CHM 1210L  
General Chemistry Laboratory I

I. College of Science and Mathematics
   Department of Chemistry

II. Course Information
   Course Title: General Chemistry Laboratory I
   Course Abbreviation and Number: CHM 1210L
   Course Credit Hours: 2
   Course Cross Listing(s) Abbreviation and Number:
   Check (“x”) all applicable:
   General Education Course___x___ Writing Intensive Course_____ Service Learning Course_____ Laboratory Course_____ Ohio TAG (Transfer Assurance Guide) Course ____ Ohio Transfer Module Course_ x__ Others (specify)_____

III. Course Registration
   Prerequisites: High School Chemistry or CHM 1010
                 Undergraduate level MTH 1260 (minimum grade of D) or WSU Math Placement 04.
   Corequisites: CHM 1210
   Restrictions: Other:

IV. Student Learning Outcomes
   Students must be proficient in all of the following core competencies:
   1. Significant figures
   2. Fundamental structures of atoms and molecules: introduction to quantum mechanics, atomic orbitals
   3. Principles of ionic, covalent and metallic bonding; including Lewis structures, valence bond and molecular orbital theories of bonding
   4. Mole concept, stoichiometry, and the laws of composition
   5. Acids and bases, oxidation-reduction chemistry, and solutions
   6. Thermochemistry
   7. Classification of elements, including periodicity
   8. Students should have been exposed to a variety of applications of chemistry in society
   9. Students must have developed sufficiently strong analytical and interpretative skills to effectively apply algebraic methods to solve problems
   10. In a general chemistry laboratory, the student should have been exposed to a broad range of chemical laboratory experiences which build on topics covered in the corresponding lecture course, and which develop (1) analytical and preparative skills (2) the ability to effectively collect, analyze and report data. Students should understand safe laboratory practice.

CHM 1210L is a Natural Science course for the Core Element program. Learning outcomes are:
   - Understand the nature of scientific inquiry
• Critically apply knowledge of scientific theory and methods of inquiry to evaluate information from a variety of sources
• Distinguish between science and technology and recognize their roles in society
• Demonstrate an awareness of theoretical, practical, creative and cultural dimensions of scientific inquiry
• Discuss fundamental theories underlying modern science

V. Suggested Course Materials (required and recommended)

VI. Suggested Method of Instruction
Laboratory with recitation period.

VII. Suggested Evaluation and Policy
Laboratory experiments and reports, quizzes, and attendance policies - may vary with instructor

VIII. Suggested Grading Policy
A (≥90%), B(≥80%), C(≥70%), D(≥60%) – may vary with instructor

IX. Suggested Assignments and Course Outline
Most of the laboratory experiments support the lecture topics in CHM 1210. Laboratory experiments will not be conducted in weeks containing holidays, and some instructors may omit laboratory meetings in the first week of classes. Accordingly the 14-week semester may provide opportunities for ten to thirteen laboratory experiments chosen from the following list. Some instructors may choose different experiments than represented in this example syllabus.

<table>
<thead>
<tr>
<th>#</th>
<th>Experiment number &amp; title in Grossie &amp;Underwood text</th>
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<tbody>
<tr>
<td>1</td>
<td>#22- Mass Measurements and Density</td>
<td>125</td>
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<td>2</td>
<td>#28-Paper chromatography (of amino acids)</td>
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<td>3</td>
<td>#2-Analysis of Hydrated Copper Sulfate (two weeks experiment)</td>
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<td>4</td>
<td>#2-Analysis of Hydrated Copper Sulfate</td>
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<td>5</td>
<td>#45-Types of Reactions</td>
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<td>6</td>
<td>#27-Oxidation-Reduction Reactions</td>
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<td>7</td>
<td>#39-Spectroscopy and Atomic Spectra</td>
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<td>8</td>
<td>#24-Molecular Models: Inorganic Compounds</td>
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<td>9</td>
<td>#25-Molecular Models: Organic Compounds</td>
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<td>10</td>
<td>#41-Synthesis of Organic Compounds: Aspirin</td>
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<td>11</td>
<td>#42-Synthetic Polymers</td>
<td>273</td>
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X. Other Information

This is a sample course syllabus guideline. Course materials, method of instruction, evaluation and policy, grading policy, assignments, and other course matters can differ by specific course sections and individual professors. Additional information can be obtained by contacting the Department of Chemistry.

Approved:
Undergraduate Curriculum and Academic Policy Committee ________________________
Faculty Senate ____________________________________________________________