I. **Course Title**  
Glassblowing

II. **Course Prefix/Number**  
CHEM 216

III. **Credit Hours**  
1

IV. **Prerequisites**  
CHEM 111 or CHEM 131

V. **Catalog Description**  
Demonstrations and practice in the fundamental operations involved in the construction of glass laboratory apparatus including cutting, drawing, bending, flanging, annealing, joining and modifying glass; also includes introduction to artistic glassworking. Offered on an irregular basis, usually in the spring semester.

VI. **Curricular Relationships**  
None. The course teaches a skill useful to many chemistry majors.

VII. **Student Learning Outcomes**

- Students will demonstrate an ability to manipulate glass rod and to construct small art objects from glass rod.
- Students will demonstrate an ability to manipulate glass tubing and to construct and repair simple laboratory apparatus from glass tubing.
- Students will be able to list and describe the different types and properties of glass.
- Students will be able to identify and describe the uses of tools used in glassblowing.
- Students will practice and apply the coordination and hand movement needed for successful glassblowing.
• Students will demonstrate the patience and perseverance required to perfect the skill of glassblowing.

VIII. Content Outline

• Cutting of rod and tubing including use of the glass saw.
• Joining of rod and tubing.
• Bending of rod and tubing.
• Drawing and tooling of glass to various shapes.
• Construction of small art objects from rod such as a flower, bird, dog, decorative hand pump, and bird's nest.
• Construction of glass apparatus including round bottom seal, straight seals, "T" seals, through seals and a cold trap or bubbler.
• Safety and first aid for cuts and burns.
• Properties and uses of various types of glass.
• History of the use of glass.

IX. Course Procedures/Policies/Grading Scale

• Students meet once every other week for lecture and demonstration and then are given an assignment to complete. The course grade is 80% based on the assignments and 20% on a final which includes both a written component and an object to construct that incorporates several of the skills learned.
• 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

None

XI. Issues Unique to this Course

Students are required to buy their own rod; the department furnishes the tubing. The course is offered on an irregular basis and to a limited number of students due to a lack of equipment and space to work as well as available time in the curriculum. Students must schedule additional times to do the work outside of scheduled demonstration times.

XII. Additional Departmental Issues

None