105-02 Life and Health Lab

James Dorn

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CHEMISTRY 105-02 SYLLABUS
CHEMISTRY: Life and Health Lab
XAVIER UNIVERSITY

Instructor: Mr. James M. Dorn (dornj@xavier.edu)
Office: Logan Hall 104 C Phone: 745-3353
Office Hours: Mon 12:00-1:00; Thurs 9:00-9:30; Tues and Thurs 11:30-12:30 and by appointment

Course Learning Objectives: 1) To introduce the student to good laboratory techniques in the performance of chemical experiments. 2) To familiarize the student with safety procedures in the performance of chemical experiments. 3) To demonstrate the application of the scientific method by observation of physical and chemical phenomena, data recording, performing calculations, and drawing conclusions based on the laboratory experiment. 4) To increase the communication skills of the student by synthesizing written laboratory reports based on their observations, data collection and handling, and conclusions.

Class Time and Text: Thursday 9:30-11:20 am Logan 102. Experiments will be posted on Blackboard. It is the student’s responsibility to download and bring copies to class.

Special Needs: It is the responsibility of the student to inform the instructor at the beginning of the semester of any individual conditions, medical or otherwise, that may require special attention. Appropriate consideration will be given to these situations.

Attire and Lab Safety: Laboratory safety is very important. Safety glasses/goggles, long pants and fully covered feet (shoes or sneakers only) are required. Please tie back long hair. No food, drink, or gum is permitted in lab. Lab aprons are available, as are gloves.

Course Requirements:

Attendance: Students are required to perform all scheduled experiments. No student is permitted to do any experiment in the lab without supervision by a faculty member. If a student is absent, the grade for that experiment will be zero except if permission has been granted to make-up the experiment. Such permission will only be granted with proof of illness or proof of some other conflicting event (note from an appropriate university counselor). Notice of an illness or conflict must be made in person, by phone, or by email before the missed laboratory session.

Lab Reports: Each student will write a formal lab report for each experiment performed. The completed report is due at the end of the lab session when the experiment is performed. Each lab report is worth 50 points. The report consists of:

1) Cover Page Using a word processor give the title of the experiment, name of the student, course number and section, name of lab partner(s), and the date on which the experiment was performed.

2) Pre Lab Work Also using a word processor, the pre-lab consists of a statement of the purpose of the experiment and a brief description of the procedure. This will be checked by the instructor at the beginning of the lab session when the experiment is performed. The pre-lab also includes completion of the pre-lab questions found on Blackboard.

3) Laboratory Data Sheet Data taken during lab should be recorded in ink. If a mistake is made, one line should be drawn through the error and the correct information written next to it.
4) **Discussion Section** which should include conclusions that can be drawn from the experiment, possible sources of error in the experiment, and other statements, if appropriate, as to why the experiment did not yield the expected results.

5) **Exercises** from the lab manual if applicable.

**Tests:** There will be two tests in Chem 105 with each being worth 100 points.

**Grade Determination:** (Based on % of Total Possible Points)
- A = 93-100%  
- A- = 90 - 92%  
- B+ = 87-89%  
- B = 83-86%  
- B- = 80-82%  
- C+ = 77-79%  
- C = 73 -76%  
- C- = 70-72%  
- D+ = 67-69 %  
- D = 63-66%  
- D- = 60-62%  
- F = <60%

Note: According to the Xavier University Catalog, a grade of “A” is earned for “EXCEPTIONAL” performance. This is also the agreed grading policy of the faculty in the Chemistry Dept..” For more information, go to the website [http://www.xu.edu/chemistry_dept/grade_policy.htm](http://www.xu.edu/chemistry_dept/grade_policy.htm)

**Academic Honesty:** Cheating on a test will result in a grade of “F” being given for the course. Students may appeal according to normal procedures stated in the University Catalog.

**Tentative Schedule of Experiments**

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab Experiment</th>
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<tbody>
<tr>
<td>1/16/2014</td>
<td>Safety, check-in</td>
</tr>
<tr>
<td>1/23/2014</td>
<td>Nature’s Indicators</td>
</tr>
<tr>
<td>1/30/2014</td>
<td>Analysis of Commercial Antacids</td>
</tr>
<tr>
<td>2/6/2014</td>
<td>Investigation of the Hardness of Water</td>
</tr>
<tr>
<td>2/13/2014</td>
<td>Chloride in Sea Water Determination</td>
</tr>
<tr>
<td>2/20/2014</td>
<td>Plastics and Recycling</td>
</tr>
<tr>
<td>2/27/2014</td>
<td>Synthesis of Esters</td>
</tr>
<tr>
<td>3/6/2014</td>
<td><strong>Spring Break: no class</strong></td>
</tr>
<tr>
<td>3/13/2014</td>
<td><strong>First Lab Exam – first 5 labs and safety</strong></td>
</tr>
<tr>
<td>3/20/2014</td>
<td>Proteins</td>
</tr>
<tr>
<td>3/27/2014</td>
<td>DNA Fingerprinting</td>
</tr>
<tr>
<td>4/3/2014</td>
<td>Determination of Vitamin C in Beverages</td>
</tr>
<tr>
<td>4/10/2014</td>
<td>Determination of the Alcohol Content of Beverages</td>
</tr>
<tr>
<td>4/17/2014</td>
<td><strong>Easter Break: no class</strong></td>
</tr>
<tr>
<td>4/24/2014</td>
<td><strong>Second Lab Exam – last 5 labs; Check-out</strong></td>
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**THIS COURSE SATISFIES THE SCIENCE REQUIREMENT FOR THE CORE CURRICULUM AND IS APPROVED AS AN ETHICS, RELIGION, AND SOCIETY FOCUS COURSE.**