

## FALL 2019, CHEM 3210: Organic Chemistry Laboratory I

### COURSE & INSTRUCTOR DETAILS:

#### LAB LECTURE:

3210.001	Monday	1.00 to 1.50 pm. (SAGE 116)
3210.002	Thursday	2.00 to 2.50 pm. (CHEM 109)
3210.003	Tuesday	3.30 to 4.20 pm. (GAB 105)
3210.004	Monday	3.30 to 4.20 pm. (GAB 104)

**INSTRUCTOR:** Dr. Sreekar Marpu

**OFFICE:** Chemistry Building, Room 371

**E-MAIL:** sreekarbabu.marpu@unt.edu

**OFFICE HOURS:** Tuesday: 12.30 to 3.30 pm; Wednesday: 9.00 am to 12.30 pm or by appointment.

**PHONE:** 940-565-4850

#### A. UNT REQUIREMENTS:

MUST HAVE HAD OR BE CONCURRENTLY REGISTERED IN CHEM 2370. MUST ALSO BE ENROLLED IN A CHEM 3210 LAB.

#### B. LEARNING OBJECTIVES:

Objectives of this course include:

Providing a foundation of organic chemistry skills and techniques for students considering advanced studies in chemistry or medical fields or other life sciences.

After completing the course, the students are expected to:

Correlate and apply some of the theoretical concepts learned during CHEM 2370 course.

Understand different types of physical properties of matter and their significance in organic chemistry.

Understand and perform at least five different organic experiment skills that are extensively utilized in organic labs.

Perform simple organic chemical reactions following a written experimental procedure.

Understand the methodology and rules for writing a chemistry lab report, able to write a lab report on their own.  
 Realize the significance of working in groups in the lab.  
 Understand guidelines for working safely in a chemical/organic lab.  
 Get prepared for more vigorous CHEM 3220 labs.

**C. TEXTBOOK(S):**

**Optional Materials:** "Macroscale and Microscale Organic Experiments," 6<sup>th</sup> or 7<sup>th</sup> Edition,

Kenneth L. Williamson and Katherine M. Masters

Any format of the textbook is acceptable for the course.

*All the information required for performing the experiments in the lab will be provided by the instructor in the form of handouts and lab lectures. Any missing information can be obtained from openly available online resources.*

*No special lab notebooks are needed, students can use regular plain white paper notebooks for writing the reports.*

**D. LAB LECTURES DESCRIPTION:**

	<b>TOPIC</b>	<b>DESCRIPTION</b>
<b>1</b>	<b>Melting Point (MP)</b>	Understanding the concept of melting point in organic chemistry, determining the MP of known substances, mixtures and determining the unknown from the MP values. The lab lecture and lab will also help to understand significance MP in daily applications.
<b>2</b>	<b>Recrystallization</b>	The understanding of recrystallization technique in organic chemistry. Performing a recrystallization technique using a single solvent and dual solvent methods.
<b>3</b>	<b>Thin Layer Chromatography (TLC)</b>	The understanding of the TLC technique in organic chemistry. Performing TLC of analgesics and other colored pigments. The lecture and lab will help to understand and differentiate organic substances based on polarity. Using TLC the students will identify the unknown from a mixture of compounds.
<b>4</b>	<b>Sublimation</b>	Introducing concepts of sublimation, understanding the significance of sublimation in daily applications. Performing sublimation of known and unknown substances.

