THIS COURSE IS:

CH 318 N

Dr. John A. Colapret

CH 318 N LECTURE 1

Textbook Assignment: Chapter 12 Infrared Spectroscopy

Homework (for credit): Posted (Due Sep 8th).

Today's Topics: Course & Professor Introductions

What is the "Analytical process"?

Notice & Announcements:

CH 118 L Organic Lab Announcement

The first 118 L wet lab is September 3rd

For First lab you will need the following material:

- ❑2 sturdy combination locks
- ❑Proper clothing (close-toed shoes, at least short sleeve shirt and pants
- ❑A syllabus that can be obtained from the webpage courses.cm.utexas.edu/cfjetland/ch210c (click on the 118L eng link, then click syllabus)
- ❑A Lab Notebook

COURSE WEB SITE:

To reach the web site for CH 318N, point your browser to the following URL:

http://colapret.cm.utexas.edu/courses/CH%20318%20N.htm

- ➢The web site will be an integral component of this course.

Bookmark it.

- ➢It will be updated regularly with course announcements, lecture notes, homework assignments, and exam information.
- ➢Important updates will be announced in lecture, but you should plan to visit the web site regularly so you don't miss anything.

COURSE MATERIALS:

Textbook (required): Brown, Foote & Iverson, *Organic Chemistry*, 5th Ed., Brooks/Cole, 2008.

Study Guide (recommended): Iverson & Iverson, *Student Study Guide and Solutions Manual for Organic Chemistry*, 5th Ed., Brooks/Cole, 2008. Purchase of a molecular models kit is also highly recommended. Although use of models will not be allowed during exams, most students find them to be extremely helpful when first learning how to visualize the 3-dimensional structures of organic molecules.

Prerequisites and Corequisites:
CH 204 or CH 317 with a grade of at least C. CH 310M (or CH 610A) with a grade of at least C. Credit or registration for CH 210C. Please visit the Chemistry Lower Division Office as soon as possible if you are having trouble enrolling in a lab section.

Adds, Drops and Withdrawal:
Sep 11: Last day of the official add/drop period. After this date, changes in registration require the approval of the department chair and usually the student's dean.
Sep 23: Last day to drop the class without possible academic penalty.
Oct 21: Last day a Q drop can/will be assigned by the instructor. You will need the approval of Dr. Colapret, your academic adviser, and your college's dean to drop the course at this point. After this date, withdrawal from the course requires a substantial non-academic reason, and can only be approved by your college's dean.
Friday Dec 4: Last Class Day.

ATTENDANCE:

- Although attendance will not be monitored, the lectures are the heart of this course.
- Attendance at all lectures is strongly suggested.
- Students will be responsible for all information and announcements presented in lecture.
- **Cell phones, pagers, watch alarms, etc. must be turned off during all lectures and examinations.**

OFFICE HOURS:

Please take advantage of office hours if you have any questions about the course content (lecture notes, textbook readings, homework assignments). Although e-mail has become increasingly important as a means of communication in modern society, it does not provide a convenient forum to discuss a visual subject like organic chemistry. You'll need to visit us ***in person*** to have your chemistry questions answered so that we can draw structures and work with models.

OFFICE HOURS:

Dr. John Colapret

T Th: 11-12:30 WEL 4.124

UT email: jcolapret@cm.utexas.edu

Other times by appointment (please set up by email).

TA: TBA

UT email:

HOMEWORK:

The exams in this class require that you to solve problems. The best way to prepare for the exams, then, is to work as many practice problems as you possibly can. To encourage this good habit, two different types of homework will be assigned on a regular basis:

(1) **OPTIONAL**: Several homework problems from the textbook will be posted to the WEB site. These problems will typically be related to the material we expect to cover in lecture. You should attempt to work these problems after you study your lecture notes. Assigned problems from the textbook will not be collected or graded, but you'll want to work through as many of them as possible.

(2) **GRADED** Graded homework problems from outside of the text will also be assigned each week (13 total over the course of the semester). These problems will be posted on the course web site every Monday, and you will be responsible for downloading them from the web site.

The deadline for submitting your answer to a graded homework problem will be 1 week after the problem is posted, at 3:00 p.m. In other words, a "Graded Homework Problem" posted on Monday must be turned in no later than 3:00 p.m. the following Monday.

