

Chemistry 118C, Spring 2012
MWF 8:00-8:50 am, 123 SciLec

Instructor: Dr. S. Lievens
Office: 3313 Earth and Physical Sciences
Phone: (530)-752-7630
Email: sc lievens@ucdavis.edu Please contact your TA or the head TA with questions about missing lab, TA office hours, and lab reports.

Office hours: Mon. 11 am – 12 pm, Wed. 9:30 am -10:30 am or by appointment.

Head TA: Zahra Khedri (zkhedri@ucdavis.edu)

Texts: “Organic Chemistry, 6th Edition”, K.P.C. Vollhardt & N.Schore
“ Study Guide/ Solution Manual, 6th Ed.”
“Chemistry 118C Laboratory, “Spring 2012”

Course Fee: CHE-118C has a course lab fee of \$40.

Scope: CHE-118C is a lecture and laboratory course designed for health and life science majors. Working knowledge of the material in CHE-118A and CHE-118B is essential.

Prerequisites: CHE-118B with a passing grade.

Website: Course website is on smartsite.

LSC: <http://stuaff.ucdavis.edu/lsc/Chem./Chemistry.html>

Exams and Grading:

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| Midterm 1 – Fri. Apr. 27 th | Chapters 19, 20, 21 | 20% |
| Midterm 2 – Fri. May 25 th | Chapters 22, 23, 25 | 20% |
| Final – Sat. June 9 1-3 pm | Chapter 19-26 | 38% |
| Laboratory | Experiments 1-10 | 10 % |
| Online Problem Sets | TBA | 12% |
| | TOTAL | 100% |

Grading Policy: Exam grading will be determined by the absolute quality of work. There is no preset quota for any letter grades. It is possible for everyone to get an A.

Early/Late Exams: There will be no late or early exams given. The grades for students with a *legitimate* reason for missing a midterm will be determined based on the students performance on the exams taken. Written documentation of the reason for absence from the exam is required. Students who miss the final will be given an incomplete *only* if they have a *legitimate* reason for their absence and a passing grade prior to the final.

Regrades: If you think there was an error in the grading of your exam, write a short note indicating the error, attach it to your test and return it to your TA by the deadline. *Do not write, mark or change any portion of your exam or your exam will not be regraded!*

Labs and Problem Sets are due at the specified times. Late problem sets will not be graded without a legitimate reason. Late labs will be deducted 1 point when turned in late on the same day as they are due. Lab reports turned in next day to 1 week late will lose 2 points. Lab reports more than 1 week late will receive 0 points.

Repeaters:

Please enroll in BRO section

Submit a repeaters form (Lab Score Request Form) to the head TA before April 6th. Repeater forms may be found outside room 114 Chemistry.

Exams may be picked up at Dr. Lievens's office hours.

Suggested Practice Problems:

Chapter 19: 1-17, 19, 20-27, 30, 32, 33, 34, 35, 37, 38, 39, 41, 44, 45

Chapter 20: 1-27, 29, 32, 33, 34, 35, 37-41, 43-45, 47-52, 54, 56, 58-64

Chapter 21: 1-19, 20, 21, 22-26, 28-33, 35-45, 47, 48, 50, 51

Chapter 22: 1-27, 28, 29, 30-48, 50, 51, 53-58, 61

Chapter 23: 1-21, 22, 23, 24-35, 38-41, 43, 44

Chapter 24: 1-28, 29, 30, 31-44, 47-49, 51-55

Chapter 25: 1-29, 30-32, 34-9, 41, 43-50, 52, 53, 55, 56

Chapter 26: 1-21, 26-30, 33, 35, 41-45, 47, 48, 50, 52, 54, 56

Suggested problem assignments are given as a guide in your studying and for self-testing of your mastery of the material covered in the lectures. It is suggested that you work on the exercises given within the chapters (you will find the solutions to these at the end of the text) before proceeding with the problems at the end of the chapters. Answers to the latter are given in detail in the, "Study Guide and Solution Manual". Also the 'pre-professional' problems at the end of the chapters are good practice for those who intend to take the MCAT.

Tips for Study:

Make a schedule to study at least 6 hours a week, regularly. Study should be active and not passive. Simply reading the chapter or reviewing the notes generally will not work.

- a. Skim the material in the book before it is presented in lecture.
- b. Take notes in class and then rewrite them to see if they make sense. Put asterisks by important points and question marks by material which you don't understand.
- c. Compare lecture notes and material in the textbook. Talk to me or a TA concerning the material you have marked with a question mark.
- d. You must be able to solve problems by yourself. Check your study guide only after you have tried to work out the problem on paper several times.

Come to office hours as SOON as you have difficulty or even if you don't. Don't wait until the last minute to get help.

Student Learning Objectives for 118 C 3rd Quarter Organic Chemistry for Health Science Majors

Upon completion of this course students should be able to:

Name compounds containing carboxylic acids, carboxylic acid derivatives (e.g. esters, acid halides, anhydrides, and amides) and/or amines using the IUPAC system and recognize the common names of everyday molecules.

Understand and explain the reactions of carboxylic acids and carboxylic acid derivatives including product determination, reagents used in reactions, and mechanisms such as hydroboration and electrophilic addition to an alkene.

Understand and explain the reactions of amines including product determination, reagents used in reactions and mechanisms such as alkylation, reductive amination, Hofmann elimination, and nitrosylation.

Understand and explain the reactions of benzene substituents including product determination, reagents used in reactions and mechanisms for phenol chemistry, benzylic redox chemistry, and diazonium reactions

Understand and explain the reactions adjacent to an ester carbonyl including product determination, reagents, and mechanisms such as Claisen condensations and enolate reactions.

Describe and identify carbohydrates, their reactions and properties including: D vs. L, anomers, redox reactions, derivatization, glycosides, monosaccharides, disaccharides and polysaccharides.

Describe and identify heterocycles, their reactions and properties, including reactions and mechanisms of pyridine, benzopyridines, and non-aromatic alkaloids.

Describe and identify amino acids, peptides and protein chemistry including properties of amino acids, synthesis of amino acids and peptides, protein sequencing, and protein synthesis.

Understand and explain the principles of IR, ^1H NMR, and ^{13}C NMR spectroscopy of carboxylic acids, carboxylic acid derivatives, and amines and to integrate this with spectroscopy from 118A and B to allow for identification of unknown compounds from their spectra.

Integrate reactions of carboxylic acids, carboxylic acid derivatives, benzene substituents and amines with reactions from 118A and B into multistep synthesis of target molecules.