<b>5</b>	<b>Distillation</b>	The lab lecture and the labs will introduce the students to the concepts of distillation technique and types of distillation. The labs will also help to understand how different types of distillation are performed in an organic lab. Perform simple and fractional distillation, separate and analyze a mixture of solvents by both simple and fractional distillation.
<b>6</b>	<b>Liquid-Liquid Extraction</b>	Understand concepts of extraction, perform liquid-liquid extraction based on acid-base chemistry. The lab lecture and the labs will emphasize on differentiating organic compounds into acids and bases and the process to separate them as needed in an organic reaction. At the end of the labs, the students will be in a position to separate an acid and a base from a mixture.
<b>7</b>	<b>Extraction and Sublimation</b>	The students will learn the application of both extraction and sublimation techniques in one laboratory for extracting and purifying Caffeine, a well-known natural product. ).
<b>8</b>	<b>Nucleophilic substitution reactions of alkyl halides.</b>	The labs will provide a perfect opportunity to perform and understand one of the important organic reactions taught during 2370 course. Until this point, the lab lectures and the labs are focused on teaching and training students on different organic techniques that are helpful to perform different organic reactions in a lab setting.
<b>9</b>	<b>Alkenes from Alcohols</b>	An important organic reaction, the conversion of alkenes to alcohols will be performed in the lab. The lab will also provide an opportunity to understand the significance of reagents and identification tests in organic chemistry.
<b>10</b>	<b>Bromination of Cinnamic Acid</b>	An important stereospecific reaction will be performed and the stereospecific product will be analyzed. The experiment 9 and 10 will introduce the concepts of “yield” of a reaction, providing an opportunity to understand the significance of theoretical and experimental yields in an organic reaction.

**NOTE: A minor change in the order of the experiments is expected.**

#### **E. SAFETY:**

Texas State Law and common sense require eye protection in the form of goggles for all persons in academic chemical laboratories. Along with eye protection, all other laboratory safety guidelines that are listed in the item “R”- **“Student Laboratory Safety**

**Agreement, Fall 2019**” will be strictly enforced. TA’s and Laboratory Supervisors have the right to ask the students to leave the lab with “0” grade for disobeying or not following any of these rules or guidelines. **PERSISTENT OFFENDERS WILL BE DROPPED WITH "WF"**. Please see the list of guidelines at the end of this document. The instructor will discuss the new rules during the first recitation/lecture.

**NOTE: Students will have to sign the “Student Laboratory Safety Agreement, Fall 2019” form before they begin their labs. The “SAFETY TOOL KIT” document that contains additional details on safety and good lab practices is available on Canvas. Please do not hesitate to ask the lab TA or the instructor any questions related to safety and good lab practices.**

#### **F. ADA STATEMENT**

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to the faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at <http://disability.unt.edu>. You may also contact them by phone at (940) 565-4323.

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#### **G. ATTENDANCE POLICY:**

**Lab-Lectures (also called lab recitation) and Labs: Required!**

The lab-lectures are designed to help you understand not only the procedural details of the scheduled experiments but also the theoretical principles underlying the experimental design. **You are required to attend all scheduled lab-lectures.** It is your responsibility to contact the instructor for your absence(s).

**One excused absence. Please contact the instructor and the TA immediately for more than one excused absence(s).**

**There are no makeup labs or makeup quizzes.** If you miss a lab or a lab lecture due to the acceptable reason (listed below), it will be excused. Otherwise, a missed laboratory will result in a zero grade. A partial grade can be earned for an unexcused absence, depends on TA's discretion!

Acceptable reasons for missing an experiment or lab lectures are:

1. Active military service, including travel for that purpose
2. Illness or other extenuating circumstances
3. Religious holy day – please reach out and inform the instructor and Lab TA in advance
4. Participating in an official University function
5. Pregnancy and parenting under Title IX
6. When the University of officially closed by the President

Please check the [https://policy.unt.edu/sites/default/files/06.049\\_CourseSyllabiRequirements\\_2017\\_0.pdf](https://policy.unt.edu/sites/default/files/06.049_CourseSyllabiRequirements_2017_0.pdf) for more details.

***Turn in the documentation for the missed laboratory to the TA or the instructor as soon as possible (within a week of the missed lab).***

For individuals with a single excused absence, the total possible points in the laboratory will be adjusted appropriately to reflect the one excused absence. For students with more than one excused absence, please discuss with your TA.

**Shifting Labs or Making up Labs:** Only 20 students are allowed in each laboratory, students are not recommended to switch labs. Only under extreme situations, switching labs is allowed with permission from the current TA and TA of the new lab section.

**There are no makeup labs!!!**

## H. BEHAVIOR POLICY

- Students cannot come to the lab more than **10 minutes late**, students coming late more than once will be asked to leave with "0".
- You are not allowed to work alone (in the absence of TA) in the lab. Follow all safety rules with no exceptions.
- Disruptive students will be asked to leave and will receive a 0 for that week's lab
- Disruptive behaviors include:
  - Cell phone use (games..)
  - "Horseplay" or running in the lab
  - Not following TA instructions

- Please check the “Safety Rules Agreement” and “Safety Tool Kit” documents for additional details on safety and behavior in the lab.

