

CHEM 1B Course Outline as of Spring 2010**CATALOG INFORMATION**

Dept and Nbr: CHEM 1B Title: GENERAL CHEMISTRY
 Full Title: General Chemistry
 Last Reviewed: 5/13/2019

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	5.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	5.00	Lab Scheduled	6.00	17.5	Lab Scheduled	105.00
		Contact DHR	0		Contact DHR	0
		Contact Total	9.00		Contact Total	157.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 262.50

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:

A continuation of Chemistry 1A. Topics include chemical kinetics, thermodynamics, chemical equilibrium, nuclear chemistry, electrochemistry, coordination compounds and bonding, and selective topics in descriptive chemistry. Laboratory emphasizes methods of analytical chemistry and quantitative work.

Prerequisites/Corequisites:

Chemistry 1A or equivalent with a grade of "C" or better.

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

Description: A continuation of Chemistry 1A. Topics include chemical kinetics, thermodynamics, chemical equilibrium, nuclear chemistry, electrochemistry, coordination compounds and bonding, and selective topics in descriptive chemistry. Laboratory emphasizes methods of analytical chemistry and quantitative work. (Grade Only)

Prerequisites/Corequisites: Chemistry 1A or equivalent with a grade of "C" or better.

1. Properties of mixtures
2. Chemical kinetics
3. Nuclear chemistry and radioactivity
4. Advanced topics in chemical bonding
5. Thermodynamics and chemical equilibrium
6. Electrochemistry
7. Descriptive chemistry
8. Introduction to organic chemistry
9. Transition metal complexes

Laboratory Material

1. Volumetric analysis
2. Gravimetric analysis
3. Chemical Kinetics
4. Chemical Synthesis
5. Electrochemistry
6. Spectrophotometric analysis
7. Chromatography separation
8. Use of computer interfaces and software for data collection and analysis

Assignment:

1. Specific reading and study assignments from the lecture textbook (10-30 pages per week)
2. Completion of recommended end-of-chapter problems (averaging 15-20 per week)
3. Laboratory experiments and accompanying reports (10-20)
4. Completing the required pre-laboratory assignments (10-20)
5. Reviewing a published paper related to an analytical technique studied in class
6. Midterm exams (3-4), quizzes (0-4), and final exam

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.

Written homework, lab reports, published paper review, pre-laboratory assignment

Writing
10 - 25%

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

Homework problems, lab reports, pre-laboratory assignment

Problem solving
20 - 45%

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

Lab skill technique and accuracy and precision of lab results

Skill Demonstrations
5 - 15%

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

Multiple choice, completion, problem solving, short essay

Exams
40 - 60%

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

Improvement demonstrated on final exam

Other Category
0 - 5%

Representative Textbooks and Materials:

Chemistry: The Central Science by Brown, LeMay, Bursten; Prentice Hall, 2009

Chemistry: The Molecular Nature of Matter and Change by Silberberg, McGraw Hill, 2009

Principles of Modern Chemistry by Oxtoby, Gillis, Nachtrieb, Cengage, 2008

General Chemistry: Atoms First by McMurry, Fay, Prentice Hall, 2009

Chemistry: The Science in Context by Gilbert, Kirss, Foster, Davies, W.W. Norton, 2008

Chemistry and Chemical Reactivity by Kotz, Treichel, Weaver, Cengage 2010

Lab Manuals

Instructor prepared materials

Laboratory Experiments for Chemistry: The Central Science , by Nelson and Kemp, Prentice Hall, Current edition

Experiments in General Chemistry by Greco, Rickard, Weiss, Prentice Hall, Current edition