- Answers to all graded homework problems must be submitted to the collection box located outside of the Chemistry Lower Division Office (WEL 2.212). **Homework must be turned in before the deadline, or it will not be graded.**
- Late homework, or homework deposited in the wrong slot of the collection box, will automatically receive a grade of 0.
- Out of fairness to all, there will be no exceptions to this policy. Only the best 10 out of 13 homework grades will count in the calculation of your final course grade.
- You may therefore miss up to 3 graded homework assignments without penalty.

Each "Graded Homework Problem" will be worth 10 raw points. Your best 10 out of 13 homework grades will be added together (perfect score would be 100). Unlike exam grades, your final homework grade will not be curved. The graded homework problems are worth 10% of your final course grade.

Note: this is enough to change your final letter grade for the course.

EVENING MAJOR EXAMS:

Three evening major exams will be given during the semester. These exams are scheduled from 7:00 to 9:00 p.m. on the **Tuesday** evenings listed below. The dates were published in the course schedule. Each exam will cover the approximate range of lectures indicated below:

Exam	Coverage	Date
Exam #1	**Lectures 1–10**	**Tuesday 9/22**
Exam #2	**Lectures 11–16**	**Tuesday 1020**
Exam #3	**Lectures 17–30**	**Tuesday 11/17**
FINAL	**Comprehensive**	**Saturday 9/12: 9-12 AM**

- All exams will be "closed book", and you will not be allowed to use molecular models, calculators, books, or notes.
- Exams written in pencil will not be eligible for regrades. Answers written in pencil with ink overlay will not be graded. Answers written in red ink will not be graded.
- **Bring your valid UT ID card to all exams, since you will need to show it when attendance is taken during the exam.**
- Exams will commence promptly at the stated time. Students arriving after the first exam has been turned in will not be allowed to take the exam.
- Instances of academic dishonesty will be handled according to university policy, and will likely result in failure of the course.

GRADING POLICY:

Your final course grade will be calculated as a ***weighted*** numerical average, on a 100 point scale, as described below. You can miss any one major exam for any reason, since only your best 2 out of 3 major exam T-scores will be used in the calculation of your final weighted numerical average. Also remember that only the best 10 out of 13 graded homework scores will count.

Weight Graded Item (max. score = 100)

40.0% Final Exam Grade

25.0% Highest Exam Grade

25.0 % Second Highest Exam Grade

10.0% Graded Homework

Each major exam will be worth a total of 150 raw points (this provides the graders with maximum flexibility in assigning partial credit). Your raw score (out of 150) will then be converted into a raw percentage (out of 100), which in turn will be converted into a standard T-score. **The T-score represents your "curved" grade on the exam, on a 100 point scale.**

T-scores will be calculated using the following formula:

$$T = [((x - \bar{X})/s) \cdot 10] + 70$$

where x = your raw percentage (out of 100)

$\bar{X}$ **= the raw percentage average for the class =** $\Sigma x/N$

N = number of exam scores recorded

s = standard deviation = $[\Sigma (x - \bar{X})^2/(N-1)]^{1/2}$

In general, using T-scores increases everyone's grades compared to using absolute percentages. Nevertheless, we will keep track of your absolute percentage scores on every test. If your absolute percentage is ever higher than your T-score, we will use the absolute percentage score for your course grade calculation. Thus, no grade will be lowered by using a curving system.

The following conversion table will be used to determine final course letter grades*:

A range: 90.000 ≤ T

B range: 80.000 ≤ T ≤ 89.999

C range: 70.000 ≤ T ≤ 79.999

D range: 60.000 ≤ T ≤ 69.999

F range: T < 60.000

*Missing two major exams or the final exam without a documented, valid excuse will automatically result in a failing grade.

Grade boundaries do need to be established somewhere, and the unavoidable consequence is that some students will have borderline scores.

Since everyone is graded according to the same standards, for reasons of fairness, the policy in this course is to NOT adjust students' grades in such circumstances.

Final grades assigned according to the scheme above will indeed be final, and will not be adjusted for any reason. Requests to do so, cannot be considered.