**Be punctual:** If you arrive late, you will miss the instructions given by your TA at the beginning of the lab period, which may lead to unnecessary confusion as well as unsafe work. Reagents will only be available for the indicated week. If you must miss a lab, contact your TA as soon as possible. Reports for missed labs will not be accepted - your TA will explain how you might earn partial credit for completing pre-lab component and post-lab questions for the missed experiment.

The students will receive a “0” if late to the lab by more than 10 minutes. Can turn on the prelab for partial credit during the first incident. Students showing up late for more than one occasion will receive a “0”.

Under special situations, TA’s can allow students with partial credit. “Completely under TA’s discretion” depending on the situation of the student.

## I. GRADING:

Teaching Assistants will enter grades on Canvas under the course page for labs. The TA’s are expected to update the grades on the Canvas for every 2 weeks. It is the responsibility of the student to regularly check for consistency of grades and report to the TA for any inconsistencies. Students are advised to report to the instructor regarding any delays in the grading of their lab reports. Please wait for at least 2 weeks before complaining to the instructor or talk to your TA first.

Your grade will be determined entirely by your performance in the laboratory and quizzes. This semester 10 laboratory experiments and three quizzes. The 300 total points in the laboratory are broken down as follows:

<b>10 Experiments</b>	<b>Possible Points = 10 x 20 = 200</b>
<b>3 Quizzes (one safety, two-take home)</b>	<b>Points Possible = 20 x 3 = 60</b>
<b>TA Assessment of Safe Laboratory Practices</b>	<b>Points Possible = <u>10</u></b>
<b>Total:</b>	<b>= 270</b>
90 – 100 % of the total points	Grade = A
80 – 89 % of the total points	Grade = B
70 – 79 % of the total points	Grade = C
60 – 69 % of the total points	Grade = D
Below 60 %	Grade = F

*The additional bonus points for recitation, labs, and quizzes are at the instructor's discretion.*

**QUIZZES:** Quiz 1 is a safety quiz that deals with aspects of general lab safety and the location of various safety items in the organic laboratory. You may not begin your experimental work for the course unless you have satisfactorily completed the safety quiz. The hard copy of the Quiz 2 and 3 will be handed over to the students.

### **J. LAB REPORTS: MANDATORY!**

A sample of the lab report will be uploaded on Canvas. The TA's will also provide detailed information.

Read your textbook and/or the handout, placed on Canvas before writing a lab report.

*Experiments are performed based on the prelab procedure written by the students.*

Lab handouts provide all required information for performing the experiments, but they are *NOT A SUBSTITUTE FOR LAB REPORTS*.

If lab reports appear to be "copies" of the lab reports provided by another student or from another source, this will be considered plagiarism and will be penalized accordingly!

Can use a Lab Notebook or Write on a plain white paper(s), staple and return to TA's

Typed or Handwritten

Must be legible: The TAs will not grade anything that they cannot read!

*Late lab reports will be penalized appropriately.*

*Pre-Labs write-up is due at the begin of the lab/experiment.*

*Post-Lab is due at the next scheduled lab class.*

Graded reports will be returned by the TA in 1-2 weeks.

### **K. LAB REPORT GRADE DISTRIBUTION:**

The grade distribution for each experiment: **20 points** each

Pre-Lab write-up including prelab questions:	7 points
Observations, Data & Results:	7 points
Conclusions:	2 points
Post Lab questions:	4 points

Lab reports are due at the next scheduled lab class. Late labs will be penalized appropriately. Students with repeated tidiness and behavior issues can get more points deducted. All TA's will follow the same grade distribution for grading the lab reports.

## L. LAB REPORT FORMAT:

The format of the lab report is as follows:

**Items-1-4 must be completed before you come to the laboratory to do your experiment.** Your TA will initial this Pre-Lab exercise before you begin your work.

### 1. Heading:

This includes the title of the experiment, your name, lab section, date, and your lab partner name

### 2. Summary or objective of the experiment:

Give the purpose and important reactions. One or two lines describing what chemical or physical properties are being demonstrated and a chemical equation should be sufficient.

