Passaic County Community College
Academic Year: 2024 - 2025
Master Syllabus

Department Chair: Professor Joshua Sabatini

Course Code: CH 112 **Course Title:** General Chemistry II

Department: Biological & Physical Sciences **Semesters Offered:** Fall, Spring, Summer

Course Description: This course covers thermodynamics, chemical equilibrium, oxidation-reduction reactions, electrochemistry, reaction rates and mechanisms, coordination complexes, main group chemistry and nuclear chemistry. Laboratory experiments reinforce theoretical principles. Continuation of CH 111.

Prerequisites: CH 111 and MA 108.

Credits: 4 **Lecture Hours:** 3 **Lab Hours:** 3 **Clinical/Fieldwork Hours:** 0

REQUIRED TEXTBOOK/MATERIALS:
Lecture: Chemistry: The Central Science, by Brown, LeMay et al.
Laboratory: Will be provided online by Open Education Resource. See laboratory syllabus.
Each individual student must have his/her own lab manual. No Xerox copies will be accepted.
You will also need your own calculator that will handle scientific notation and logarithmic functions.

ADDITIONAL TIME AND SUPPLEMENTAL REQUIREMENTS: Based on a 15 week semester, students are expected to spend a minimum of 8 hours outside of class doing homework each week.

COURSE LEARNING OUTCOMES: Upon successful completion of this course, students will be able to:

- Manipulate chemical equilibria. Calculate equilibrium quantities.
- Calculate reaction rates and apply them to reaction mechanisms.
- Calculate and apply thermodynamic quantities to chemical reactions.
- Calculate and apply electrochemical quantities and techniques to chemical reactions.
- Name basic organic compounds including alkanes, alkenes, alkynes and benzene compounds.
- Recognize and predict chemical reactivity based on group properties.
- Understand nuclear processes and radioactivity

GENERAL EDUCATION OUTCOMES Upon successful completion of this course, students will be able to:
3.1 Use critical thinking skills appropriate for the nature and level of a given Gen Ed course to solve problems involving, but not limited to, data analysis and interpretation, and experimental design.
3.2 Demonstrate understanding of basic terminology, major concepts and fundamental theories General Chemistry II.

GRADING STANDARD: The points available in this course are divided as follows:

4 Exams (100 pts. each)	400 pts.
Cumulative Final	200 pts

Lab Exams (2@50 pts. Each)	100 pts.
Laboratory Reports (10@15 pts each)	150 pts
Total	850 pts

COURSE CONTENT: Lecture Schedule

Week	**Chapter**	**Title**	**Exam**
1	13	Properties of Solutions	
2	14	Chemical Kinetics	
3	15	Chemical Equilibrium	
4			**1**
5	16	Acid-Base Equilibria	
6	17	Aqueous Equilibria	
7	19	Thermodynamics	**2**
8			
9	20	Electrochemistry	
10	21	Nuclear Chemistry	
11	22	Nonmetal Chemistry	**3**
12	23	Transition Metal Chemistry	
13		Coordination Compounds	
14	24	Organic Chemistry	**4**
15		**Final Exam** - All Chapters	

All exams will be given in the week scheduled. Although the instructor will attempt to provide sufficient notice, it is the student's responsibility to be ready for the exam.

AMERICAN CHEMICAL SOCIETY FINAL EXAM

The ACS Final exam is a national standardized exam that is given to students in General Chemistry throughout the United States. It is designed to test basic chemical knowledge and covers the topics in the course. Students will receive 1 extra-credit point for every correct answer up to a maximum of 40 points added to the total course score.

Laboratory Schedule

Week	**Exp. #**	**Title**
1		Check-In & Safety
2	Handout	Evaluation of R
3	503	Nine Bottles
4	504	Rate Law – Crystal Violet
5	508	Kinetics of a Reaction
6	392	Introducing Equilibrium
7		**Lab Midterm (Weeks 2-6)**
8	441	Equilibrium Constant
9	376	Ka of a weak acid
10	443	Buffering Effects
11	Handout	Group I Knowns
12		Group I Unknowns

13		**Lab Final (Weeks 8-12)**
14		ACS Final Exam

College Policies: For Information regarding:

- PCCC's Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the PCCC Student Handbook and PCCC Catalog

Inclement Weather:
In the event of inclement weather and the College is closed, all classes will switch to remote (Zoom) learning. The Zoom link for this course section is has been added here in this document by your instructor. Please also see BlackBoard for further instructions.

Panther Alert: The College will announce delayed openings, closings, and other emergency situations through the Panther Alert System. Students are encouraged to sign up for Panther Alert Notifications by logging into their student accounts through the PCCC website at www.pccc.edu and following Panther Alert System instructions.

Requesting Reasonable Accommodations at Passaic County Community College: Passaic County Community College Office of Accessibility Services, in accordance with Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act (ADA) of 1990, and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008 is committed to providing reasonable accommodations to students with documented disabilities. If you have a disability and believe you need accommodations, please contact the Office of Accessibility Services (OAS) at (973) 684-6395 or email ods@pccc.edu. Students should request accommodations as early as possible, since they may take time to implement.