



SCHOOL OF STEM SYLLABUS



TERM:

COURSE CODE: CHP-211

COURSE TITLE: College Chemistry II

DAY(S) AND TIME(S):

LOCATION:

INSTRUCTOR:

OFFICE HOURS:

OFFICE LOCATION:

EMAIL:

PHONE:

COURSE PREREQUISITE: CHP-111

CREDITS: 4

COURSE DESCRIPTION:

This course is a continuation of College Chemistry I and an introduction to physicochemical concepts. Topics cover reaction rate, chemical equilibria, precipitation, acid-base, complexation, redox, electrochemistry, nuclear reactions and thermodynamic quantities. Laboratory work introduces experiments pertinent to lecture subjects and consists of semi qualitative analysis.

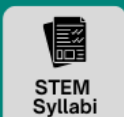
STUDENT LEARNING OUTCOMES:

Upon completion of this course students should:

- Explain Intermolecular forces
- Understand Solution Properties and able to do concentration analysis
- Understand basic principles of reaction rate and chemical equilibrium
- Apply the equilibrium concepts to acid-base, precipitation, and metal-complex formation
- Relate redox concept to electrode reactions
- Familiarize with radioactivity and mass-energy conservation
- Use laws of thermodynamics to account for heat change, PV-work, randomness change, and reaction direction to establish an equilibrium state.
- *Apply proficient laboratory skills:*
 - select proper sample size, equipment size, and experimental setup
 - correctly use laboratory equipment;
 - apply lecture concepts in the laboratory

STEM STUDENT HUB

Information & Resources tailored towards students taking any STEM courses



TEXTBOOK AND SUPPLEMENTAL MATERIALS:

“Chemistry: The Central science” 13th Edition, Prentice Hall Publishing

Author(s): Theodore L. Brown; H. Eugene LeMay; Bruce E. Bursten; Catherine J. Murphy; Patrick M. Woodward; Matthew W. Stoltzfus

ISBN-13: 978-0-321-91041-7

Lab Manual specific to CHP-111 (available at book store)

GRADING POLICY:

Three Exams	75 points
Lab	10 points
Homework	5 points
Research Paper	5 points
Class Participation	5 points

SAMPLE COURSE SCHEDULE:

Week 1 Introduction to the course, grading policy, course Requirements. **Safety Rules** in the laboratory, Glassware
Chapter 14 - Chemical Kinetics

Lab 1: Reaction Rate of An Iodine Clock

Week 2 Chapter 14 - Chemical Kinetics
Chapter 15 - Chemical Equilibrium

Lab 2: Chemical Equilibrium Shifts

Week 3 Chapter 13 - Properties of Solution

Week 4 **(Review ,13,14,15) EXAM I**

Week 5 Chapter 16 - Acid_Base Equilibria

Lab 3: pH of Salt Solutions

Week 6 Chapter 16 - Acid_Base Equilibria

Lab 4: Hardness of Water

Week 7 Chapter 17 - Aqueous Equilibria

Lab 5 - Properties of Buffers

Week 8 Chapter 17 - Aqueous Equilibria

Lab 6 - Neutralization of Antacid)

Week 9 Chapter 17 - Aqueous Equilibria

**Lab 8: Solubility of Ionic Precipitates
(Review 16, 17)**

Week 10 **Exam 2**

Week 10 Chapter 19 - Chemical Thermodynamics

Week 11 Chapter 19 - Chemical Thermodynamics

Week 12 Chapter 20 – Electrochemistry

Week 12 **Lab 11: Voltaic Cell Measurements**

Week 13 Chapter 20 – Electrochemistry

Week 14 Chapter 21 - Nuclear Chemistry

(Review 19, 20, 21)

Week 15 **Final Exam**

HCCC POLICIES, STATEMENTS, AND SERVICES:

<https://www.hccc.edu/administration/academic-affairs/syllabus-addendum.html>