REGRADE POLICY:

- Requests for major exam regrades must be submitted in writing to the Lower Division Office (WEL 2.212) within ***one week*** after the return of the graded material. When you fill out the regrade request form, please provide a clear and concise explanation of the perceived problem. To demonstrate that you have reviewed the "official" answer key, you will also be asked to staple a copy of the relevant page(s) from the posted answer key to your regrade request form.
- Regrades will not be considered for exams written in pencil, for questions answered in red ink, or for questions that refer to "see back of page" or that give similar instructions to graders.
- Regrades will not be considered for less than a 5 raw point change, except for mistakes in addition by graders. Do not write on the exam itself, as submitting an altered exam for a regrade is considered to be cheating and will be treated as such.
- Specific instructions for submitting regrade requests will be posted after each major exam. ***There will be no regrades for the final exam***.

ACADEMIC DISHONESTY:

We expect each of you to conduct yourselves honorably. Students who violate the University rules on scholastic dishonesty are subject to disciplinary penalties including the possibility of failure in the course and dismissal from the University. ***The university policies on scholastic dishonesty will be strictly enforced.***

1. **DO NOT FALL BEHIND.** There is a large volume of material to be covered and each concept is built upon the previous one; this means that the material is cumulative. Get into the habit of reviewing each day's lecture and the previous days lecture; you will see how the whole is related to the parts. A good way to do this is to re-copy your class notes. You can add material and other hints and you will quickly recognize things you do not understand. Ask for help that day!
2. **OUTLINE THE TEXT.** This sounds like it would require too much time. However, you will be reading the textbook anyway, so an outline is an effective way to condense the material and merge it with your class notes. A complete outline will save you hours of study time when you are reviewing for exams.

3. **UNDERSTAND THE BASICS.** All of chemistry is governed by the basic laws of physics and mathematics. We will not be dealing with the high levels of math in this class, but the results of the calculations are simplified to drawings of structures. Most reactions can be understood by attaching positive "pieces" (electrophiles) to negative "pieces" (nucleophiles). Regardless of the topic, try to identify the basic underlying principle. This will always be presented in the lecture.
4. **DEVELOP YOUR ANALYTICAL THINKING**. This is an acquired skill; all of us have had to learn it. One of the best ways to develop this cognitive process is to solve as many problems as you can. Homework sets (for graded credit) will be assigned, but all the problems at the end of the chapters deserve attention. Some of those will appear on the major exams.

5. **BRAIN MAINTENANCE.** This material is intense and you can only absorb a finite amount of material in any one study session. You have other courses to study as well. Arrange a daily schedule so that you mix in a non science course with your science courses; take a study break at least every 2 hrs; exercise and eat balance meals, your brain requires oxygen and glucose to function properly; get plenty of sleep; if you plan to be up late, take a nap in the late afternoon. A certain amount of school (course) anxiety (stress) will be natural, but your best defense against it will be thorough preparation.

Unit 1: Organic Structure Determination (12, 13, 14)

Unit 2: Introduction to Organometallic Compounds (15)

Unit 3: Aldehydes and Ketones (16)

Unit 4: Carboxylic Acids and Derivatives (17 & 18)

Unit 5: Enolates and Enamines (19)

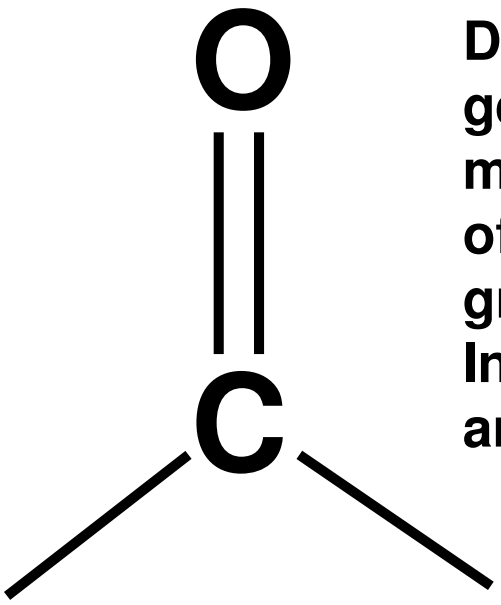
Unit 6: Conjugated π Systems and Aromaticity (20–22)

Unit 7: Amines (23)

