Students in this course assist in the teaching of chemistry lab or lecture sections. To be eligible for this course a student must have successfully completed the class in which they plan to assist. Students assist instructors by some combination of the following: monitoring lab safety, clarifying lab skills and techniques, explaining experiments, engaging in active-learning lecture classrooms by guiding course topic discussions, or answering questions about lecture content. Students will prepare and present one or more oral or written presentations of lab or lecture topics. Instructor's permission required.
1. Explain the scientific method and the core concepts and methods in the chemical sciences.
2. Apply critical thinking and analytical skills to correctly interpret data.
3. Practice and monitor adherence to all lab safety rules.
4. Explain scientific techniques, experiments, and exercises.
5. Formulate and evaluate chemistry related questions.

**COURSE OBJECTIVES:**
1. Practice and monitor adherence to all lab safety rules, if applicable.
2. Write and critique quiz questions and/or lab questions.
3. Demonstrate the ability to explain scientific concepts, techniques, experiments, and/or exercises.
4. Exemplify successful laboratory demeanor, study skills, and/or professional decorum.
5. Lead study and review groups.
6. Answer lecture questions or guide students in active-learning activities.

**COURSE CONTENT:**

**LECTURE CONTENT:**
See Lab Content

**LABORATORY CONTENT:**

A. Overview of Chemistry Topics Required to Assist with Assigned Course
   1. General, Organic, and/or Introductory Biochemistry

B. Monitoring Laboratory Safety and Demeanor
   1. Familiarity with common lab equipment
   2. Familiarity with common chemical materials
   3. Monitoring disposal procedures
   4. Modeling and monitoring for protective clothing/safety gear
   5. Enforcing adherence to safety rules and regulations
   6. Assisting with maintenance of equipment and materials
   7. Modeling and monitoring adherence to attendance/tardy rules
   8. Respond to challenges by students in the lab; troubleshooting lab experiments

C. Assessment and Evaluation Techniques
   1. Coming up with quiz, discussion, and/or lab practical questions
   2. Assisting with directed study

D. Assisting Students with Implementation of the Scientific Method
   1. Hypothesis development
   2. Experimental design
   3. Data collection
   4. Data analysis
   5. Control groups
   6. Troubleshooting

E. Learning Facilitation
   1. Facilitating active learning techniques
   2. Facilitating small group discussions
   3. Responding to student questions
   4. Facilitating respectful interactions between instructors, course assistants, and students
   5. Knowing when to seek supervisory help or advise
**METHODS OF INSTRUCTION:**

A. Lab:
B. Other simultaneous interactive: Regular one-on-one meetings between the course instructor and the student assistant
C. Independent Study:

**INSTRUCTIONAL TECHNIQUES:**

**COURSE ASSIGNMENTS:**

Reading Assignments

Websites, texts, lab manuals, and handouts

Out-of-class Assignments

Preparing presentation content and quiz questions

Writing Assignments

Possible activities include: oral and/or written presentations on lecture or lab topics and contribution of questions for quizzes and labs.

**METHODS OF STUDENT EVALUATION:**

Written Assignments

Report

Problem Solving Exercises

Oral Presentations

Skills Demonstration

Demonstration of Critical Thinking:

Critical listening to instructor presentations in order to develop appropriate quiz and lab questions. Ability to answer student questions about lab exercises, techniques and concepts presented by the instructor; identify student needs (academic and instructional) and communicate those needs to the instructor; observe and evaluate adherence to lab safety rules; and identify, correct, and report inappropriate laboratory behavior.

Required Writing, Problem Solving, Skills Demonstration:

Possible activities could include: oral and/or written presentations on a topic not covered in lecture and contribution of potential questions for quizzes and lab assignments.

**TEXTS, READINGS, AND RESOURCES:**

**TextBooks:**


**Manuals:**

1. GWC Chemistry Faculty. [CHEM 110 Workbook](#). GWC Bookstore, 01-29-2018
2. GWC Chemistry Faculty. [CHEM 130 Lab Manual](#). GWC Bookstore, 01-29-2018
3. Grimes, C.. [CHEM 180 Lab Manual](#). GWC Bookstore, 01-29-2018
4. GWC Chemistry Faculty. [CHEM 185 Lab Manual](#). GWC Bookstore, 01-29-2018
5. Speakman, T.J.. [CHEM 220 Lab Manual](#). GWC Bookstore, 01-29-2018
6. Speakman, T.J.. [CHEM 225 Lab Manual](#). GWC Bookstore, 01-29-2018

**LIBRARY:**

Adequate library resources include: