CHEMISTRY 202 - ORGANIC CHEMISTRY II

Summer Session II, 2018
June 27 – August 2, 2018
M-Th 9:00-10:45
H-355

Instructor: William A. Price, Ph.D.
Office: H-345
Phone: (215) 951-1261
Mail: price@lasalle.edu
http://www.lasalle.edu/~price

CHM 202 Homepage: http://www1.lasalle.edu/~price/CHM202 summer.htm

Texts: L.G. Wade *Organic Chemistry*, 9th Edition, Pearson, Boston, MA, 2017.
ISBN10: 0-321-97137-X, **ISBN13**: 978-0-321-97137-1
Sapling Learning Homework: *www.SaplingLearning.com*
Sapling Learning Online Homework: $40.00 for 1 semester.
Here is a direct link to our course site:
La Salle University - CHM 202 - Summer18 - PRICE

Instructions for how to enroll: Please go www.saplinglearning.com/login to log in or create an account. The following link includes detailed instructions on how to register for the course: https://community.macmillan.com/docs/DOC-5972-sapling-learning-registering-for-courses.

Laboratory –
a) J. R. Mohrig, C.N. Hammond, P.F. Schatz, and T.C. Morrill, Custom Laboratory Manual from ***Modern Projects and Experiments in Organic Chemistry***, Freeman, New York, 2003.
b) Optional: J. R. Mohrig, C.N. Hammond and P.F. Schatz, ***Techniques in Organic Chemistry***, Fourth Edition

Recommended:
For those not purchasing the bundle in the bookstore, ***Chem-Tutor*** Student Modeling System for Organic Chemistry, Aldrich Chemical Co. (available from stock room – limited supply).

Course Description and Learning Objectives:
Chemistry 202 is a course that will build on the foundation that was established in CHM 201. The course will begin with the study of structure, synthesis and reactions of alcohols. *It is important to recognize that much of this continues the substitution and elimination concepts from the fall semester.* We will then focus on structure elucidation using infrared (IR) spectroscopy, mass spectrometry and nuclear magnetic resonance (NMR) spectroscopy. *Much of the Infrared Spectroscopy will be covered by your*

laboratory instructor. Take a look at some excellent tutorials and spectroscopy resources on my **LINKS** page. The course will then continue with the study of different functional groups including ethers and epoxides, followed by conjugated pi systems including pericyclic reactions and aromatic (benzene-type) chemistry. After a brief look at ultraviolet (UV) spectroscopy, the course will continue with examination of structure, preparation, and reactivity of oxygen-containing functional groups within molecules. The approach used will incorporate orbital analysis (structure), nomenclature, electron distribution and flow (mechanism), practical applications, reactions, and ultimately synthesis.

The amount of material to be covered is quite large and *is compressed into 5.5 weeks*, thus it is necessary that you keep up with the course lecture to lecture. We will not cover every section of every chapter – your tests and quizzes and homework will only cover material we have discussed in class. *Your ability to apply abstract material to specific, sometimes new situations is a crucial learning goal in this course*. One cannot expect to succeed by studying the day or two before an exam only. This is an abstract, cumulative subject that requires daily attention. One suggestion is to read the appropriate chapter and print and read the powerpoint slides prior to attending class. This way, the material covered in class will seem somewhat familiar (what a great feeling) and will hopefully clarify any questions you might have. Do as many of the chapter problems in Wade as possible. Do not hesitate to ask questions in class, after class or during any office hour. Use of the study guide is helpful, but only if you first attempt the problems on your own. You must put time into this course in order to succeed. The more problems you do (especially in the spectroscopy portion of the course) the more comfortable you will be with the material.

Students of organic chemistry are often overwhelmed by the number of compounds, names, reactions, and mechanisms that confront them. Perhaps the most important skill that you developed in CHM 201 was the ability to *organize*, *categorize* and *apply*. By learning an abstract concept and having the flexibility to apply it to a variety of similar situations, the amount of memorization is drastically reduced.

The purpose of a good textbook is to organize this vast amount of material into a few basic principles off of which many extensions and applications can be made. Our goal is to become problem solvers or diagnosticians at the molecular level - not memorizers! On successful completion of the course the student will be able to demonstrate competency in the course material, as well as the ability to report and analyze laboratory observations.

Strategy:

The amount of material to be covered is quite large (over 600 text book pages) thus it is imperative that you keep up with the course. Keeping up is most easily accomplished by reading the appropriate chapter prior to attending class. *This is not a course where one can effectively cram immediately prior to an exam.* Particularly when the course is compressed into 5.5 weeks, working every day is imperative. Work as many of the recommended problems from the book as possible and ask for help when necessary. You may also find that rewriting your lecture notes in a less hurried (and

more legible) fashion will help in your retaining and comprehending the material. The powerpoint slides are all posted on our website. You find it easier to either print them ahead of time or use a laptop or i-Pad in class to follow along. You will find the study guide useful only if you attempt the problems on your own first.