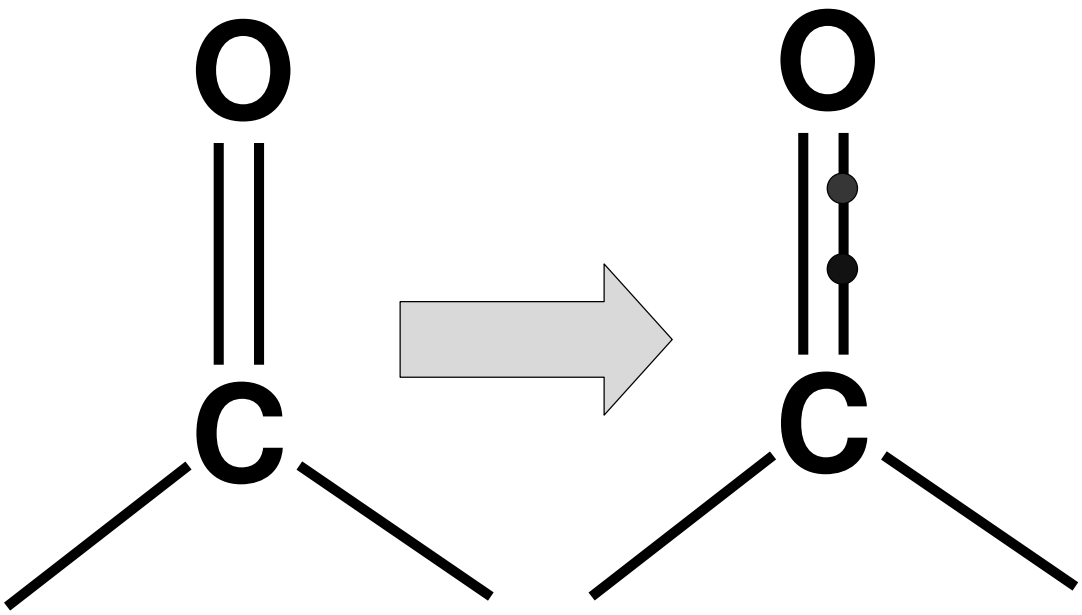
Unit 8: Pericyclic Reactions (24, selected sections)

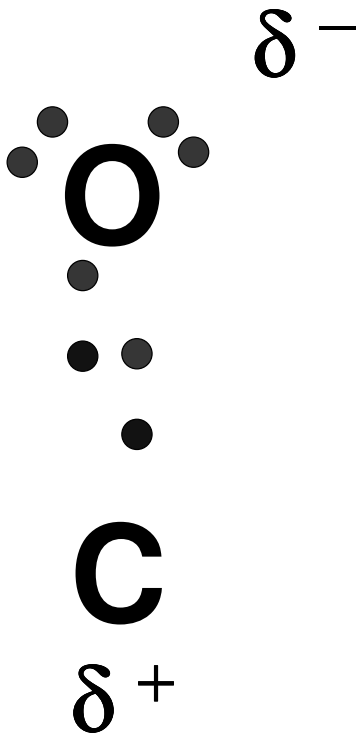
Unit 9: Biological Molecules (25–28, selected sections)

Unit 10: Organic Polymers (29, selected sections)



Describe, in a general scheme, the main reaction types of the carbonyl group.
Include both acidic and basic conditions.

