

COURSE OUTLINE

Revision: Joan Stover, February 2008

DEPARTMENT:	Academic Programs
CURRICULUM:	The Natural World
COURSE TITLE:	General Chemistry with Lab II
COURSE NUMBER:	CHEM& 162
TYPE OF COURSE:	Academic Transfer
Special Requirement Met:	Mathematics/Quantitative Reasoning
AREA(S) OF KNOWLEDGE:	The Physical Universe
COURSE LENGTH:	1 quarter
CREDIT HOURS:	6
LECTURE HOURS:	44
LAB HOURS:	44
CLASS SIZE:	27
PREREQUISITES:	CHEM& 161 (General Chemistry with Lab I)

COURSE DESCRIPTION:

Second quarter of a three quarter sequence for science majors. Chemistry principles, structure of matter, atomic and molecular theory, the elements, quantitative relationships, nuclear chemistry, aqueous solutions, kinetics, chemical thermodynamics, oxidation and reduction, electro-chemistry, periodicity, equilibrium systems, qualitative analysis and organic chemistry. Lab included.

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STUDENT LEARNING OUTCOMES ADDRESSED:

1. Communication – Read and listen actively to learn and communicate. Speak and write effectively for personal, academic and career purposes.
2. Computation – Use arithmetic and other basic mathematical operations as required by program of study. Apply quantitative skills for personal, academic and career purposes. Identify, interpret, and utilize higher level mathematical and cognitive skills.
3. Human Relations – Use social interactive skills to work in groups effectively.
4. Critical Thinking and Problem Solving - Think critically in evaluating information, solving problems and making decisions.
5. Technology – Select and use appropriate technological tools for personal, academic and career tasks.
6. Personal Responsibility - Be motivated and able to continue learning and adapt to change. Value one's own skills, abilities, ideas and art. Take pride in one's work. Manage personal health and safety. Be aware of civic and environmental issues.
7. Information Literacy – Access and evaluate information from a variety of sources and contexts, including technology.

GENERAL COURSE OBJECTIVES:

At the end of the course the student will:

1. Have a clear and direct understanding of general chemistry.
2. Connect basic concepts with applications.
3. Understand the areas of chemistry that are currently of intense scientific and/or public concern.

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TOPICAL OUTLINE:

I.	Liquids, solids and changes of states	11
II.	Solutions and their properties	11
III.	Chemical kinetics	11
IV.	Chemical equilibrium	11
V.	Hydrogen, oxygen and water	11
VI.	Aqueous equilibria: acids and bases	11
VII.	Applications of aqueous equilibria	11
VIII.	Thermodynamics: entropy, free energy and equilibrium	11

Total hours 88

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SLO #	Included in Course Objective Number	SSCC Student Learning Outcomes
SLO 1.1		Communication - Read and listen actively
SLO 1.2	1	Communication - Speak and write effectively
SLO 2.1		Computation - Use mathematical operations
SLO 2.2		Computation - Apply quantitative skills
SLO 2.3	2	Computation - Identify, interpret, and utilize higher level mathematical and cognitive skills
SLO 3.1		Human Relations - Use social interactive skills to work in groups effectively
SLO 3.2		Human Relations - Recognize the diversity of cultural influences and values
SLO 4.1	1, 2	Critical Thinking and Problem Solving -
SLO 5.1	2	Technology - Select and use appropriate technological tools
SLO 6.1		Personal Responsibility - Be motivated and able to continue learning and adapt to change
SLO 6.2		Personal Responsibility - Value one's own skills, abilities, ideas and art
SLO 6.3		Personal Responsibility - Take pride in one's work
SLO 6.4		Personal Responsibility - Manage personal health and safety
SLO 6.5	3	Personal Responsibility - Be aware of civic and environmental issues
SLO 7.1		Information Literacy - Access and evaluate information
SLO 7.2		Information Literacy - Use information to achieve personal, academic, and career goals, as well as to participate in a democratic society

PREPARED BY: J. Stover
DATE: May 2008