Queens College - CUNY  
Department of Chemistry and Biochemistry  
Laboratory Syllabus Spring 2016  
Chemistry 113.1 Section 4  
Introduction to Chemical Techniques

INSTRUCTOR / SECTION INFORMATION

Section Number: 4  
You must place this section number on all submitted documents.

Instructor: Dr. Ella Tracz  
Office: Remsen 210  
Office hours: TUE 11:45am-12:45 by appointment

E-mail: etracz@qc.cuny.edu or ehejna@hotmail.com (preferably)

Lab Hours: TUESDAYS; 8:40 am-11:30 pm  
Lab Room: Remsen 156

Important: A grade of C or better must be achieved in this course and CHEM 113.4 to advance to CHEM 114.4 and CHEM 114.1

LABORATORY COURSE COORDINATOR

Coordinator: Dr. Thomas Strekas  
Office: SB B-306  
Office hours: Tu/Th 11 am-12 pm, or by appointment (arrange via e-mail)  
E-mail: Thomas.Strekas@qc.cuny.edu  
Responsibilities: Oversight of quizzes, laboratory protocols, Blackboard postings, laboratory instructors, and grade assignments.

LABORATORY REQUIREMENTS AND POLICIES

Course Objectives

To provide students with the opportunity to develop core competencies in chemistry laboratory skills, as enumerated by the American Chemical Society, including:

• Safe handling of chemicals and proper disposal of waste arising from hazardous chemicals
• Maintaining a laboratory notebook and writing proper laboratory reports
• Use of basic instruments including electronic balances, pH meters, drying ovens, digital data logging devices (e.g. LabQuest Vernier)
• Understanding and using stoichiometric calculations and balanced chemical equations
• Using and reading volumetric glassware
• Preparing and diluting standard solutions
• Acquiring and analyzing data, both qualitative and quantitative, and correctly interpreting results, including correct precision, accuracy and units.

Required for Lab

• Laboratory notebook containing carbonless paper that automatically creates a duplicate copy (available in QC Bookstore). This notebook must be brought to all laboratory meetings beginning no later than week 3. Failure to do so will because for removal from lab until notebook is obtained.
• Scientific calculator (need not be graphing calculator) best is TI-30X A
• The experiment documents for the day-downloadable from the course Blackboard site (NB check the Merged CH 1131 course.)
• A blue or black pen (notebook entries may not be in pencil)
NOTE: All lab reports require submission of the ORIGINAL duplicate notebook page(s) from that day’s lab. NO COPIES are allowed.

**Attendance/Tardiness**

- **Attendance** for every laboratory section is mandatory.
- **Actually DOING the experiments and analyzing them IS the course.**
- If a lab is missed (or anticipated to be missed) due to illness or, for example, a death in the family then a **written** excuse must be provided to your laboratory instructor and the laboratory must be made up within 1 week by attending another CHEM 113.1 lab period (only with the proper permission form). Consult your instructor for details on this procedure.
- If no valid excuse is provided a 0 will be the grade for that lab period.
- Missing more than 2 lab periods will warrant possible expulsion from the course or a failing grade.
- **Tardiness** - You must be present at the scheduled time for start of lab.
- Quizzes will be given at the start of the period and no added time will be granted if you are late.
- Pre-laboratory discussions by the instructors are mandatory for conducting a safe laboratory period, and if you arrive late during or after this discussion you may be dismissed with no ‘make-up’ option at the discretion of the instructor.
- Habitual tardiness will not be tolerated and will be a basis for grade deductions.

**Withdrawal**

- Withdrawal from the lab requires withdrawal from CHEM 113.4.
- Withdrawal from CHEM 113.4 requires withdrawal from lab.

**Safety: Laboratory safety is a priority.**

All safety rules listed in the laboratory safety contract, which you sign, must be followed at all times. Penalties range from grade deductions to expulsion for the laboratory for the most serious violations.

**Assignments**

- Laboratory reports are due 7 days after the completion of the laboratory period (i.e. they are due at the next class meeting).
- Reports up to 7 days late are subject to a 20% deduction automatically. More than 7 days late a grade of 0 is assigned.

**Academic Dishonesty**

Instances of academic dishonesty will not be tolerated and will be treated in accordance with university policy. Examples of academic dishonesty include: copied lab reports; use of data obtained by others; faking data; copying from another student during quizzes, etc.

**LABORATORY COURSE GRADE**

There are three components to the laboratory course grade:

- Laboratory Safety 10%
- Quizzes 20%
- Laboratory Notebook
- Laboratory Reports 70%

Laboratory Safety 10%
At the first laboratory meeting you will be given a safety presentation and a safety examination. You must pass the safety exam with a 70% or above by the third meeting, or you may not attend laboratory that week until a pass is achieved. At the first meeting you will sign a safety contract. All policies in this contract must be followed in the laboratory at all times. Each student starts with a safety score of 100 points. Deductions may be made from this 100 points for a variety of safety violations—either individual or group—(see the safety contract) to be determined by the individual instructor or Dr. Strekas, the course coordinator.

