PREREQUISITES: Chem 251, Introduction to Inorganic Chemistry, and the sophomore organic/analytical laboratory sequence are prerequisites to this course. A student that has not had Chem 251 or an equivalent course will have a very difficult time in this laboratory.

SAKAI SITE: A laboratory sakai site will be used to make announcements, present lecture notes, grading rubrics, updated experimental procedures, supplemental data, links to external resources and other useful information over the course of the semester.

LABORATORY MANUAL: The laboratory manual for Chem 550L will be available at Student Stores.

LABORATORY NOTEBOOK: You should purchase a PERMANENTLY-BOUND CARBON-COPY lab notebook (available at the bookstore). Carbon copy notebooks used in previous labs may be reused for this class. You will not be permitted to bring the lab manual to lab, so you will have to prepare in advance for your first lab (see the lab manual for detailed instructions).

ATTENDANCE: Attendance is required for both lab and class. Having an exam in another class is not a valid excuse to miss lab. Labs missed due to illness must be validated by a doctor's excuse. All make-up labs must be cleared by your instructor.

INSTRUMENT LABORATORY: You will be required to characterize the products you prepare during lab in the instrument laboratory. Your work in the instrument laboratory will take place outside of your regularly scheduled laboratory period. Sign-up sheets for instrument laboratory time will be posted at the instrument lab, next door to the synthesis laboratory. The instrument laboratory will be open on Thursday in the afternoon, as needed for specific laboratories. For each lab, you must attend instrument lab the day after the laboratory period. As for synthesis laboratory, you should come to instrument laboratory prepared. Although you will not be required to obtain data on all the compounds you prepare in laboratory, you will be expected to discuss the data you collect as well as data provided in supplemental data packets that will be available in the instrument laboratory. The instrument lab teaching assistant must initial the spectra you obtain as well as the entries that you made in your laboratory notebook during instrument lab.

NMR SPECTROSCOPY: Part of your lab time will be devoted to preparing NMR samples for your final products. NMR data on these sample will be collected by a TA assigned to the lab. You will be responsible for processing and printing your own NMR data using the program Mestrenova lite (available through your ChemDraw license).

LAB EXPERIMENTS: The laboratory experiments for Chem 550L will consist of six core experiments, and an independent project. The miniproject will provide practical experience necessary for successfully carrying out the independent projects. For the independent project experiment, you will develop a procedure and a characterization plan based on information in a literature reference. More information on the miniproject and the independent project experiments will be handed out later.

LAB WRITEUPS: The general format for the lab reports is detailed in the introductory portion of your laboratory manual. These reports are considerably different than those required for your sophomore labs. You are required to use ChemDraw to draw chemical structures for your lab report. A full write-up will not be required for every laboratory report. See the detailed syllabus for write-up requirements on particular labs.
Information is available on the homepage to help you write up the "emphasized" section of a given laboratory report. Follow the Lab Writeups link from the 550L index page. Lab reports will be due in lab in the week specified in the detailed syllabus, unless otherwise noted. You will be penalized 10% per calendar day for late lab write-ups. Only Dr. Gagne can grant extensions of the due date.

**GRADING:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Weight</th>
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<tbody>
<tr>
<td><strong>Weekly Quizzes</strong></td>
<td>A brief quiz will be given during the recitation time that will cover the lab from the previous week and the experimental aspects of the lab to be discussed that day.</td>
<td>10%</td>
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</table>
| **NMR Computer Assignment, NMR Quiz, Literature Assignment** | *NMR Computer Assignment:* To be carried out during the first two weeks of class.  
*NMR Quiz:* Covering the fundamentals of NMR spectroscopy, and assignment of NMR spectra.  
*Literature Assignment:* An exercise in searching the literature distributed the first day of class. | 10%    |
| **Cumulative Hour Exam**                     | An hour exam will be given after completion of all experiments. The exam will contain experimental and theoretical questions. | 10%    |
| **Core Experiments**                         | *Daily Grade:* Based on the skill, understanding, safety, and expediency that you show in carrying out an experiment. Plan ahead so you use your time effectively. The quality and quantity of collected products will also be used to assign grades | 20%    |
|                                               | *Laboratory Notebooks:* Your TA will collect the carbon copies pages of your lab notebook after each laboratory period | 20%    |
|                                               | *Laboratory Write-ups*                                                                               |        |
|                                               | Total for Core Experiments                                                                           | 55%    |
| **Independent Project**                      | Literature Work, Plan, In-Lab Work, Write-up, Presentation                                            | 15%    |
HONOR CODE and ACADEMIC INTEGRITY

The Department of Chemistry faculty adopted the following policy on September 9, 1977.

“Since all graded work (including homework to be collected, quizzes, papers, mid-term examinations, final examination, research proposals laboratory results and reports) may be used in the determination of academic progress, no collaboration on this work is permitted unless the instructor explicitly indicates that some specific degree of collaboration is allowed. This statement is not intended to discourage students from studying together or working together on assignments which are not to be collected.”

Behavior in this course is governed by the University of North Carolina’s Honor System and the codes contained therein. The entire code, and information pertaining to the code, can be found at:

http://studentconduct.unc.edu/

The guiding principle of academic integrity is that the work submitted by a student must be that student’s own work. In this course students will sometimes be required to work in pairs or groups to collect experimental data. This can lead to misunderstandings regarding academic integrity. In those cases when you work with other students, you must clearly indicate on your Title Page who your partner or partners were.

When writing up your lab report there is no collaborative work. You must write your own report, answer your own questions, and work up your own data. If you are having difficulties or have questions you need to see your TA for help. Collaboration on lab reports is a violation of the University Honor Code and will be treated as such.

A second area where misunderstandings of academic integrity arise is with regards to when you should reference external sources in your lab report. The submission of any material that is substantially the same as some other written document or source (i.e., a journal article, a textbook, a lab manual, a book) that is not properly referenced constitutes a violation of academic integrity. Using someone else’s words or ideas without giving credit for their work is called plagiarism. Furthermore, simply rearranging the words from a source to make them seem like your own words is also plagiarism.

The following situations below will be treated as honor code violations.

• Unauthorized collaboration. All lab reports must be written independently, unless a specific degree of collaboration is specifically specified.

• Plagiarism. The ideas presented in your report must be your own. If you present someone else’s ideas or work (from books, old lab reports, the Web, the lab manual) as your own, this is plagiarism. You can present facts from an outside source, as long as you properly reference the source. Do not rearrange a paragraph or some other piece of work that is not yours in the hope of disguising the work as your own.

• Allowing students to use your work as their own. Do not allow your partner or other students to have access to your lab reports. You may share data if you collected the data together, but everything else (calculations, graphs, tables) must be done alone.

• Using old lab reports, even if you just want to glance over them, is an honor code violation.

• Using an old lab manual from a previous semester.

Established by the Undergraduate Labs Committee
April 2014