1. **Catalog Description of the Course.** [Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]

**CHEM 105. INTRODUCTION TO CHEMISTRY (3)**

Three hours of lecture per week.

Prerequisite: A passing score on the ELM Examination.

Introduces the basic principles and concepts in Chemistry. Topics covered include: measurements, units and unit conversion, scientific notation, stoichiometry, atomic structure, the concept of the mole, types of compounds, and problem solving.

GenEd: B1

2. **Mode of Instruction.**

<table>
<thead>
<tr>
<th>Units</th>
<th>Hours per Unit</th>
<th>Benchmark Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Seminar</td>
<td></td>
<td></td>
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<tr>
<td>Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td></td>
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</tbody>
</table>

3. **Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) [Use as much space as necessary]

This course is the first semester of a two semester sequence that is generally an admission requirement for medical, veterinary, dental, or pharmacy schools. In combination with CHEM 312, CHEM 314, CHEM 315, and CHEM 400, or CHEM 312 and CHEM 318, this course completes the chemistry requirements for the Biology major.

Students who successfully complete this course will be able to:

- Describe the scientific method and how it is used to approach chemical problems
- Discuss the history of chemistry
- Explain the differences between elements, chemical compounds, ions, salts, and mixtures
- Calculate moles of species, determine limiting reagents, and calculate the yield of a reaction product
- Define acids, bases, pH, and hydrogen-ion concentration
- Discuss how and why acid-base reactions occur
- Explain how and why oxidation-reduction reactions occur
- Determine the energy change in a reaction
- Explain modern atomic theory and molecular structure

4. **Is this a General Education Course?**

If Yes, indicate GE category:

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (English Language, Communication, Critical Thinking)</td>
<td></td>
</tr>
<tr>
<td>B (Mathematics &amp; Sciences)</td>
<td>X</td>
</tr>
<tr>
<td>C (Fine Arts, Literature, Languages &amp; Cultures)</td>
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<tr>
<td>D (Social Perspectives)</td>
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</tr>
<tr>
<td>E (Human Psychological and Physiological Perspectives)</td>
<td></td>
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</tbody>
</table>

NEWCRSFR 9/30/02
5. **Course Content in Outline Form.** [Be as brief as possible, but use as much space as necessary]

   Units and Unit Conversion  
   Basic Math Skills for Chemists  
   Structure of Matter  
   The Units of Chemical Measurements  
   The Elements  
   Chemical Compounds and Mixtures  
   Chemical Reactions: An Introduction  
   Acid-Base Chemistry  
   Oxidation-Reduction Chemistry  
   Ionic Compounds  
   Energy and Chemical Reactions  
   Chemical Calculations  
   Chemical Formulas  
   Chemical Equations  
   Atomic Theory  
   Molecular Structure  
   Equilibria

6. **References.** [Provide 3 - 5 references on which this course is based and/or support it.]


7. **List Faculty Qualified to Teach This Course.**

   Dr. Philip Hampton, Dr. Simone Aloisio

8. **Frequency.**
   a. Projected semesters to be offered: Fall  _X_  Spring  _____  Summer  _____

9. **New Resources Required.**

   None.

10. **Consultation.**

    Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

   ———Philip Hampton 1/8/03

   Proposer of Course Date

NEWCRSFR 9/30/02