### 3. Experimental Procedure (planned):

Include a reagent table that lists useful information about the chemicals you will use. Such as but not limited to density and boiling points of liquids, melting points of solids, and pKa of acid-conjugate base pairs.

It must be sufficiently detailed so that any knowledgeable person (including yourself!) can carry out the experiment without referring to the lab manual.

You may use **flow charts**. These are very helpful in saving space and giving a clear plan of action.

**DO NOT JUST COPY THE TEXTBOOK or THE HANDOUTS!**

During the course, there may be some changes to the procedures in the text. You will be informed about these during lab-lecture. Make sure that you incorporate these changes in your procedure.

In the final report – any changes in the actual experimental procedure should be included. For example: If the handout mentions - 3 grams of benzoquinone was added to the flask. It was then stirred at 100 °C for 1 hour; However, during the experiment, if the student weighed only 2.5 g and heated to 90 °C, all the change(s) from the actual procedure should be included in the experimental procedure in the final report.

### 4. Pre-lab Questions:

These will be assigned at the time of the lab lecture. The assigned questions must be answered in sufficient detail to demonstrate your understanding of the posed question(s).

**THE ABOVE ITEMS MUST BE SEEN BY YOUR TA BEFORE YOU WILL BE PERMITTED TO BEGIN YOUR EXPERIMENTAL WORK IN THE LAB.**

Your pre-lab preparation is the major factor in determining the success of your experiments: this includes attending lab-lectures, carefully reading through the assigned reading material, planning your experimental work in detail, and writing up the pre-lab (the items 1-4 listed above). It is also a major factor in having a SAFE LAB.

**5. Observations, Data, and Results:**

This is the information obtained during the lab while you are carrying out the experiment.

Record your observations during the experiment, (*i.e.*, what you actually see) even if everything goes as expected according to the procedure (*e.g.*, temperature changes, color changes, phase changes, precipitation, the evolution of gas, etc.).

Record if there is any change in the procedure for some unexpected reasons.

Also record relevant data such as melting points, boiling points, mass/vol of product, and deviations (if any) from the original procedure.

Show all your calculations as needed or as requested by your TA.

**6. Conclusions:**

This is the last section and is done after the lab. It should include a brief summary of your conclusions. If your experiment did not turn out as planned or expected, comment briefly on why you think that might have happened.

***Writing a scientific explanation for a "FAILED" experiment is MANDATORY. CANNOT JUST WRITE -EXPERIMENT FAILED.***

**7. Post-Lab Questions:**

These will be assigned during the lab lecture. The assigned questions must be answered in sufficient detail to demonstrate your understanding of the posed question(s). In order to do so, you will likely need to refer to the lab book, as well as a more comprehensive organic chemistry textbook (like Jones/Fleming). You may occasionally have to explore a little further for information pertaining to the question.

***IMPORTANT NOTE: For all the experiments, the prelab and postlab questions are available to the students only during the lab lectures. The questions are not posted on Canvas. Sharing prelab and postlab questions with students absent from the recitation is strictly prohibited. Sharing prelab and postlab questions with students absent to the lecture(s) will be considered as academic dishonesty. The student(s) absent to the recitation (lab lecture) should reach out to the instructor for prelab and postlab questions. It***

**will be instructor's discretion to provide prelab and postlab questions to the absent student(s) depending on reasons for missing the lab lecture.**

**NOTE:** In the final report – the experimental procedure should address any changes that are implemented during the actual lab work. For example: If the handout mentions - 3 grams of benzoquinone was added to the flask. It was then stirred at 100 °C for 1 hour; However, during the experiment, if the student weighed only 2.5 g or heated to 90 °C, the change(s) should reflect in the experimental procedure – either by rewriting the procedure or by highlighting the actual changes in the procedure.

