

CHEMISTRY 372

Spring 2020

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Office Hours: 1:30 PM – 2:30 PM on Monday, Wednesday and Friday.

WWW: <http://danstelck.weebly.com/index.html>

Textbook: Organic Chemistry, Structure and Function 8th Edition: Vollhardt

Calculator: Text entry calculators will not be permitted during any of the exams.

Model Kit: An organic modeling kit will prove to be beneficial.

Chemistry 372 is the second semester of a two-semester organic chemistry course. The intent of this course is to build on the principles and theories of organic chemistry introduced in Chemistry 277. Specifically, this course will delve into the properties, preparations and reactions of organic compounds.

GENERAL COURSE INFORMATION

Web Site (<http://danstelck.weebly.com/index.html>)

An essential component of this course is the course web site. Familiarize yourself with this site as soon as possible. Many of the course materials including lecture supplements and reading assignments will be found here. You should be checking the web site several times a week to look for new course related information.

Lectures:

During lectures I will outline goals, discuss fundamental principles and present example problems from the reading material. You should read ahead in the textbook prior to each lecture and take your own notes during the lecture itself. After lecture, you are encouraged to reread and study the appropriate pages in your textbook. Be sure that you understand the examples presented in lecture and the textbook. Failure to comprehend one part of the material will lead to subsequent difficulties later in the course. Work the problems and exercises throughout each chapter. Although these exercises and problems will not be collected or graded, you are expected to work them out after the relevant material has been discussed in lecture. This course will put emphasis on learning and understanding the material. In order to succeed in this class it is essential that you read the book and work through the problems.

Homework Assignments: (<http://www2.saplinglearning.com>)

There will be assigned online homework problems for each chapter. You will need to register on Sapling to gain access to these problems. Below are the instructions on how to register.

1. Go to www.saplinglearning.com/login to create an account. If you already have a Macmillan Learning account you can log in with your existing credentials and skip to step 3.
2. Create your password and set all three security questions.
3. Start typing in your institution to select from the options that appears in the Primary Institution or School name field. If your institution does not appear you can add it by typing in the full name.
4. Accept the terms of use and click “Sign Up”.
5. Check your email for the confirmation link to complete your registration and return to the login page.
6. Set your institution by searching using your institution’s full name and selecting the appropriate option from the menu that appears.
7. Under Enroll in a new course, you should see Courses at University of Idaho. Click to expand this list and see courses arranged by subject. Click on a subject to see the terms that courses are available.
8. Click on the term to expand the menu further (note that Semester 1 refers to the first course in a sequence and not necessarily the first term of the school year).
9. Once the menus are fully expanded, you’ll see a link to a specific course. If this is indeed the course you’d like to register for, click the link.
10. *If Applicable*, to access your eBook click on the image of the cover on the right sidebar of your course site. Create an account or log in with an existing Macmillan Learning eBook account.
11. Review the [system requirements](#) and confirm that Flash is updated and enabled in your browser.
12. **Need Help?** Answers to many common questions are found in our Student Support Community. If you need direct assistance you can also contact technical support:<https://macmillan.force.com/macmillanlearning/s/>.

Some of these homework problems will be graded and others ungraded. All problems assigned will be helpful in mastering the material. There will be a total of 100 points for all graded homework. All assigned online homework problems must be completed by the assigned time.

Exams:

There will be two exams lasting approximately 50 minutes each and a two hour comprehensive ACS Final. The ACS exam is a nationally standardized test and will cover material from both Chemistry 277 and Chemistry 372. Check the table below for the examination dates. All regular exams begin at 11:30 AM. The location of your exam will be in Renfrew 112. Make-up exams will be given only in cases of serious conflicts.

Arrangements must be made with me in advance for a make-up exam. The make-up final exam must be completed during the alternate exam time.

A PHOTO ID IS REQUIRED AT ALL EXAMS.**Text entry calculators or any other electronic devices are not allowed during exams.****Grading:**

Your grade in this course will be determined by your performance on two exams, online homework and the final.

The point breakdown and exam schedule is as follows.

Exam #1	March 4 th	150 points
Exam #2	April 22 nd	150 points
Final Exam	May 14 th , 10:15 AM – 12:15 PM	300 points
Online Homework		100 points
Total		700 points

Your course grade will be based on your final total number of points in the course.

Total Points	Course Grade
630-700	A
560-629	B
490-559	C
420-489	D
below 420	F

Learning Outcome:

By the end of this course, students should be able to:

- Draw and interpret structural formulas commonly used in organic chemistry.
- Identify electrophiles and nucleophiles.
- Predict reactivity of organic compounds based on structure and bonding.
- Predict the geometry of organic structures.
- Predict general trends in physical properties.
- Identify the general classes of organic compounds.
- Draw and name alkanes, alkenes, alkynes, alcohols, alkyl halides, thiols and cyclic compounds.
- Draw and identify different types of organic isomers.
- Draw and identify different organic conformers.
- Propose plausible mechanisms for organic reactions.
- Construct reaction-energy diagrams.
- Use thermodynamics and kinetics to predict the products of organic reactions.
- Differentiate stereoisomers.
- Locate asymmetric carbon atoms and other stereocenters and identify chiral structures.
- Predict the products of elimination and substitutions reactions.
- Differentiate between first and second order reactions.
- Categorize the stability of carbon intermediates.
- Demonstrate the ability to determine the correct products of reactions with alkenes, alkynes, alkyl halides or alcohols.
- Demonstrate the ability to determine reactions that can form alkenes, alkynes, alkyl halides or alcohols.
- Propose mechanisms to explain observed products in organic synthesis.
- Use retrosynthetic analysis to solve multistep synthetic problems.
- Use infrared and mass spectroscopy to analyze organic compounds.
- Use proton and carbon NMR to propose the correct structures of organic compounds.
- Identify and understand delocalized pi systems.
- Use ultraviolet and visible spectroscopy to analyze organic compounds.
- Understand aromaticity and electrophilic attacks to these systems.
- Understand carbonyl chemistry.
- Understand enolate and aldol reactions.
- Understand carboxylic acid chemistry.
- Understand amine and amide chemistry.
- Name benzene derivatives.
- Understand ester reactions.
- Understand carbohydrate chemistry.
- Understand heterocycles and their chemistry.
- Be familiar with the structures of amino acids, peptides, proteins and nucleic acids.