

# CHEMISTRY 277

## Spring 2017

**Instructor:** Dr. Daniel Stelck  
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**Office Hours:** 2:30 PM – 4:00 PM on Monday and Wednesday. You can also stop by my office at any time to see if I am available.

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

**Textbook:** Organic Chemistry, Klein

**Calculator:** An inexpensive non-text entry calculator may be needed. Be sure to label it with your name. You may need the calculator during class, on homework assignments and on exams. It should have capabilities for square roots, logarithms, exponentiation and scientific (exponential) notation operations. **Text entry calculators will not be permitted during any of the exams.**

**Model Kit:** An organic modeling kit will prove to be beneficial, especially when chirality is covered.

Chemistry 277 is the first semester of a two semester organic chemistry course. The intent of this course is to provide principles and theories of organic chemistry. 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 [saplinglearning.com](http://saplinglearning.com) and click on the **Higher Ed** option for your country at the top right.
2. Log in with your existing account or click **Create an Account**.
  - If you have a Facebook account, you can use it to quickly create a Sapling Learning account. Click Create my account through Facebook. You will be prompted to log into Facebook if you aren't already. Choose a username and password, then click Link Account.
  - Otherwise, supply the requested information and click Create My Account. Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email. If you don't get the email within 30 minutes, contact [support@saplinglearning.com](mailto:support@saplinglearning.com).
3. Look for the gray bar entitled **Enroll in a new course**.
4. Click on your subject to expand the menu.
5. 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).
6. 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. Otherwise, continue expanding the other menus until you locate the correct link and click it.
7. Enter your zip code and pay if necessary. Most courses require payment using a credit card, a PayPal account, or an **Access Card Code** (<http://www2.saplinglearning.com/help/how-do-i-enter-code-my-scratch-card>) from a scratch-off card purchased at your bookstore.

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 three exams lasting approximately 50 minutes each and a two hour comprehensive final exam. Check the table below for the examination dates. All regular exams begin at 1:30 PM. The location of your exam will be in Renfrew 111. 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 exam must be completed during the alternate exam time.

**A PHOTO ID IS REQUIRED AT ALL EXAMS.**

**Remember no text entry calculators or any other electronic devices are allowed during an exam.**

**Grading:**

Your grade in this course will be determined by your performance on the three exams and the final.

The point breakdown and exam schedule is as follows.

Exam #1	February 8 <sup>th</sup>	150 points
Exam #2	March 8 <sup>th</sup>	150 points
Exam #3	April 26 <sup>th</sup>	150 points
Final Exam	May 10 <sup>th</sup> , 12:30 – 2:30 PM	300 points
Online Homework		100 points
<b>Total</b>		<b>850 points</b>

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

<b>Total Points</b>	<b>Course Grade</b>
765-850	A
680-764	B
595-679	C
510-594	D
below 510	F

### **Supplemental Instruction:**

Supplemental Instruction is an academic support model that utilizes peer-assisted study sessions. This program provides regularly scheduled review sessions on course materials outside the classroom. The program consists of study sessions in which students compare notes, discuss readings and lecture material and develop tools for effective organization. Supplemental Instruction is a free service offered to all students and is a non-remedial approach to learning as the program targets high-risk courses rather than high-risk students. Participation is voluntary, but all students are encouraged to attend instruction sessions. Jessa Montoya is the student leader for CHEM 277 supplemental instruction. These sessions will meet at Tuesdays at 5:30, Wednesdays at 6:30 and Thursdays at 7:30 in Ren 127. Jessa's email address is [jmontoya@uidaho.edu](mailto:jmontoya@uidaho.edu).

### **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.