Chemistry 111L-01
Principles of Chemistry Laboratory
Spring 2018

Instructor: Dr. Richard J. Lavrich
E-mail: lavrichr@cofc.edu
Office: SSMB 120 Lab: SSMB 149
Office Hours: Monday 10-1 Wednesday 10-11 Thursday 9-12 (or by Appointment)
Class Location/Time: SSMB 323 / Wed 12-3

Description of Course

A laboratory course designed to introduce the student to the application of the scientific method in solving chemical problems and to acquaint him or her with specific tools and techniques used in the chemistry laboratory, while reinforcing and illustrating concepts encountered in lecture.

Co-requisites and Prerequisites

Chemistry 111 is a co-requisite for Chem 111L. If you drop one of the courses, you must drop the other.

Text and Supplies (required)

Chemistry 111L Principles of Chemistry Laboratory Manual
Composition book (sewn pages) to serve as lab notebook
Lab coat
Safety glasses/goggles
Nitrile gloves

Student Learning Outcomes for Chem 111 Lab

- Develop an understanding of the scientific method in a chemistry laboratory setting
- Employ mathematical calculations to assess acquired data
- Synthesize laboratory experiments to determine the purpose, results, and conclusions of a scientific study

Student Learning Outcomes for Natural Sciences General Education Courses *

The sequence CHEM 111/112 and associated labs satisfy the 8 hour natural science requirement of the College. In this sequence:

- Students apply physical/natural principles to analyze and solve problems
- Students explain how science impacts society.

*These learning outcomes will be assessed in the second course of the year-long natural science sequence.
Class Policies

All students in Chem 111L must adhere to the policies included in the Lab Manual. These include: the School of Sciences and Mathematics Safety Policy and Procedures, the Policy on Scientific Integrity, and the Procedure for Leaving the Laboratory. Additionally, all students must adhere to the Honor Code and Code of Conduct college policies regarding academic integrity.

Safety

The safety guidelines are outlined in the manual and will be discussed at the mandatory safety training session, but there are several rules that will be of paramount importance:

1. Wear clothing that completely covers all skin below your neck. If any skin on your legs, ankles, or feet is not covered completely, you will not be allowed to work in the lab.
2. No sandals, flip flops, or other open-toed shoes.
3. Laboratory coats must be worn at all times.
4. Safety glasses/goggles must be worn at all times when chemicals are in use.
5. Gloves must be worn when handling chemicals. You will need to purchase nitrile gloves at the bookstore or a pharmacy and bring multiple pairs to lab each week.

Failure to adhere to safety rules will result in dismissal from the laboratory with a grade of zero for that laboratory period.

Attendance

Labs are experiential learning courses that emphasize the scientific method and data interpretation and they provide training in essential technical skills for chemists and other scientists. Furthermore, the technical lab skills presented in one course are assumed to be mastered in subsequent chemistry courses. Thus, attendance in all lab periods is crucial.

Attendance at your section of scheduled lab is required.

The grade of "WA" will be used for any student who misses more than two laboratory periods, whether excused or unexcused absences.

Students who miss quizzes or labs will be given a grade of "0" for the associated evaluations.

Students who miss lab for any reason are still responsible for the material and for reviewing lab protocols. If you miss a lab due to illness or a personal planned absence you will not be allowed to make up the missed lab and that score of zero will be your dropped score. A second score of zero from a second absence will not be dropped from your grade and that lab may not be made up. However, if you have a planned absence due to your official representation of the College off-campus please let your instructor know at least two weeks prior to the absence and we will work with you to provide an accommodation, provided there is space in another lab. You may not make up labs due to illness or non-official College related absences.

When your final course grade is calculated, your lowest lab report and quiz grade will be dropped.

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**Academic Integrity**

One of the core values of the College is academic integrity. This course is conducted under the Honor Code (http://www.cofc.edu/StudentAffairs/general_info/honor_system/index.html) of the College of Charleston. Students at the College are bound by honor and by their acceptance of admission to the College to abide by the Code and to report violations. Faculty members are required to report violations of the Honor Code or Code of Conduct to the Office of Student Affairs. Conviction of an Honor Code violation in this class will result in the grade of "F" for the course. Please consult the department's Policy on Scientific Integrity (http://www.cofc.edu/~chem/advising/integrity.html).

