

**SEWARD COUNTY COMMUNITY COLLEGE
COURSE SYLLABUS**

I. TITLE OF COURSE: CH1205- Introduction to Chemistry

**II. COURSE DESCRIPTION: 5 credit hours
3 credit hours of lecture and 2 credit hours of lab per week.**

This course is designed for the student without a chemistry background. It includes: chemical symbols and formulas, atomic theory, equation writing and balancing, chemical nomenclature, calculations involving chemical formula, heats of reactions, the chemistry of solutions; acids, bases, and salts, and a brief introduction to organic chemistry, physical chemistry, analytical and biochemistry. Restrictions: Not open to chemistry majors.

EduKan course number: CH176

For each unit of credit, a minimum of three hours per week with one of the hours for class and two hours for studying/preparation outside of class is expected.

Pre-requisite: Student must have writing level of English Composition I.

III. PROGRAM AND/OR DEPARTMENT MISSION STATEMENT:

The Science Program at SCCC provides opportunities to improve and enhance each student's understanding and comprehension of the natural world through a variety of courses and experience to develop a scientifically literate citizen.

IV. TEXTBOOK AND MATERIALS:

Burdge, J. & M. Driessen, Introductory Chemistry, McGraw Hill.

V. SCCC OUTCOMES

Students who successfully complete this course will demonstrate the ability to do the following SCCC Outcomes.

- 1: Read with comprehension, be critical of what they read, and apply knowledge gained to real life
- 2: Communicate ideas clearly and proficiently in writing, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.

- 5: Demonstrate the ability to think critically by gathering facts, generating insights, analyzing data, and evaluating information
- 6: Exhibit skills in information and technological literacy

VI. COURSE OUTCOMES:

1. Develop a basic understanding of chemistry.
2. Solve basic chemistry problems through stoichiometric methods.
3. Get a good grasp of the basic assumptions, theories, and laws that pertain to beginning chemistry.
4. Develop laboratory techniques by performing their assigned experiments and through report writing.
5. Learn the importance and application of chemistry in life sciences and medicine.
6. Be able to apply the scientific method to problems both in and out of the classroom.
7. Explain the reasoning and analyze the experiments that led to the adoption of the modern atomic theory.

8. Be able to perform basic unit conversions.
9. Relate atomic mass to composition in terms of the composition of subatomic particles.
10. Be able to determine empirical and molecular formula from appropriate data.
11. Recognize varying types of reactions and write a balanced chemical equation for the reaction.
12. Perform stoichiometric calculations.
13. Analyze chemical reactions and predict possible products between two or more reactants.
14. Name chemical compounds and ions.
15. Apply the gas laws to general problems.
16. Be able to distinguish between ionic and covalent bonding.
17. Have an understanding of chemical states and transitions between them.
18. Have a basic understanding of acids and bases.
19. Have an appreciation for the effect chemistry has on societies around the world.

VII. COURSE OUTLINE:

1. Chemistry is Everywhere
2. Matter and Energy
3. Fundamental Measurements
4. Elements and Atoms
5. Atomic Structure and the Periodic Table
6. Names, Formulas, and Uses of Inorganic Compounds
7. Periodic Properties of Elements
8. Chemical Bonds. Chemical Quantities
9. Chemical Reactions
10. Stoichiometry: Calculations Based on Chemical Equations
11. Gases
12. Liquids and Solids
13. Solutions
14. Acids and Bases
15. Organic Chemistry
16. Biochemistry

VIII. INSTRUCTIONAL METHODS:

1. Lecture - discussion
2. Help sessions for formula writing, problem solving and exercises
3. Laboratory experiments and recitation sessions
4. Report writing and laboratory exercises
5. Problem solving assignments
6. Use of chemistry software, and video viewing
7. Experimental demonstrations related to subject

IX. INSTRUCTIONAL AND RESOURCE MATERIALS:

1. Whiteboard
2. Text, handouts, and laboratory experiments
3. Chemicals and equipments
4. Computer programs and video cassettes
5. Library materials
6. Instructors help sessions

X. METHODS OF ASSESSMENT:

Methods of assessing the general course outcomes and the specific course competencies include a two-hour examination, laboratory reports and data sheets, short quizzes, homework assignments, class attendance & participation, a final comprehensive exam, and a final laboratory exam.

1. SCCC Outcome #1 will be assessed and measured by class participation, homework, and lab reports.
2. SCCC Outcome #2 will be assessed and measured by class exams, homework, and lab reports.
3. SCCC Outcome #3 will be assessed and measured by class exams, homework, and lab reports.
4. SCCC Outcome #4 will be assessed and measured by the student score on course exams and lab reports.
5. SCCC Outcome #5 will be assessed and measured by class exams, homework, and lab reports.

XI. ADA STATEMENT:

Under the Americans with Disabilities Act, Seward County Community College will make reasonable accommodations for students with documented disabilities. If you need support or assistance because of a disability, you may be eligible for academic accommodations. Students should identify themselves to the Dean of Students at 620-417-1106 or going to the Student Success Center in the Hobble Academic building, room 149 A.

Syllabus Reviewed: 10/28/2021