Sapling Learning Homework:

A schedule of homework problems is on the calendar once you enter *Sapling*. **There will be several problem sets assigned throughout the semester.** They will be posted roughly a week before they are due. These may take up to two hours to complete so do not start them at the last minute. You can save your work and come back to it at a later time. A very important new skill that you will continue to use is the ability to *draw molecules using the template drawing tools* supplied in pertinant questions. **The first week**, *if you haven't already done so*, you should do the modules on "Drawing Tips", "Curved Arrow Overview" and "Stereochemistry Training" so that you are familiar with nuances like subscripts, superscripts, drawing Lewis structures and structures of more elaborate organic molecules (sometimes in 3 dimensions), etc.

Chapter Sequence and Suggested Problems:

We will cover chapters 10-22 in CHM 202. ***Chapter coverage will be selective***. It is the student's responsibility to know what portions of chapters are not covered in lectures and thus not covered on exams.

The text contains an excellent set of problems. It is recommended that you solve the problems in the running text as you read the material (you should use a composition notebook for problems). The recommended problems at the end of the chapters can be used to fine tune your grasp of the material. You will also find many tutorials, practice problems from old exams on the website.

Grades:

The course consists of both lecture (76%) and laboratory (24%). Your laboratory grade is determined by your laboratory instructor. *In order to pass the course, you must have a passing grade in both parts.* The breakdown is as follows:

4 hour exams	400 pts (50%)
Homework	75 pts (9.4%)
Quizzes	125 pts (15.6%)
Laboratory	200 pts (25%)

A schedule of exams with *probable* coverage is shown below and is found on the class schedule on the last page of the syllabus:

Friday, July 6	Chapters 10-12
Tuesday, July 17	Chapters 13-15
Wednesday, July 25	Chapters 16-18
Thursday, August 2	Chapters 20-22

Final Grades:

Assessment of your performance on the various assignments will culminate in a letter grade (I do use +/- grade system).
Typically, a letter grade of A = 90-100; B = 80-89.9; C = 70-79.9; D = 60-69.9; F < 60.

Examinations:

Examination questions will be drawn from lecture material, assigned readings, and homework problems. Each of the exams will build off of concepts covered earlier in the course. Therefore, while exams will not be explicitly designed to comprehensively retest all earlier sections of the text, it will be important to remain knowledgeable and competent with previous concepts covered in the course.

Absence from an examination, without prior approval, will result in a zero score for the exam. If an emergency occurs the day of the exam, the instructor must be informed within 24 hours (by phone or email). Any questions about whether an absence is excused or not will be at the discretion of the instructor.

Homework:

Homework will be posted on the Sapling Learning site in a timely fashion. Due dates will be posted as well. After the due date, the assignment will be visible, but not be accessable for credit unless you have a reasonable excuse.

Quizzes will be take-home and handed out after five lectures of new material between exams. Although the quizzes are open book and open powerpoint slide, you are to work on the quizzes individually – no collaboration. Quizzes are due at the beginning of class according to the schedule below.

Academic Integrity:

It is your responsibility to maintain a high degree of integrity in your work. Cheating of any kind will not be tolerated and will result in a failure in the course! The following are considered cheating: (a) Sharing of results and answers on lab reports, graded assignments, quizzes and exams; (b) Use of unauthorized materials during an exam (cell phones included); (c) Plagiarism, including copying a fellow student's lab report or homework. When in doubt, both parties involved in plagiarism (both the copier and the copyee) will be held responsible for the integrity violation. Please refer to the school's official Academic Integrity Policy for further information as well as the Student Guide to Rights and Responsibilities.

Students with Disabilities:

Students with disabilities should refer to the student handbook for resources that are available to them as well as compliance with the American Disabilities Act.

Syllabus Change Policy:

This syllabus is a guide and every attempt is made to provide an accurate overview of the course. However, circumstances and events may make it necessary for the instructor to modify the syllabus during the semester and may depend, in part, on the progress, needs, and experiences of the students. The instructor will give notice when changes to the syllabus are made.

Missed exams can only be made up with documentation for the absence *and* a note from your academic advisor.

CHM 202 – Summer II, 2018
Class Schedule

Text: L.G. Wade, *Organic Chemistry*, 9th edition, Pearson Publishing, 2017
Instructor: William A. Price, Ph.D.

Monday	Tuesday	Wednesday	Thursday	Friday
		June 27 Introduction CH 10 review	June 28 CH 11	June 29 -
July 2 CH 11 Lab 16	July 3 CH 12 Quiz 1 due Lab 16 (pt.2)	July 4 -	July 5 CH 12 Lab 14	July 6 CH 13 **Exam I (CH 10-12)**
July 9 CH 13 Lab 14 (pt.2)	July 10 CH 14	July 11 CH 15 Quiz 2 due Lab - Spectroscopy	July 12 CH 15 Lab 11	July 13 -
July 16 CH 16 Lab 13	July 17 CH 16 **Exam II (CH 13-15)**	July 18 CH 17 Lab 13 (pt. 2)	July 19 CH 17 Lab 15	July 20 -
July 23 CH 18 Quiz 3 due Lab 12	July 24 CH 18	July 25 CH 20 **Exam III (CH 16-18)**	July 26 CH 20 Lab 18	July 27 -
July 30 CH 21 Lab 18 (pt. 2)	July 31 CH 22 Quiz 4 due	August 1 CH 22, review	August 2 **Exam IV (CH 20-22)**	August 3 -