Plagiarism will not be tolerated. **You are responsible for collecting, analyzing, and writing up your own lab report.**

It will be considered academic misconduct to:

1. Falsify or use another’s data,
2. Use another’s analysis
3. Turn in any part of another’s lab report.

Both parties involved will receive a zero for the work and will be reported to the Honor Board.

**Grading Scale**

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Letter Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100</td>
<td>B-</td>
<td>80-82</td>
<td>D+</td>
<td>72</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
<td>C+</td>
<td>78-79</td>
<td>D</td>
<td>71</td>
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<tr>
<td>B+</td>
<td>87-89</td>
<td>C</td>
<td>75-77</td>
<td>D-</td>
<td>70</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
<td>C-</td>
<td>73-74</td>
<td>F</td>
<td>&lt;70</td>
</tr>
</tbody>
</table>

**Grading Scheme**

**Laboratory reports** 50%

The format for lab reports, which is discussed in the laboratory manual, needs to be followed. Each week’s lab report will consist of the following sections:

1. Typed abstract
2. Data Sheets (from the lab manual)
3. Answers to Reflection Questions
Laboratory reports will be due at the beginning of the following laboratory period.

Late lab reports will receive the following point deduction

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Deduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>(from start of lab until the end of the day)</td>
<td>20%</td>
</tr>
<tr>
<td>(second day)</td>
<td>30%</td>
</tr>
<tr>
<td>(thereafter)</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Quizzes  10%**

Pre-lab quizzes will be given before each experiment. The purpose of the quiz is to prepare you for the current lab and reinforce concepts from the previous weeks experiment.

Quizzes are given at the beginning of the class period therefore it is your responsibility to arrive in lab on time.

Note: If you come to lab without the appropriate PPE (most often exposed skin around ankles) you will need to correct it after attending the pre-lab lecture which presents safety protocols and information regarding the current experiment. In such cases you will receive a zero for that week’s quiz.

**Exams  30%**

A midterm and final exam will be administered. Each will count towards 15% of your overall grade. Details of each will be discussed in lab.

**Lab Notebook  5%**

All data collection must be done in a composition book with sewn pages. The data sheets provided in the manual are for the purpose of reporting data and should not be marked on during lab. The requirements for the lab notebook will be discussed in lab.

**Cleanup  5%**

Each student will be assigned a set of drawers in the lab that contain equipment needed for lab. You are required to clean and replace all used equipment to the appropriate drawer and be signed out by the instructor at the completion of each lab period.
SNAP (Students Needing Access Parity)

If you have a letter from the SNAP office and need academic adjustments or accommodations because of a disability, please contact me in a timely manner. If you need accommodations and do not have a SNAP letter, please contact the SNAP office (http://disabilityservices.cofc.edu/).

Schedule of Laboratory Periods

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 10th</td>
<td>Mandatory Safety Training</td>
</tr>
<tr>
<td>January 17th</td>
<td>Experiment 0</td>
</tr>
<tr>
<td>January 24th</td>
<td>Experiment 1</td>
</tr>
<tr>
<td>January 31st</td>
<td>Experiment 2</td>
</tr>
<tr>
<td>February 7th</td>
<td>Experiment 3</td>
</tr>
<tr>
<td>February 14th</td>
<td>Experiment 4</td>
</tr>
<tr>
<td>February 21st</td>
<td>Experiment 5</td>
</tr>
<tr>
<td>February 28th</td>
<td>Midterm Exam</td>
</tr>
<tr>
<td>March 7th</td>
<td>Experiment 6</td>
</tr>
<tr>
<td>March 14th</td>
<td>Midterm Grades Available</td>
</tr>
<tr>
<td>March 21st</td>
<td>Spring Break</td>
</tr>
<tr>
<td>March 28th</td>
<td>No Lab</td>
</tr>
<tr>
<td>April 4th</td>
<td>Experiment 8</td>
</tr>
<tr>
<td>April 11th</td>
<td>Experiment 9</td>
</tr>
<tr>
<td>April 18th</td>
<td>Final Exam</td>
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