB 208	Arunoday	Jeon
2 (T 1pm)	SH 125	CPB 205	Apparao	Bugarin	8 (W 8am)	SH 332	CPB 205	Arunoday	Jeon
3 (T 1pm)	SH 125	CPB 208	Ravi	Bugarin	9 (T 6pm)	SH 332	CPB 208	Diego	Jeon
4 (W 1pm)	SH 103	CPB 205	Parham	Bugarin	10 (W 6pm)	SH 330	CPB 205	Diego	Jeon
5 (R 1pm)	SH 330	CPB 205	Michael	Bugarin	11 (R 6pm)	SH 128	CPB 208	Michael	Jeon
6 (R 1pm)	SH 330	CPB 208	Ravi	Bugarin					

Dr. Alejandro Bugarin (CRB 205, Tel. 817-272-9399, e-mail: bugarin@uta.edu) and Dr. Junha Jeon (CRB 203, Tel. 817-272-0262, e-mail: jjeon@uta.edu) are the coordinators for CHEM 2182. 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 (**February 4th**) 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 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 not 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.

Accessing Online Training:

1. You should have received an email from the UTA Compliance Department. Click on the link in the email (or navigate to <https://training.uta.edu> for the login page)
2. Log on using your network log-on ID and password (what you use to access email). If you do not know your NetID or need to reset your password, visit <https://webapps.uta.edu/oit/selfservice/>.
3. The available courses for completion will be listed. For Chemistry 2182, complete the course entitled "Student Lab Safety Training."
4. If you did not receive the training email and you have not already completed the training you will need to contact the training helpline (817-272-2080) or email compliance@uta.edu.
5. Students who have not completed the training by census date may be dropped from the lab (and consequently any linked lecture).

Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e. through next August) for all courses that include a lab. If a student enrolls in a lab course in a subsequent academic year, he/she must complete the required training again.

All questions/problems with online training should be directed to the University Compliance Services Training Helpline at 817-272-2080 or by emailing compliance@uta.edu.

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.
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:

- 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

- Calculate the percent yield (show all calculations).
- 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 the completed request form into Dr. Cleaver** (CPB 217, email: wcleaver@uta.edu, Tel. 817-272-3849) **by 4:30 PM on Thursday, April 23rd.**

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.

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 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:

- Jan 19** **Martin Luther King Jr's Day. Section 001** will perform check in during the Polymer experiment day, on **January 26th**.
- Jan 20-23** 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.
- Jan 26-30** Polymers. Solution Polymerization of Styrene and Nylon 6,6.
- Feb 2-6** Preparation of Grignard Reagents and Preparation of 4-Chlorobenzhydrol
- Feb 4** **Census Date**
- Feb 9-13** Complete 4-Chlorobenzhydrol experiment. Do not discard your product, as you will need it as a precursor for the next experiment.
- Feb 16-20** Preparation of 4-Chlorobenzophenone
- Feb 23-27** The Diels-Alder Reaction
- Mar 2-6** **Practical I.** Nitration of Methyl Benzoate. There should be **no communication** with the other students in the lab. Direct all questions to your TA.
- Mar 9-13** **Spring Break**
- Mar 16-20** Complete Practical I. Weigh your product, calculate the yield, and determine the m.p. Turn the product in to your TA.
- Mar 23-27** The Aldol Condensation. Reaction of Piperonal with Pinacolone
- Mar 30-Apr 3** **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.
- April 3** **Last day to drop a course.** (No make-up exams will be schedule after this date)
- Apr 6-10** Complete **Practical II.** Work individually. Determine the weight and yield of your sample and turn it in to your instructor.
- Apr 13-17** 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.
- Apr 20-24** Complete identification of unknowns. Submit final report.
- Apr 27-May 1** No scheduled labs. Excused, missed Practical Experiments may be made up on **April 28th**.
- May 4-May 8** Check out equipment in scheduled lab time.
- Broken and excessively dirty or lost equipment must be replaced.**
- May 14 (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:

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.

Instructors 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.

Academic dishonesty: UTA considers academic dishonesty a completely unacceptable mode of conduct, and the University will not tolerate it in any form. Academic dishonesty includes (but is 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

- a) exchanging information during a test or quiz.
- b) looking at another student's paper during a test or quiz.
- c) 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.)
- d) looking at a book or any other unauthorized source during the test or quiz.
- e) accessing information by any electronic means (cellular phones, pages, personal stereos, etc.). **None of these items are to be brought into examinations.**
- f) 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.

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**. 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 is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.