Course Syllabus
ORGANIC CHEMISTRY I LAB
Chemistry 2315, Section 1

Dixie State College of Utah
Spring Semester, 2009

Professor: **Sarah Morgan Black**
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When & where class meets: **Thurs, 2:00-5:00 pm (sec 1) or 5:30 - 8:30 pm (sec 2) in SCI 201**

Course description and objectives

This course is the first of two semesters of organic chemistry laboratory, and is designed to give you hands-on experience with the techniques, principles, and reactions of organic chemistry. You should be concurrently enrolled in Chem 2310 unless you have special permission from the instructor. You should have completed Chem 1225 before taking this course (concurrent enrollment in Chem 1225 and Chem 2315 may be permitted with instructor permission and if space is available).

The lab experiments have been designed to correlate with the material covered in the lecture course, and you will be expected to apply knowledge such as reactions, mechanisms, and properties of organic molecules learned in Chem 2310 to the procedures you will perform in Chem 2315. However, you will receive a grade for each course independently.

When you finish this class, you should be able to:

- Practice safe handling and proper disposal of laboratory chemicals.
- Perform necessary calculations such as stoichiometric amounts of reagents and % yields.
- Accurately and objectively record experimental procedures and data and draw appropriate conclusions from experimental results.
- Perform and explain the principles behind organic chemistry operations such as filtration, rotary evaporation, recrystallization, liquid-liquid extraction, TLC analysis, column chromatography, melting point determinations, and distillations, and obtaining IR spectra.
- Synthesize organic compounds by running a reaction, isolating, purifying, and characterizing the product(s).
- Demonstrate an understanding of the thought processes involved in organic synthesis by analyzing results from a virtual laboratory program.
- Perform chemical demonstrations suitable for an audience of elementary school children.

Disability Accommodation

If you are a student with a physical or mental impairment and would like to request accommodations, please contact the Disability Resource Center (652-7516) in Room 201 of the Student Services Center. The Disability Resource Center will determine your eligibility for services based upon complete professional documentation. If you are deemed eligible, the Disability Resource Center will further evaluate the effectiveness of your accommodation requests and will authorize reasonable accommodations that are appropriate for your disability.

Required Materials

1) Laboratory Manual for Chem 2315 and Chem 2325 by Sarah Morgan Black

2) Student Lab Notebook (with carbon tear-out pages)

3) Splash-proof goggles

The Laboratory Manual is online at http://cactus.dixie.edu/smblack/chemlabs. You will need to print out the labs and bring them to class. You should purchase a three ring binder (or something similar) in which to put the labs that you have printed out; you will need to refer back to them later. The course schedule is also located on the course website.

The Student Lab Notebook and goggles are available from the Dixie College Bookstore. The lab notebook has carbon pages which you will tear out and turn in for grading, and may also be used both semesters (unless you use up all of the pages).

To qualify as splash-proof, your goggles must fit tightly to your face and cannot have any holes (except splash-proof vents).

All other materials, including equipment and chemicals, are provided using your lab fee. On the first day of lab, you will be issued a drawer with equipment worth considerably more than your lab fee – you are responsible for the contents, and will be checked out at the end of the semester.

Safety

I take safety issues very seriously. Goggles must be worn whenever chemicals are in use by anyone in the lab. Shorts and sandals are not permitted, and skirts and dresses are discouraged. Gloves and aprons are available for your use if you desire. Long hair should be tied back, and long, loose sleeves should be avoided. Do not take **any** chemicals or equipment out of the lab. ***You are responsible to follow instructions and to use common sense and your knowledge of chemical principles to ensure the safety of yourself and those around you.***

Grading

Your grade will be based upon your preparation for lab, your completion of the experiments, your written record of the lab, and your understanding of the principles behind what you have done, as demonstrated by your lab write-up, the end-of-lab questions, and the final exam.

Before each lab, you should read the lab and any other sections of the manual as directed in the lab. You should then write an introduction in your notebook, perform any necessary calculations as directed, and answer the pre-lab questions on-line.

During the lab, you will write a lab report containing procedures that you performed and observations that you made during the experiment, as well as interpretations of these observations. This record will be used to judge whether you have completed the experiment, and your ability to properly record your procedures and observations. Even if your experiment is unsuccessful, you can still obtain full credit for performing the lab by getting my permission to join another student and performing the remaining steps together. During some experiments, you will work in teams of two; both students are required to keep and turn in a separate lab report.

At the end of the course, a final exam will be given. It will be in a written answer format, and you will be able to use your lab notebook (but not the lab manual) for reference. However, this won't be of much help if you don't understand what you have done during the semester.

Understanding what you are doing in the lab is even more important than getting correct results. If you only succeed in blindly following instructions, you will not have fulfilled the objectives for this course. I will judge your understanding by your interpretation of observations, your conclusions, the answers to the end-of-lab questions, and the final exam. The lab can be a great place to make connections between concepts taught in class and how they actually look and work in real life; take full advantage of this opportunity to apply the concepts that you have learned in lecture (and in previous courses) to get an in depth understanding of how organic chemistry works.

Labs will generally require the entire 3 hour lab period; do not expect to be able to leave early. Also, this lab is only a one-credit course; however, you will need to put in some time outside of the lab in order to earn an A or B grade. Science labs in colleges all over the US generally require more work than the amount of credit implies – get used to it! To lighten this load, exercise the discipline needed to prepare well – if you know what you're doing, you will get done faster often be able to finished your conclusion and questions while waiting for other classmates to finish.

Summary of points for the course:

Pre-lab questions	15%
Lab reports	45%
End-of-lab questions	25%
Final Exam	15%

Letter grades will be assigned using the percentage scale below.

A	93.0 –100	C+	77.0 – 79.9
A-	90.0 – 92.9	C	73.0 – 79.9
B+	87.0 – 89.9	C-	70.0 – 72.9
B	83.0 – 86.9	D	50.0 – 69.9
B-	80.0 – 82.9	F	0 – 49.9