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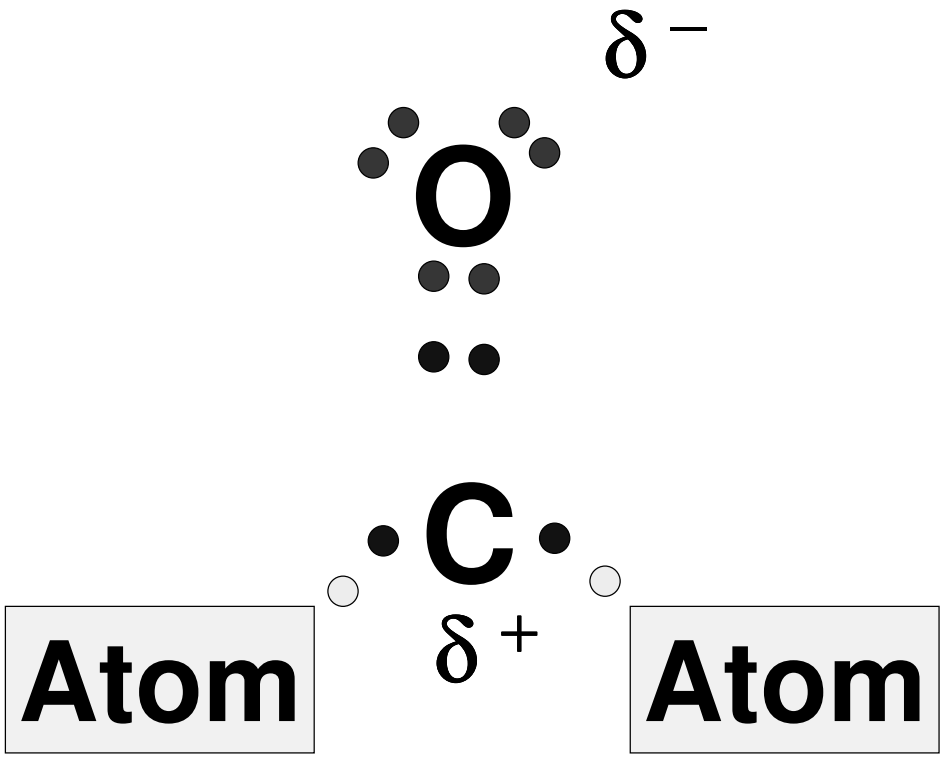
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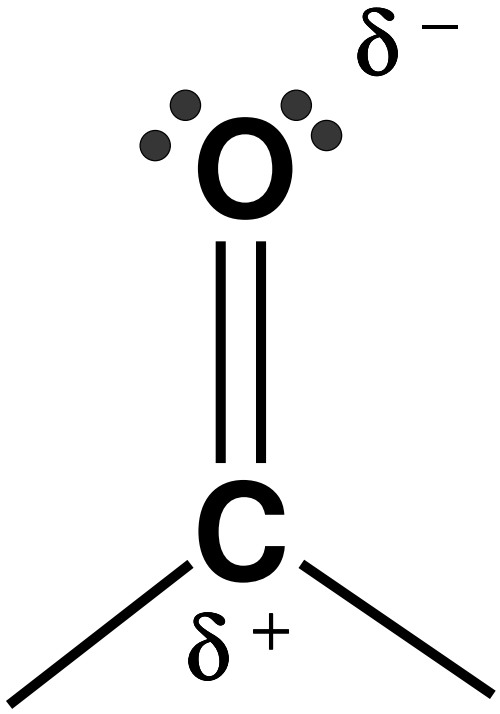

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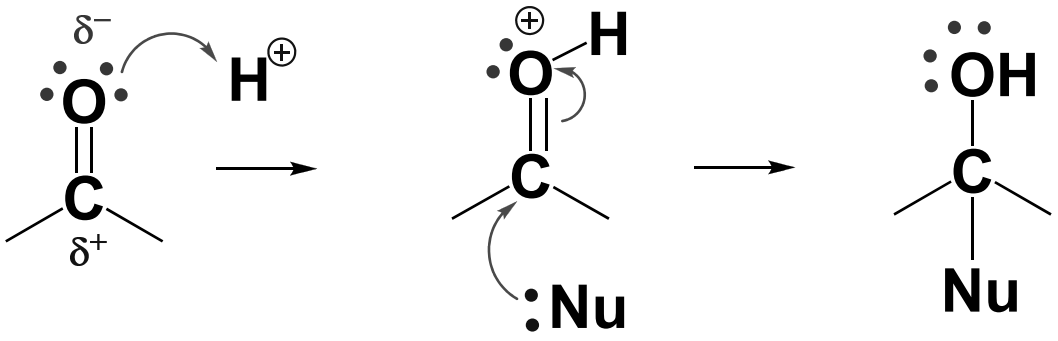
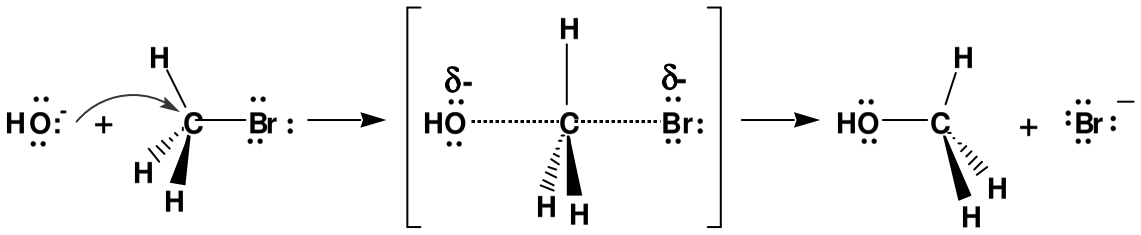


Last semester, nucleophilic substitution reactions were presented:



Transition state with simultaneous bond breaking and bond forming