**NOTE:** Your TA will likely have his/her own particular requirements and/or expectations concerning additional details about punctuality, lab behavior, how lab reports must be written and submitted, etc. If you are not sure about anything, **just ask.**

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**Grading For Each Section Continued (IMPORTANT!!!!!!!!!!!!!!!!!!!!!!)**

The **Heading, Summary, Procedure and Pre-lab questions** are a part of the **Pre-Lab write-up**, and should be completed and will be checked before you conduct the experiment. Your TA will write their initials on your paper if you did this Pre-lab write-up. Include this in the report you submit; if the TA's initials are not included somewhere on the lab report you turn in, **5 points will be deducted** since it will be assumed you didn't do the Pre-lab write up by the time of the experiment. Even if you include the Pre-lab in your final report, if the TA's initials are not present, you will not receive credit for this section. You can rewrite the report if you so choose, just include whatever papers that have your TA's initials on it. You can still receive credit for the other sections you complete. **2 points will be deducted** if the questions themselves are not included in the pre-lab questions portion of the pre-lab. This also applies to the post-lab questions as well.

The **Observations, Data, and Results** will be looked at closely when grading. Here, include only the data itself; numbers, figures, etc. and any observations you made. **DO NOT interpret** your results here, you will explain what the data and observations you made might be in the conclusions section. Show the data you have (melting point, distance moved on TLC, mass, mols, etc.), including any calculations (percent yield/ percent recovery, molarity/molality, retardation factors, etc.). Put this data in a list or table, it is easier and nicer to read this way, and more professional. Your observations you made (color change, smell, heat/cold/temperature, reactivity, boiling/freezing/melting, etc.) should be made in a small paragraph or list within this section as well. If you are missing data or didn't see much, include this in your report, and then look at another lab groups experiment and report what you see from them, or what they saw. If you do not include results **3 points will be deducted**. If you do not include observations, **2 points will be deducted**.

The **Conclusions** sections will be scrutinized the most in your report. Here *interpret* what the data you collected means, and what your observations mean. Answer the How and Why of the experiment, even if it might be wrong, write down what you might think.

Examples: Why did something move very fast on TLC?, Why did something move slowly on TLC?

How many spots did you get on TLC? What does this mean? Is it purely based on TLC?

Is it purely based on the melting point? , How do you know? What is the literature melting point?

What can you do to purify it further if you could?

Why do recrystallization?, What is happening during the experiment?

Why did you do the experiment the way you did?

Did you do any chemical tests? What did they tell you? How do you know?

What went wrong during the experiment? What can be done to fix it next time?

What was the percent yield? Is this good/bad? How could you improve it?

You should be answering these questions and others. Not all of them, but explain what is happening, and why. **DO NOT** rewrite the procedure, the summary/heading, or explain *what* you did. This is not a conclusion and you will not receive credit. If you made a mistake, or if you are explaining how or why you didn't get perfect or good results, **DO NOT** say it was due to "human error" or "nature mistakes" or "since humans aren't perfect" or "since nothing is perfect". I know this, you don't need to include it. If you have bad results, there is a reason why besides being not perfect, explain it. Also, **DO NOT** write in anything expect in 3<sup>rd</sup> person singular, and **DO NOT** include "I, He, She, We, the students, Us, Our, His, Her" etc. When writing a report, you include "It".

For example: "3 grams of benzoquinone was added to the flask. It was then stirred at 100 C for 1 hour; A purplish-red color appeared after 15 minutes of stirring."

**For example, DO NOT:** "We added 3 grams of benzoquinone to the flask. Sarah then stirred it at 100 C, and we waited an hour; our contents changed colors after 15 minutes of stirring".

Finally, the conclusion section must be a medium-sized paragraph. It should include 5-6 sentences at least, and if you are following the guidelines above, you should get full credit, even if its wrong information. If the conclusion section is too short, **1-4 points will be deducted**. If the conclusions include the procedure or the results sections rewritten, **3-4 points will be deducted**, and no credit if the conclusions contain only this. **1 point will be deducted** if "I, He, She..." etc. is used anywhere in the paper.

Finally, the **Post-Lab Questions** should be answered appropriately; in a full sentence/ sentences, including drawing, if needed. **Points will be appropriately deducted** for each wrong answer provided in this section, it depends on how many questions there are. **2 points**

**will be deducted** if the question itself is not included in the report, *this includes the pre-lab questions as well*. If the question is not included in the pre-lab questions, **2 points will also be deducted**.

