

CHEM 303 Course Outline as of Fall 2020**CATALOG INFORMATION**

Dept and Nbr: CHEM 303 Title: CHEMICAL CALCS-3A

Full Title: Chemical Calculations for Chem 3A

Last Reviewed: 2/3/2020

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	0.50	Lecture Scheduled	0	17.5	Lecture Scheduled	0
Minimum	0.50	Lab Scheduled	1.50	6	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	1.50		Contact Total	26.25
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 0.00

Total Student Learning Hours: 26.25

Title 5 Category: AA Degree Non-Applicable

Grading: P/NP Only

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

Also Listed As:

Formerly: CHEM 301A

Catalog Description:

Designed to assist students in successfully completing Chemistry 3A. Emphasizes the development of basic skills to increase the performance level and confidence of the student. Includes math review, development of chemical vocabulary, enhancement of computational skills, study habits, test-taking skills, report writing, graphing, and statistical analysis of data.

Prerequisites/Corequisites:

Concurrent Enrollment in CHEM 3A

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

Description: Designed to assist students in successfully completing Chemistry 3A. Emphasizes the development of basic skills to increase the performance level and confidence of the student. Includes math review, development of chemical vocabulary, enhancement of computational skills, study habits, test-taking skills, report writing, graphing, and statistical analysis of data. (P/NP Only)

Prerequisites/Corequisites: Concurrent Enrollment in CHEM 3A

Recommended:

Limits on Enrollment:

Transfer Credit:

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

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:
IGETC:	Transfer Area	Effective:	Inactive:
CSU Transfer:		Effective:	Inactive:
UC Transfer:		Effective:	Inactive:

CID:

Certificate/Major Applicable:

Not Certificate/Major Applicable

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

1. Use and apply computer software and online resources to solve problems related to CHEM 3A
2. Demonstrate increased skill and knowledge in material related to CHEM 3A
3. Apply study skills to learning chemical concepts

Objectives:

At the conclusion of this course, the student should be able to:

1. Describe chemical phenomena both conceptually and quantitatively
2. Demonstrate an expanded chemical vocabulary
3. Be able to read a laboratory procedure and synthesize the information into a set of experimental tasks
4. Be able to prepare graphs of laboratory data and draw conclusions from the graphs
5. Perform multi-step chemical calculations in an organized manner
6. Describe experimental results and draw conclusions from the data following scientific writing principles

Topics and Scope:

- I. Study Skills
- II. Review and Enhancement of Math Skills
- III. Review of Introductory Chemistry
- IV. Chemical Laboratory Theory
- V. Data Analysis of Laboratory Data
- VI. Science Writing and Writing Effective Laboratory Reports
- VII. Basic Tools and Problem Solving
- VIII. Stoichiometry

- IX. Atomic Theory
- X. Structure of the Atom
- XI. Thermochemistry
- XII. Periodic trends
- XIII. Kinetic Molecular Theory of Gases
- XIV. Intermolecular Forces (IMF)
- XV. Liquids and Solids
- XVI. Colligative Properties

Assignment:

1. Collaborative-learning worksheets
2. Sample laboratory report(s) (0-17)
3. Quiz(zes) (0-17)

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.

Sample laboratory reports, worksheets

Writing 0 - 10%

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

Worksheets

Problem solving 10 - 90%

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

None

Skill Demonstrations 0 - 0%

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

Quizzes

Exams 0 - 10%

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

Attendance and participation

Other Category 10 - 90%

Representative Textbooks and Materials:

Chemistry: The Molecular Nature of Matter and Change. 8th ed. Silberberg, Martin and Amateis, Patricia. McGraw-Hill. 2018

Chemistry. 13th ed. Chang, Raymond and Overby, Jason. McGraw-Hill. 2018

Chemistry: The Science in Context. 5th ed. Gilbert, Thomas and Kirss, Rein and Foster, Natalie. Norton. 2017

Chemistry: A Molecular Approach. 5th ed. Tro, Nivaldo. Prentice Hall. 2019

General Chemistry. 4th ed. McQuarrie, Donald and Rock, Peter and Gallogly, Ethan. University Science Books. 2010 (classic)