

SYLLABUS FOR CHEMISTRY 2182 (Spring 2016)
ORGANIC CHEMISTRY LABORATORY 2

Section # (time)	Briefing Room	Lab	TA	Section # (time)	Briefing Room	Lab	TA
1 (M 1pm)	SH 129	CPB 205	Enrique Barragan	7 (T 8am)	SH 315	CPB 208	Enrique Barragan
2 (T 1pm)	SH 333	CPB 205	Ravi Singh	8 (W 8am)	SH 332	CPB 205	Apparao Bokka
3 (T 1pm)	SH 205	CPB 208	Pawan Thapa	9 (T 6pm)	SH 332	CPB 208	Mohammed Abu-esba
4 (W 1pm)	SH 332	CPB 205	Apparao Bokka	10 (W 6pm)	SH 205	CPB 205	Parham Asgari
5 (R 1pm)	SH 205	CPB 205	Mohammed Abu-esba	11 (R 6pm)	SH 125	CPB 208	Parham Asgari
6 (R 1pm)	SH 334	CPB 208	Pawan Thapa	12 (T 6pm)	SH 333	CPB 205	Ravi Singh

Instructors: Dr. Junha Jeon (CRB 203, Tel. 817-272-0262, e-mail: jjeon@uta.edu) for sections 001, 002, 004, 005, 007, 008, 010, 011, and 012.

Dr. Jennifer Rhinehart (SH 300E, Tel. 817-272-1091, e-mail: rhineh@uta.edu) for sections 003, 006 and 009.

Office Hours: and other information will be available on Blackboard (<https://elearn.uta.edu/>).

Email: 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: 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 (see page 6) 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.

Learning Outcomes: 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.

Required Materials: 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 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. 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.

Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e., September through next August) for all UTA 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 Blackboard Support Center either online or by calling 1-855-308-5542. General questions about the Lab Safety Training, including content should be directed to the Office of Environmental Health and Safety at (817) 272-2185 or ehsafety@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:

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 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 Questionnaires must be completed before you attend the briefing. You should staple these into your notebook, along with the corresponding experiment, if you wish to have access to these questionnaires during the open notebook portion of the final.

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.

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, and because performing laboratory work (in a safe manner) is mandatory to attain the stated Student Learning Objectives, you are required to attend all Briefings and scheduled Laboratory Sessions. You may leave the laboratory only as instructed or permitted by your TA.

Make-ups Policy:

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 two experiments are missed, either a failing grade (F, with unexcused absences) or an incomplete (I, with excused and documented absences) will be earned for the course. If you believe you have an excused absence, you must obtain documentation and discuss this with your faculty instructor in a timely manner.

Practical experiments: Make-ups with no point deduction are only allowed for Practical I or II, and only for students who have an excused and documented absence. Practical experiments (only one of Practicals) may be repeated with a 15-point deduction (85% max). Practical Make-ups and Re-do's must be scheduled by turning in a completed Request Form to Dr. Cleaver (217 CPB, wcleaver@uta.edu, 817.272.3849) by 4:30 PM on Thursday, April 21st.

Final Exams: Students with documented excuses for rescheduling the final examination must obtain approval for a make up examination prior to the census date. Please see your faculty advisor regarding conflicts with the final exam. Travel is not an excuse for missing the scheduled final examination.

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. Your account will be billed (chemical breakage) and it will have to be paid before you will be allowed to register for the next semester.

Fees are non-refundable once they have been billed.

Drop Policy: Students may drop or swap (concurrently add and drop a class) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students are not able to drop a course online and they must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not

plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/ses/fao>).

Lab Checkout: If you drop the 2181/2182 lab, you must contact the Chemistry Stockroom, 112 CPB, in order to check out on or before the scheduled check-out date.

Paperwork: When dropping the course, you are responsible for seeing that all of the proper paperwork is completed and submitted to your academic advisor. If this paperwork is not completed, you will receive a letter grade corresponding to your earned grade, including zeros for any missed work.

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including The Americans with Disabilities Act (ADA), *The Americans with Disabilities Amendments Act (ADAAA)*, and Section 504 of the Rehabilitation Act. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. 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, or Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (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.*

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.

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.

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.

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 on your first day. 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 individuals with disabilities.

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.

Schedule:

- Jan 18** **Martin Luther King Jr's Day.** **Section 001** will perform the Polymer experiment on check in day **January 25th**.
- Jan 19-21** 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 25-28** Polymers. Solution Polymerization of Styrene and Nylon 6,6.
- Feb 1-4** Preparation of Grignard Reagents and Preparation of 4-Chlorobenzhydrol
- Feb 3** **Census Date**
- Feb 8-11** Complete 4-Chlorobenzhydrol experiment. Do not discard your product, as you will need it as a precursor for the next experiment.
- Feb 15-18** Preparation of 4-Chlorobenzophenone
- Feb 22-25** The Diels-Alder Reaction
- Feb 29-Mar 3** **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 7-10** Complete Practical I. Weigh your product, calculate the yield, and determine the m.p. Turn the product in to your TA.
- Mar 14-18** **Spring Break**
- Mar 21-24** The Aldol Condensation. Reaction of Piperonal with Pinacolone
- Mar 28-Mar 31** **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.
- Apr 1** **Last day to drop a course**
- Apr 4-7** Complete **Practical II.** Work individually. Determine the weight and yield of your sample and turn it in to your instructor.
- Apr 11-14** 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 18-21** Complete identification of unknowns. Submit final report.
- Apr 26** **Practical Make-up** Approved practical experiments may be made up on this day. Requests must be made by the preceding Thursday, April 21st.
- May 2-May 5** Check out equipment in scheduled lab time.
- Broken and excessively dirty or lost equipment must be replaced.**
- May 12 (Thu)** **Final Examination, 5:30-8:00 p.m** (room TBA). Exam will emphasize procedures and techniques. **Bring a Scantron form 882 ES, pencil, calculator, and YOUR LAB NOTEBOOK TO THE EXAM!**