NORTHEASTERN TECHNICAL COLLEGE
COURSE OUTLINE

COURSE: PREFIX NO.	EFFECTIVE DATE	NEXT REVIEW DATE
CHM 112	Spring 2011	Spring 2012

TITLE:	CREDITS	CONTACTS		
		CLASS	- LAB	- TOTAL
College Chemistry II	4	3	3	4

PREREQUISITES: CHM 110 with grade of "C" or better.

DESCRIPTION: This course is a continuation of the study of atomic and molecular structure, nomenclature and equations, properties, reactions, and states of matter, stoichiometry, gas laws, solutions, and equilibria. Other topics included are organic chemistry and biochemistry.

TEXTBOOK(S) OR ALTERNATIVE: Ebbing, D.D. and Gammon, S.D. General Chemistry, 9th Ed., Houghton Mifflin Company, New York. 2009.

MATERIALS (specifying those to be purchased by student):
Scientific calculators are recommended.

COLLATERAL READING:

CLASS MANAGEMENT ACTIVITIES (Attendance, tardies, testing, etc.):
Academic dishonesty: As stated in the Policy and Procedures Manual, any student that plagiarizes or is caught cheating on any assessment in a course will receive a zero for that assignment. The documentation will be collected and reported to the Vice President for Student Services.

Attendance: According to college policy, a student may miss 20% of the scheduled class periods. When a student exceeds this limit, he or she will be dropped for excessive absences, with the resulting grade of "F". If the student initiates the withdrawal before midterm, a grade of "W" will be used. After midterm, the grade of "W" will only be used for students who are passing the course; if a student who is not passing initiates a drop after midterm, he or she will receive a grade of "WF".

Tardies: A student is considered tardy if he or she arrives for class after the scheduled time. Three tardies constitute one hour of absence.

Electronic Devices in the Classroom: To minimize classroom disruptions and to protect the integrity of testing, activated electronic communication devices such as pagers, beepers, and telephones are not permitted in classrooms at NETC. The only exception is for on-call emergency personnel (police, fire, EMS); these students are required to notify the instructor of their need for such devices with documentation verifying employment. This information must be provided at the beginning of the term and at the beginning of each applicable class session.

Student ID:

It is mandatory that every student wear his or her student ID at all times. Students will be dismissed from class if not wearing their ID. The student may get his/her ID and return to class before the mid-point of the class. If the student cannot get his/her ID and return to class by the midpoint, the instructor will record the absence.

DISABILITIES STATEMENT: Students with disabilities are encouraged to contact the Vice President for Student Services to discuss needs or concerns as they pursue an academic program and participate in campus life. The Vice President for Student Services will provide guidance regarding official documentation of disabilities and/or accommodation of needs. (See Catalog)

RESOURCES (A-V, persons, tools/equipment): The following equipment may be used in lecture or lab settings: overhead projector, TV/VCR/DVD, computer, XGA or LCD projector, microscopes, various chemical lab equipment as specified in individual labs.

ASSESSMENTS: Assessments will be assigned by the instructor throughout the semester.

COURSE TOPICAL OUTLINE (Please list topics and sub-topics together with the approximate length of time given to each.)

CHAPTER 12 SOLUTIONS (1.5 weeks)

CHAPTER 14 RATES OF REACTION (1.5 weeks)

CHAPTER 6 THERMOCHEMISTRY (1.5 weeks)

CHAPTER 19 THERMODYNAMICS AND EQUILIBRIUM (1.5 weeks)

CHAPTER 15 CHEMICAL EQUILIBRIUM (1.5 weeks)

CHAPTER 16 ACIDS AND BASES (1.5 weeks)

CHAPTER 17 ACID-BASE EQUILIBRIA (1.5 weeks)

CHAPTER 20 ELECTROCHEMISTRY (1.5 weeks)

CHAPTER 24 ORGANIC CHEMISTRY (2 weeks)

CHAPTER 25 SYNTHETIC POLYMERS (1 week)

TENTATIVE TOPICAL LAB SCHEDULE

WEEK	**LAB**
1	Identification of an Unknown Compound
2	Ionic Reactions in Aqueous Solutions

TENTATIVE TOPICAL LAB SCHEDULE

WEEK	**LAB**
3	Solution Rates
4	Amylase
5	Geometric Isomers
6	Energy and Physical Reactions String Theory (video)
7	Endothermic and Exothermic Reactions
8	Identity of an Insoluble Precipitate
9	Disruption of Equilibrium Effect of Concentration on Equilibrium Hydrogen Power (video)
10	LeChatelier's Principle
11	Relative Strengths of Some Acids
12	Buffering Equilibrium with Weak Bases and Acids

13 Gel Electrophoresis

14 Molecular Models

15 Student Presentations

LEARNING OUTCOMES/OBJECTIVES OF COURSE:

1. Students will be able to perform basic chemical laboratory exercises and accurately measure (mass, volume) chemicals needed for use in lab.

2. Students will be able to draw and name organic chemicals based on a chemical formula.

3. Students will be able to calculate heat absorbed/released in a chemical reaction.

4. Students will be able to explain chemical equilibrium and calculate equilibrium for chemical reactions.

5. Students will be able to calculate pH and the strengths of acids and bases.

COLLEGE-WIDE COMPETENCIES:

1. The student will be able to collect information needed for a given task.

2. The student will be able to analyze information.

3. The student will be able to evaluate information to determine its usefulness.

4. The student will be able to apply knowledge to make decisions and solve problems.

INSTRUCTIONAL METHODS TO COMPLETE OBJECTIVES: Lectures, laboratory work, videos, and slides on topics in chemistry may be used. Science projects and reports may also be used to supplement instruction.

EVALUATIVE METHODS TO APPRAISE OBJECTIVES: Course assignments may include tests, lab reports, and other activities as outlined in

the syllabus or by handouts. A comprehensive final exam will be given. No lecture test grades will be dropped. Practical test, objective tests, and/or lab reports may be used in lab as assessments, with one lab report/assignment being dropped before final averaging.

COURSE GRADES WILL BE WEIGHTED AVERAGE OF THE FOLLOWING COMPONENTS:

Final Average	
Lecture Test Average	50%
Lab Average	25%
Outside Assignments	05%
Cumulative Final Exam	20%

GRADING SCALE:

90 - 100 = A
80 - 89 = B
70 - 79 = C
60 - 69 = D
BELOW 60 = F