

## 2025 Spring Semester

### *Syllabus for General Chemistry I-(CH 101) Chemical Principles*

1. **Course and lecturer:** **General Chemistry I (CH101)**, [lecture: Experiment: Credit = 3:0:3]

#### 2. Lecture Timetable

Time (Tues, Thurs)	Section	Professor	Lecture Room (E11)
10:30~12:00	A	David G. Churchill	Creative Learning Center 201

#### 3. *Summary of Course Contents*

The students will be exposed to the fundamental principles and applications of chemistry (First Semester). Topics covered and tested will include atomic structure, aspects of the periodic table, chemical bonding (ionic, covalent, metallic). We will also cover chemical reactions, chemical equations and their balancing, the states of matter, and phase transitions such as melting and freezing. Further we will cover the concepts of (aqueous) solutions and mixtures, acids and bases, and the concept of the pH scale, and finally coverage of thermochemistry and quantum chemistry, which will involve taking into consideration energy in reactions and electronic orbitals. The coverage of the quantum mechanics is considerable and the students should try to make sure they are really ready for this portion of the class by reading the text in advance. This overview of chemistry is thought to be comprehensive considering the coverage for the entire year as implied by the Oxtoby text. We will lay the groundwork for understanding chemistry which is considered a central science.

#### 4. *Course Material for Teaching:*

- o *Principles of Modern Chemistry*, 8th edition, Oxtoby/Gillis/Campion (Brooks/Cole).
- o Class lecture materials will be provided and maintained through the KLMS website (please see: <https://klms.kaist.ac.kr/>).

#### 5. *General Guidelines*

Lecture notes shall be downloaded at the General Chemistry Website:

<http://www.gencheminkaist.pe.kr> A link can be found within the Department of Chemistry homepage <http://chem.kaist.ac.kr>.

- 1) Practice Sessions led by Teaching Assistants (TAs) are planned, scheduled from 20:00 to 20:50 pm on Monday evenings. These sessions are optional; they will provide an opportunity for students who seek additional discussion and problem-solving to participate.
- 2) Grading will be determined based on the total scores achieved by students. The students receiving A grades (including A+, A<sub>o</sub>, and A-) are to be less than 50% for the total class.

To earn credit for the course, students must obtain **a minimum score of 50 points**. If a student's score falls below 50 points, they will receive an F grade.

Grading Criteria and Points Distribution (Subject to modification at the beginning of the semester)

I. Mid-term Exam: **32 points**    II. Final Exam: **32 points**

III. Homework: **18 points**

- Chapter summary: **9 points** (0.6 points for each chapter, maximum of 3 pages)
- Chapter problem: **9 points** (0.6 points for each chapter)

IV. Attendance & Attitude: **18 points**

- Maximum of 18 points (1 point for each attendance of lectures and practice sessions)

V. Plagiarism when submitting Homework:

- First instance: Student will be issued a warning and a deduction of 10 points, Second instance: Student will be issued a F grade for the course.

## 6. Waive Examination

The examination waiver for General Chemistry I will be held at the beginning of the semester, for those only who did not take any previous General Chemistry I class.

## 7. Lecture Schedule

Week (Mon, Wed)	Chapter#	Topic	Homework and its due date (and due time) (Chap. Summary & problem)	Practice session (Mon, 20:00 ~ 20:50)	Notes
1 <sup>st</sup> (2/24, 2/26)	3	Atomic Shells and Classical Models of Chemical Bonding			
2 <sup>nd</sup> (3/3, 3/5)	3, 4	Atomic Shells and Classical Models of Chemical Bonding / Introduction to Quantum Mechanics		○	
3 <sup>rd</sup> (3/10, 3/12)	4	Introduction to Quantum Mechanics	<b>Chapt. 3</b> (Fri, ~23:59)	○	
4 <sup>th</sup> (3/17, 3/19)	4, 5	Introduction to Quantum Mechanics / Quantum Mechanics and Atomic Structure	<b>Chapt. 4</b> (Fri, ~23:59)	○	



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