

Kingsborough Community College  
The City University of New York  
Department of Physical Sciences  
**CHM1200 - General Chemistry 2**  
Syllabus

CHM 1200 – GENERAL CHEMISTRY II (4 crs. 6 hrs.)

Study of chemical kinetics, equilibrium, acids, bases, salts, weak electrolytes and pH, solubility, entropy and free energy, electrochemistry, transition metal chemistry, nuclear chemistry and selected topics in organic chemistry. Laboratory experiments includes classical and modern chemistry methods. Prerequisite: CHM1100 or Department Permission. Satisfies Required Core: Life and Physical Sciences & Satisfies Flexible Core: Scientific World (Group E)

Section: SECTION NUMBER

Time: LECTURE AND LABORATORY SCHEDULE FOR SECTION

Room: ROOM (S) FOR SECTION

Instructor: INSTRUCTOR FOR SECTION

Email: EMAIL ADDRESS FOR INSTRUCTOR FOR SECTION

Office Hours: OFFICE HOURS FOR INSTRUCTOR FOR SECTION

**Source materials:** The textbook is *Chemistry, by Julia Burdge, published by McGraw Hill Higher Education-* Latest Edition. Scientific calculator – You may not use a cell phone as a calculator!

**Student Learning Outcomes** Students will:

- Explore the nature of science
- Learn to apply the scientific method to the discipline of chemistry
- Explore the use of chemical equilibrium principles to gas-phase, acid-base, and buffer solutions
- Apply the principles of chemical kinetics to elucidate reaction mechanisms
- Use thermodynamics to predict the direction of a chemical reaction
- Learn to use potentiometric measurements to design galvanic and electrolytic cells
- Consider radioactive decay in chemical applications
- Explore the major classes of organic compounds

**Topical Outline:** (Approximate and subject to change upon notification)

**Lecture**

Week	Topics	Book Chapter
1-2	Kinetics	14
2-3	Kinetics/Chemical Equilibrium	14/15
3	Chemical Equilibrium	15
4	Exam 1	
5-6	Acids and Bases	16
6-7	Acids-Base Equilibria and Solubility Equilibria	17
7	Exam 2/Entropy, Free Energy, and Equilibrium	18
8	Entropy, Free Energy, and Equilibrium	18
9	Electrochemistry	19
10	Exam 3/Nuclear Chemistry	20
11	Nuclear Chemistry	20
12	Organic Chemistry	25
13	Final Exam	14-20, 25

**Grades:** Grades are calculated from a weighted average of exams, lab scores, and the final exam.

3 Lecture Exams - 50%, Laboratory performance - 25%, Cumulative Final Exam - 25%

Grades will be awarded as follows: 93% or above=**A**; 90-92.99%=**A-**; 87-89.99%=**B+**; 83-86.99%=**B**; 80-82.99%=**B-**; 77-79.9%=**C+**; 73-76.99%=**C**; 70-72.99%=**C-**; 67-69.99%=**D+**; 63-66.99%=**D**; 60-62.99%=**D-**; <60%=**F**

### Missed Exam/Laboratory/Assignment Policy

If you miss an opportunity to demonstrate your knowledge of the subject matter by missing a duly scheduled exam, laboratory or other assignment, the grading scheme does not apply. Your grade will be determined at the discretion of the instructor. By missing a duly scheduled exam, laboratory or other assignment, you accept and recognize that the instructor must determine your grade within the context of determining the grade of students who did not miss a duly scheduled exam, laboratory or other assignment. Instructor Make-up Policy: SUGGESTED: NO MAKE-UP EXAMS, NO MAKE-UP LABORATORIES OR NO MAKE-UP OTHER ASSIGNMENTS. FINAL EXAM WEIGHTED WITH PENALTY (0-100%) FOR MISSED WORK.

**Lecture attendance:** Attending all classes is mandatory. The textbook is a guide for the course additional material will be covered during lecture meetings. If you miss class, you will miss out on taking notes and this will affect your ability to study for tests and quizzes. Except in extreme cases there can be no makeup exams and missing one is grounds for failure of the course. At all times, if you have any questions or need help, please ask your instructor. If you are having difficulties with the course, or if your life is affecting your performance in class, or your ability to attend, let the instructor know as soon as problems arise.

### Laboratory

Date	Topic	Requirements
Meeting 1	Le Chatelier's Principle	Hand in
Meeting 2	Qualitative Analysis- Group 1 Known	Hand in
Meeting 3	Qualitative Analysis- Group 1 Unknown	Quiz
Meeting 4	Qualitative Analysis- Group 2 Known	Hand in
Meeting 5	Qualitative Analysis- Group 2 Unknown	Quiz
Meeting 6	Distance Dependence and Effect of Absorbers on the Detection of Radioactive Decay	Hand in
Meeting 7	Kinetics	Hand in
Meeting 8	Acid Dissociation Constant of Bromocresol Green	Hand in
Meeting 9	Acid-Base Titrations	Hand in
Meeting 10	Solubility Product Constant of Silver Acetate	Hand in
Meeting 11	Electrochemical Cells	Hand in
Meeting 12	Synthesis of an Organic Compound and an Inorganic Compound	Hand in

**Laboratory Manual:** All labs are posted on the Physical Science Department's webpage. Laboratory manuals need to be downloaded and read before coming to lab. You will not be permitted in the laboratory if you do not have a copy of the experiment.

**Safety glasses or goggles/acceptable footwear** – You may not enter the laboratory without these.

**Note on laboratory component:** The laboratory component counts for 25% of your overall result in CHM1200. Failure to pass the laboratory component of the course will result in a grade of F in the course. It is important to note that the laboratory component of the course serves a dual purpose. It offers the opportunity for students to deepen their understanding of a specific experimental science. The laboratory also offers the instructor an opportunity to assess each student's competence in the subject area.

The laboratory grade is based on the quality of your work in the laboratory and the quality of your laboratory assignments. Laboratory instructors may assess your competence in the subject through the use of pre-lab assignments, reports, quizzes or practical examinations. All laboratory meetings are mandatory. Performing an experiment at an alternate time will be considered only under exceptional cases. If you miss more than one laboratory meeting you may fail the laboratory portion of the course and, hence, the entire course. All laboratory assignments must be completed and handed in within the time limits set by your laboratory instructor.

Laboratory meetings are subject to the regulations of the New York City Fire Department and the laws of the State of New York. If your instructor is concerned that you are unprepared or unable to safely complete a given experiment you may be asked to leave the laboratory and will not receive credit for the meeting. Examples of reasons for an instructor's duty of action include a student arriving late to the meeting, failure to bring approved safety glasses/goggles, improper attire, failure to study the laboratory experimental protocol, or a general lack of laboratory competence.

**Conduct:** Students are required to follow *The Student Code of Conduct* as stated in the *Student Handbook*.

**Accessibility:** Access-Ability Services (AAS) serves as a liaison and resource to the KCC community regarding disability issues, promotes equal access to all KCC programs and activities, and makes every reasonable effort to provide appropriate accommodations and assistance to students with disabilities. Your instructor will make the accommodations you need once you provide documentation from the Access-Ability office (D205). Please contact AAS for assistance.