

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: CHM 2046C

COURSE TITLE: General Chemistry and Qualitative Analysis II

PREREQUISITE(S): CHM 2045C with a grade of "C" or better

COREQUISITE(S): None

CREDIT HOURS: 4

CONTACT HOURS/WEEK: 6

CONTACT HOUR BREAKDOWN:

Lecture/Discussion:	3
Laboratory:	3
Other _____:	

FACULTY WORKLOAD POINTS: 5.1

STANDARDIZED CLASS SIZE ALLOCATION: 24

CATALOG COURSE DESCRIPTION: This course, a continuation of *General Chemistry and Qualification Analysis I*, stresses chemical equilibrium, chemical kinetics, electrochemistry, oxidation-reduction, and selected families of metals and non-metals. Laboratory work includes studies of ionic equilibrium in aqueous solutions and semi-micro qualitative analysis.

SUGGESTED TEXT(S):

Whitten. *General Chemistry with Qualitative Analysis*. Latest edition. Saunders (College) Publishers.

Nebergall. *College Chemistry with Qualitative Analysis*. Latest edition. D.C. Heath Publishers.

General Chemistry, McMurray and Fay, Latest edition., Prentice-Hall.

Chemistry, Thinkwell. Latest edition.

General Chemistry, Brown & LeMay. Latest edition. Prentice-Hall

IMPLEMENTATION DATE: November 14, 1987

REVIEW OR MODIFICATION DATE: Fall Term, 2002 (20031)
Fall Term, 2006 (20071)

COURSE TOPICS

CONTACT HOURS
PER TOPIC

I.	Acids, Bases and Salts (continued from CHM 2045C)	8
II.	Oxidation - Reduction and Electrochemistry	6
III.	Thermochemistry	4
IV.	Kinetics	6
	A. General Principles of Kinetics (2)	
	B. Rates of Reactions (2)	
	C. Mechanisms of Reactions (2)	
V.	Chemical Equilibria	13
	A. General Chemical Equilibria (4)	
	B. Ionic Equilibria (3)	
	C. Solubility Equilibria (6)	
VI.	Solutions	4
VII.	Special Topics	4
	Topics not covered in 2046C were covered in 2045C.	

LABORATORY ACTIVITIES:

I.	pH	3
II.	Titrimetry	6
III.	Kinetics	3
IV.	Qualitative Analysis (Identification of Unknowns by Students)	15
V.	Electrochemistry	3
VI.	Additional Laboratory activities will be selected at the discretion of the instructor	9
VII.	Colligative Properties	3
VIII.	Equilibrium	3



**Florida State College
At Jacksonville**

**Course Learning Outcomes & Assessment
For All College Credit Courses**

NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

Section 1 COURSE PREFIX AND NUMBER: <u>CHM 2046C</u>	SEMESTER CREDIT HOURS: <u>4</u>
COURSE TITLE: <u>General Chemistry and Qualitative Analysis II</u>	

Section 2
TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input type="checkbox"/> AS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____		
<input checked="" type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		

Section 3 (If applicable)
INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input checked="" type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

Section 4
INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input checked="" type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input checked="" type="checkbox"/> Information Literacy	<input checked="" type="checkbox"/> Ethical Judgment	<input checked="" type="checkbox"/> Working Collaboratively

Section 5 LEARNING OUTCOMES	METHOD OF ASSESSMENT
• Explain and apply major concepts in modern chemistry including chemical equilibrium, chemical kinetics, electrochemistry, oxidation-reduction, and selected families of metals and nonmetals.	Written tests, reports and/or use of equipment to demonstrate student competency in field.
• Demonstrate knowledge of scientific method.	Formulate problem, make observations, derive and test hypothesis and make conclusions.
• Communicate scientific ideas through oral or written assignments.	Students use analytical reasoning skills to solve problems on written tests and/or laboratory work.
• Interpret scientific models such as formulas, graphs, tables and schematics, draw inferences from them and recognize their limitations.	Written reports of lab experiments and/or written tests demonstrate student competency in the application of scientific knowledge.
• Demonstrate problem solving methods in situations that are encountered outside of the classroom.	Students use demonstrations, group discussions, written tests, laboratory reports, research projects and/or field experiences to illustrate competence in recognizing and evaluating various scientific processes.
• Demonstrate proper laboratory technique including safety in the use and care of laboratory equipment and materials.	Results from laboratory work and experiments demonstrate student awareness of science and society.
• Maintain a laboratory notebook	Results from laboratory notebook demonstrate student competency in data collection

Section 6
Name of Person Completing This Form: Nancy Mullins, Karen Sanchez Date: 3/4/2005

SECTION 7 MUST BE COMPLETED FOR ALL GENERAL EDUCATION COURSES ONLY (exclude AA electives)

<i>Section 7</i>	Primary	Secondary	N/A	VALUE	Primary	Secondary	N/A
KNOWLEDGE							
A. Global and Historical Knowledge & Understanding				Intellectual honesty	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Comprehends a general knowledge of the nature, origins and contributions of major civilizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Curiosity and openness to new ideas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Comprehends the workings and interrelations of personal, business and government economies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Recognition of one's own creative potential	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Comprehends political, social and economic systems and their effects upon society	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Acceptance of and respect for differences among people and cultures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. Cultural and Aesthetic Knowledge and Understanding							
• Comprehends the contributions of the arts and humanities to the human experience on a personal, national or global level	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Civic Engagement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Comprehends the historical development of the arts and sciences	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lifelong Learning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Comprehends religious and cultural systems and their effects upon society	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
C. Human Awareness and Understanding							
• Comprehends the dynamics of human behavior and the process of increasing self-awareness, growth and development	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
• Comprehends the stages of human development and the dynamics of human relationships in diverse cultures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
• Comprehends the factors that promote physical, mental and social well-being	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
D. Mathematics, Science and Technology							
• Comprehends the basic concepts and investigative processes of the natural sciences	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
• Comprehends the breadth, significance and development of the mathematical sciences	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
• Comprehends the ways science and technology have shaped and continue to reshape human cultures and the environment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Section 8

Name of Person Completing This Form: Nancy Mullins, Karen Sanchez Date: 3/4/2005