SOUTHEAST COMMUNITY COLLEGE
ARTS AND SCIENCES DIVISION
Sciences
Revision Date: 07-01-26

I. CATALOG DESCRIPTION

Course Number:	CHEM1052
Course Title:	Chemistry and the Citizen Lab
Prerequisite(s)/Corequisite:	CHEM1051 Chemistry and the Citizen Lecture
Catalog Description:	Designed for the non-science major. Survey of principles of chemistry, stressing concepts and qualitative understanding along with problem solving and technical skills. This course not only introduces inorganic chemistry but also includes an introduction to organic chemistry and biochemistry. Lecture must be taken previously (with a grade of C or higher) or taken concurrently.
Credit Hours:	1.0
Class Hours:	0
Lab Hours:	30
Total Contact Hours:	30

II. COURSE OBJECTIVES: *Course will:*

A. Show students the relationships between measurements, units, and prefixes in the metric system.
B. Demonstrate the factor label method of problem solving.
C. Discuss the periodic table.
D. Discuss how to determine charges for ionic compounds.
E. Discuss how to determine formulas for covalent compounds.
F. Discuss atomic number, atomic mass, mass number and isotopes of elements.
G. Demonstrate how to calculate moles, molar mass.
H. Demonstrate mole relationships in chemical equations.
I. Demonstrate how to solve for mass calculations in reactions.
J. Discuss solution properties and concentration of solutions
K. Discuss acid and bases, the pH scale and reactions of acids and bases.
L. Discuss the concept of buffer solutions
M. Discuss organic chemistry: Alkanes, Alkenes and Alkynes and the proper nomenclature and reactions.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. Student Learning Outcomes**:** *Student will be able to:*
1. Apply the dimensional analysis method to unit conversions, mass relationships in chemical formulas and chemical equations, concentrations, and gas law calculations.
2. Apply the metric system while taking experimental data.
3. Show relationships for elements based on their location in the periodic table and their locations with respect to other elements.
4. Write chemical formulae for molecular and ionic compounds based on the elements' locations in the periodic table.

B. General Education Learning Outcomes
1. GELO #3: Critical Thinking & Problem Solving
Outcome: Collect, identify, interpret and analyze data.
Outcome: Synthesize information to arrive at reasoned solutions to problems.
Outcome: Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.

2. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome: Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situations.
Outcome: Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve the problems.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information)*

A. Safety
B. Measurement
C. Laboratory Techniques
D. Properties of Matter
E. Stoichiometry
F. Solutions
G. Titrations
H. Gases
I. Acids & Bases (pH)
J. Organic Nomenclature and Reactions

V. INSTRUCTIONAL MATERIALS

A. Required Text(s):
1. To be determined by instructor.
B. Other Resources:
1. Safety glasses.

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:
1. Lecture
2. Group work
3. Lab work
4. Online supplementary materials
5. Demonstrations

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:
1. Exams/Quizzes
2. Lab Work
3. Demonstrations
B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

A. A minimum grade of "C" or better is required to qualify for transfer to a four-year college.