But automatic deductions will be made for the following:

- Failure to wear safety glasses AT ANY TIME during the laboratory period (5 points each violation)
- Improper disposal of any chemicals (for example pouring chemicals into the sink) (5 points each violation)  
  [If in doubt about how to dispose of a chemical consult the instructor.]
- Food or drink brought into the lab (5 points each violation)
- Possession in the laboratory of coats, book bags, etc. not needed for lab (USE THE LOCKERS !) (5 points each violation)
- Any violation of the safety contract rules, as deemed appropriate by the laboratory instructor, may result in up to a 5 point deduction for that student.
- General Housekeeping Deduction: The state of cleanliness of the lab—especially the electronic balances—will be evaluated by the course coordinator or designee at random intervals following a laboratory period. If the state of the lab is deemed in violation of safety guidelines, EVERY STUDENT in that lab period will be given a 5 point deduction.

*If the next inspection reveals a safe lab the 5 point deduction will be lifted.*

The instructor cannot police the lab every minute. Students bear a responsibility to communicate to fellow students regarding this issue. Any action resulting in harm to a fellow student may be grounds for expulsion for the day (grade of 0) or, depending on the severity, of expulsion from the course.

**Quizzes 20%**

Quizzes will be given as often as every laboratory period, at the discretion of the instructor. Laboratory quizzes may cover the experiment from the previous week, ‘pre-lab’ questions regarding the experiment to be performed that day, and/or safety related topics which the instructor deems necessary or important.

*NOTE:* All assigned quiz grades are at the discretion of the laboratory instructor. The course coordinator will discuss a quiz grade only if there is an issue of a possible incorrect answer on the part of the instructor.

**Laboratory Notebooks**

The Laboratory Notebook is the only place where written notes, observations or data may be written during the lab period. Some notes and procedures should also be written in the notebook prior to lab as well. Because all pages are in duplicate, the relevant duplicate sheets must be handed in along with the Laboratory Report. Guidelines for properly recording in the laboratory notebook are posted on the Blackboard site and should be consulted and followed. Before leaving the laboratory for the day, you must request and obtain the instructor’s signature (or initials) on the day’s entry pages. The duplicate pages submitted with the laboratory report must show this indicator that you did this. Grade deductions may be applied if this is not done.

**Laboratory Reports 70%**

The Laboratory Report must be typed or printed. Script writing is not allowed. Standard programs such as MS Word (for the narrative and some tables) and MS Excel (for data tables and graphs) are available on most College computers and are preferred. All reports are due at the beginning of the next laboratory class meeting (usually 7 days later, but in cases of unusual scheduling consult the instructor). During the 14 week schedule, 12
experiments will be performed and each will require a written laboratory report. Guidelines for the format of the Laboratory Report will be posted on the Blackboard site.

**CHEM 113.1section 4**

**SCHEDULE OF EXPERIMENTS: SPRING 2016**

<table>
<thead>
<tr>
<th>Week #</th>
<th>Date</th>
<th>Experiment #</th>
<th>Title of Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feb 1</td>
<td></td>
<td>Check-in. Syllabus and Safety</td>
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<tr>
<td>2</td>
<td>Feb 16</td>
<td>#1:</td>
<td>Density</td>
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<tr>
<td>3</td>
<td>Feb 23</td>
<td>#2:</td>
<td>Hydrate Composition</td>
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<tr>
<td>4</td>
<td>Mar 1</td>
<td>#3:</td>
<td>Precipitation Reactions</td>
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<tr>
<td>5</td>
<td>Mar 8</td>
<td>#4:</td>
<td>Stoichiometry of Reaction of Iron with Copper(II)</td>
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<tr>
<td>6</td>
<td>Mar 15</td>
<td>#5:</td>
<td>Qualitative study of redox reactions</td>
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<tr>
<td>7</td>
<td>Mar 22</td>
<td>#6:</td>
<td>Copper Cycle</td>
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<tr>
<td>8</td>
<td>Mar 29</td>
<td>#7:</td>
<td>Gas Laws: Molar mass of a metal.</td>
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<tr>
<td>9</td>
<td>Apr 5</td>
<td>#8:</td>
<td>Dilution (NaOH and KMnO₄ dilutions)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>pH and spectrophotometry</td>
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<tr>
<td>10</td>
<td>Apr 12</td>
<td>#9:</td>
<td>NaOH prep and standardize w KHP</td>
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<td>11</td>
<td>Apr 19</td>
<td>#10:</td>
<td>KMnO₄ prep and standardize w FAS</td>
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<td>12</td>
<td>May 3</td>
<td>#11:</td>
<td>Calorimetry I and II</td>
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<td></td>
<td>Calorimeter constant and s of metal</td>
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<tr>
<td>13</td>
<td>May 10</td>
<td>#12:</td>
<td>Calorimetry: ΔH of acid-base neutralization</td>
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<tr>
<td>14</td>
<td>May 17</td>
<td></td>
<td>Check-out</td>
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