I. **Course Title**
   
   General Chemistry

II. **Course Prefix/Number**
   
   CHEM 131

III. **Credit Hours**
   
   4

IV. **Prerequisites**
   
   Mathematics section score of 19 or higher on the ACT, OR mathematics section score of 440 or higher on the SAT, OR a score of 85 or higher on the ACCUPLACER mathematics exam, OR completion of Math 099, minimum grade, S.

V. **Catalog Description**
   
   A study of the principles and applications of chemistry suitable for science majors who plan additional course work in biology, chemistry, geology, physics, or mathematics. Organic chemistry is briefly included. Four lectures per week.

VI. **Curricular Relationships**
   
   Required for all BA and BS degrees in chemistry; for BS degrees in Biology (Cellular and Molecular Biology and Organismal Biology emphases), for BA and BS degrees in geology; and for most pre-professional programs in health sciences and pre-engineering. May be used for BA degrees in Biology.

VII. **Student Learning Outcomes**
   
   - Students will demonstrate an ability to solve problems, think critically, and draw analogies.
   - Students will demonstrate an ability to write effectively, particularly with respect to technical subjects.
   - Students will be able to describe the importance of chemistry in the everyday lives of people and societies.
   - Students will be able to recount a historical perspective of the development of chemistry as a science.
   - Students will demonstrate an understanding of the basic topics of general chemistry that students will need for success and understanding in additional coursework that has some grounding in chemistry or biochemistry (see content outline).
   - Students will be able to work effectively as members of groups.
VIII. Content Outline

- Water, Phases of Matter, Structure and Polarity, and Intermolecular Forces
- Aqueous Solutions and Solubility, Reactions and Stoichiometry
- The Nuclear Atom and Nuclear Reactions
- Atomic Structure
- Molecular Structure

IX. Course Procedures/Policies/Grading Scale

- Students are expected to attend all lecture sessions. Bluebook quizzes are given randomly at the rate of about two a week. Homework is assigned and graded. Typically, four or five hour exams and a comprehensive final exam (standardized ACS examination in general chemistry) are given for this course.
- Normal grading is used for this course.
  Grading Scale:  >90 = A; 80-89 = B; 70-79 = C; 60-69 = D; <60 = F

X. Required/Recommended Readings

The typical text used for this course is Chemistry, A Project of the American Chemical Society, written by a committee of the ACS.

XI. Issues Unique to this Course

Co-Requisite: CHEM 131L, except for students who have successfully completed CHEM 131L in a previous semester.

XII. Additional Departmental Issues

None