

**CHEM 3AL Course Outline as of Fall 2020****CATALOG INFORMATION**

Dept and Nbr: CHEM 3AL Title: GENERAL CHEMISTRY 1: LAB  
 Full Title: General Chemistry Part 1: Lab  
 Last Reviewed: 8/26/2024

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	2.00	Lab Scheduled	3.00	6	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00

Total Student Learning Hours: 105.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

General principles of chemistry, including atomic theory, bonding, stoichiometry, kinetic molecular theory of gases, properties of mixtures, the periodic table, and thermochemistry. Emphasis will be placed on laboratory experiments that illustrate the fundamental principles and laws of chemical behavior and the properties of matter. Lab portion of the first semester of a one-year program of general chemistry.

**Prerequisites/Corequisites:**

Course Completion or Current Enrollment in CHEM 3A

**Recommended Preparation:**

Course Completion of ENGL 1A

**Limits on Enrollment:****Schedule of Classes Information:**

Description: General principles of chemistry, including atomic theory, bonding, stoichiometry, kinetic molecular theory of gases, properties of mixtures, the periodic table, and thermochemistry. Emphasis will be placed on laboratory experiments that illustrate the fundamental principles and laws of chemical behavior and the properties of matter. Lab portion



- II. Molecular Shapes
- III. Synthesis of a Compound
- IV. Behavior of Chemical Substances
- V. Solutions
- VI. Thermochemistry
- VII. Gas Laws
- VIII. Skills
  - A. Fundamental lab skills
  - B. Error analysis, safety, use of significant Figures, Use of proper glassware, use of a lab notebook
  - C. Computational skills (including graphing and preparation of calibration curve)
  - D. Instrumentation

All topics are covered in the lecture and lab portions of the course.

### Assignment:

Lecture-Related Assignments:

1. Lab reports (approximately 1 per week)

Lab-Related Assignments:

1. Lab experiments with data analysis (approximately 1 per week)
2. Lab practicals (0-2 per semester)
3. Midterm lab exams (0-2 per semester), lab quizzes (0-4 per semester), final lab exam (0-1 per semester)

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Lab reports	Writing 25 - 75%
-------------	---------------------

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Lab experiments with data analysis	Problem solving 25 - 75%
------------------------------------	-----------------------------

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Lab practicals	Skill Demonstrations 0 - 25%
----------------	---------------------------------

**Exams:** All forms of formal testing, other than skill performance exams.

Midterm lab exams, lab quizzes, final lab exam	Exams 0 - 25%
--	------------------

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

**Representative Textbooks and Materials:**

Instructor prepared materials

Laboratory Experiments for Chemistry: The Central Science. 13th ed. Brown, Theodore and Nelson, John and Kemp, Kenneth. Pearson. 2015 (classic)

Laboratory Manual for Chemistry: A Molecular Approach. 4th ed. Tro, Nivaldo and Vincent, John and Livingston, Erica. Pearson. 2017