



HANYANG UNIVERSITY

2019 HISS Syllabus (General Chemistry 1)

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Home Univ.: **Georgia** Institute of **Technology** (Georgia Tech)
Dept.: Biological Sciences / Biomedical Engineering

Description: Introduction to Chemistry will provide students with an overview of the current trends and body of knowledge in Chemistry, including basics of the scientific method and of the analysis of scientific data.

Objective: The main course goal is to allow students to reach a comprehensive understanding of the issues and methods in Chemistry, in order to decide whether to pursue studies in the field. In the process of reaching this goal, our objectives are that each student will:

- Become familiar with current scientific theories and research in the major topic areas of Chemistry.
- Discover the personal relevance of course material in their everyday and professional lives, in order to make fully informed decisions.
- Develop the skills necessary to evaluate and think critically about information concerning chemical and biological phenomena obtained from research, the general public, and the media.
- Be well prepared for advanced courses in Chemistry/Life Sciences.

Preparations: Beginning Chemistry, David Ball, (version 1.0)
Download for free at <https://2012books.lardbucket.org/pdfs/beginning-chemistry.pdf>
Publisher: LardBucket (Creative Commons licensed)
Publish Date: December 28, 2012.

Schedule: Week 1
Lecture 1: Course Introduction / Units and Measurements in Chemistry
Lecture 2: Atomic Theory
Lecture 3: Molecules and Chemical Nomenclature
Lecture 4: Electronic Configurations and Periodic Table

Hanyang International Summer School

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Week 2	Lecture 5: Ions and Ionic Compounds Lecture 6: Types of Chemical Reactions and Equations Lecture 7: Review Session I Lecture 8: MIDTERM EXAM
Week 3	Lecture 9: The Chemical Equilibrium and the Law of Mass Action Lecture 10: Chemical Bonds: Ionic Bonds & Covalent Bonds Lecture 11: Properties of Solids / Liquids and Intermolecular Forces Lecture 12: Solutions: Dilutions and Concentrations
Week 4	Lecture 13: Acids, Bases, Buffers and pH Lecture 14: Biochemistry Lecture 15: Review session 2 Lecture 16: FINAL EXAM

Evaluation:	Midterm (%)	Final (%)	Attendance (%)	Assignments (%)	Participation (%)	Etc. (%)
	40	40	5	10	5	

90-100% (A), 80-89% (B), 70-79% (C), 60-69% (D), ≤ 60% (F)

Exams (Mid-term and Final):

This course has a midterm exam and the cumulative final exam. The midterm exams will be held as “closed-book,” and will be made up of multiple-choice questions based on topics, materials, and discussions presented in class.

Group Projects:

Groups of 4-5 students each will create a short video to explain a fundamental concept related to the course. Each student will be assigned to a group and a topic, and each group will complete only one group project during the semester. Group assignments, details, and deadlines will be provided in class. Video grades have a group and an individual component. The Group Component will be based on instructors' grades and peer evaluations. The same group project grade will be assigned to all members of a group; each group member is fully responsible for all submitted project work. The group video projects consist of 3 deliverables: a story board, a transcript, and a video posted to *Youtube* or Kakao group chat. The Individual Component includes peer-evaluation of all members of your team and peer-review of a subset of videos from other groups.