**FINAL IMPORTANT NOTES!**

Write both your name and your lab partner’s name on your report. Make it obvious to me however which is you, and which is your partner. You will **receive a ZERO** if any type of plagiarism is found. **DO NOT** copy from any other person taking the course. The experimental section, results and conclusions sections could be similar because everyone is doing the same experiment, but needs to be written in your own words. In other words, write the report on your own. **DO NOT COPY OR PHOTOCOPY**. Each student must write their own unique report, do not print off two copies of the same report and turn in it for two people, this is considered plagiarism. Plagiarism is a very serious offense, do not take it lightly. Please **“ASK”** your TA if you are not sure about anything!!!

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**M. \*TENTATIVE SCHEDULE FOR LAB LECTURES AND LABORATORY EXPERIMENTS**

\*Lab lectures are Mandatory. Different lab lectures

<b>TOPIC</b>	<b>Lab Lectures (for all sections)</b>	<b>Chapter and page numbers in both editions (6<sup>th</sup>/7<sup>th</sup>)</b>	<b>* Experiment Dates for Sections (all sections)</b>
<b>Check-In &amp; Safety</b>	<b>Week of Sep 2<sup>nd</sup> (sections 002 and 003) and Sep 9<sup>th</sup> (sections 001 and 004)</b>		Week of Sep 9 <sup>th</sup> . <i>Quiz #1, Safety Quiz- Return to TA on the same day. Cannot start experiments without finishing the quiz # 1.</i> Information required to finish the quiz will be covered during the recitation
<b>EXP 1: Melting Point</b>	<b>Week of Sep 9<sup>th</sup> (sections 002 and 003) and Sep 16<sup>th</sup> (sections 001 and 004)</b>	3.2: Melting Points of Pure Urea and Cinnamic Acid 3.3: Melting Points of Urea - Cinnamic Acid Mixtures 3.4: Identification of an Unknown pp. 48-55/48-55	Week of Sep 16 <sup>th</sup> Perform Melting Point Experiment in the Labs

<b>EXP 2: Recrystallization</b>	<b>Week of Sep 16<sup>th</sup> (sections 002 and 003) and Sep 23<sup>rd</sup> (sections 001 and 004)</b>	4.5: Recrystallization of Benzoic Acid From Water and Solvent Pair. pp. 79-81/80-82	Week of Sep 23 <sup>rd</sup> (Perform Recrystallization Experiment in the Labs)
<b>EXP 3: Thin Layer Chromatography</b>	<b>Week of Sep 23<sup>rd</sup> and Sep 30<sup>th</sup></b>	8.1: Analgesics, Identification of Unknown. pp. 175-177/176-178	Week of Sep 30 <sup>th</sup> (Perform TLC Experiment in the Labs)
<b>EXP 4: Sublimation</b>	<b>Week of Sep 30<sup>th</sup> and Oct 7<sup>th</sup></b>	6.3: Sublimation, Identification of an Unknown Substance by Sublimation. pp. 125-128/127-130	Week of Oct 7 <sup>th</sup> (Perform Sublimation Experiment in the Labs) <i>Quiz #2, TA will hand over the paper copy of the quiz in the lab.</i>
<b>EXP 5: Distillation</b>	<b>Week of Oct 7<sup>th</sup> and Oct 14<sup>th</sup></b>	Separation of Cyclohexane: Toulene mixture by Distillation 5.4: Simple Distillation. 5.5: Fractional Distillation. pp. 92-95/93-96	Week of Oct 14 <sup>th</sup> (Perform Distillation Experiment in the Labs)
<b>EXP 6: Liquid-Liquid Extraction</b>	<b>Week of Oct 14<sup>th</sup> and 21<sup>st</sup></b>	7.3: Separate a Binary Mixture by Liquid-Liquid Extraction Based on their Acid/Base Properties (Handout)	Week of Oct 21 <sup>st</sup> (Perform LLE Experiment in the Labs) <i>Quiz #2, DUE: Hand over to your TA in the lab.</i> Late returns without prior notice will be penalized.
<b>EXP 7: Extraction and Sublimation</b>	<b>Week of Oct 21<sup>st</sup> and Oct 28<sup>th</sup></b>	7.2.6: Extraction of Caffeine from Tea pp. 155-157/156-158	Week of Oct 28 <sup>th</sup> (Perform Extraction and Sublimation Experiment in the Labs)

<b>EXP 8: Nucleophilic substitution reactions of alkyl halides.</b>	<b>Week of Oct 28<sup>th</sup> and Nov 4<sup>th</sup></b>	17.1: Sodium Iodide in Acetone. 17.2: Ethanolic Silver Nitrate Solution. pp. 323-324/325-326	Week of Nov 4 <sup>th</sup> (Perform SN1 and SN2 Experiment in the Labs)
<b>EXP 9: Alkenes from Alcohols</b>	<b>Week of Nov 4<sup>th</sup> and Nov 11<sup>th</sup></b>	19.1: Preparation of Cyclohexene from Cyclohexanol pp. 335-336/ 337-338	Week of Nov 11 <sup>th</sup> (Perform Synthesis of Cyclohexene Experiment in the Labs) <i>Quiz #3, TA will hand over the paper copy of the quiz in the lab</i>
<b>EXP 10: Bromination of Cinnamic Acid and Checkout</b>	<b>Week of Nov 11<sup>th</sup> and Nov 18<sup>th</sup></b>	Stereospecific Bromination of trans-cinnamic acid to 2,3-Dibromo-3-phenylpropanoic acid (Handout)	Week of Nov 18 <sup>th</sup> (Perform Synthesis of 2,3-Dibromo-3-phenylpropanoic acid Experiment in the Labs) <i>Quiz #3, DUE: Hand over to your TA in the lab.</i>
<b>Exp 10 Lab Report due week of Nov 25<sup>th</sup>. For Thursday (Nov 28<sup>th</sup>) and Friday (Nov 29<sup>th</sup>) labs, the TA's will decide the date of submission. Late returns are not accepted!!!</b>			

\*Any changes in the syllabus and grading due to chemicals availability, success, and progress of the reactions will be immediately updated to the students.

\*First lab lecture is on Tuesday (September 3<sup>rd</sup>). Section 3210.001 and 004 will not meet for lab lecture during the week of September 3<sup>rd</sup>.  
First laboratory experiments (for all sections) will start the week of Sep 9<sup>th</sup>.

### Any changes to the syllabus will be updated by the instructor

#### **N. EMERGENCY NOTIFICATION & PROCEDURES**

UNT uses a system called Eagle Alert to quickly notify you with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). The system sends voice messages (and text messages upon permission) to the phones of all active faculty staff and students. Please make certain to update your phone numbers at <http://www.my.unt.edu>. Some helpful emergency preparedness actions include: 1) know the

evacuation routes and severe weather shelter areas in the buildings where your classes are held, 2) determine how you will contact family and friends if phones are temporarily unavailable, and 3) identify where you will go if you need to evacuate the Denton area suddenly. In the event of a university closure, labs scheduled during that time are excused absences in addition to the one dropped lab.

**O. ACADEMIC INTEGRITY EXPECTATIONS AND CONSEQUENCES (UNT POLICY 06.003)**

UNT promotes the integrity of learning processed and embraces the core values of trust and honesty. Academic integrity is based on educational principles and procedures that protect the rights of all participants in the educational process and validate the legitimacy of degrees awarded by the university. In the investigation and resolution of allegations of student academic dishonesty, the university's actions are intended to be corrective, educationally sound, fundamentally fair, and based on reliable evidence. Please see the document for more details. <https://policy.unt.edu/sites/default/files/06.003.pdf>

**P. STUDENT PERCEPTION OF TEACHING (SPOT)**

Student feedback is important and an essential part of participation in this course. The Student Perception of Teaching (SPOT) is a requirement for all organized classes at UNT. This short survey will be made available at the end of the semester to provide you with an opportunity to evaluate how this course is taught.

Extra credit: TA may give up to 5 points extra credit for completing the SPOT online evaluation form.

**Q. SUCCEED AT UNT**

UNT endeavors to offer you a high-quality education and to provide a supportive environment to help you learn and grow. And, as a faculty member, I am committed to helping you be successful as a student. Here's how to succeed at UNT: **Show up. Find Support. Get advised. Be prepared. Get involved. Stay focused.** To learn more about campus resources and information on how you can achieve success, go to <http://success.unt.edu/>

**R. STUDENT LABORATORY SAFETY AGREEMENT – SEE THE FALL 2019 AGREEMENT ON CANVAS**

**S. HELPFUL VIDEO DEMONSTRATION LINKS**