

CH-100

General chemistry for SV

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Cursus	Sem.	Type
Life Sciences Engineering	BA1	Obl.

Language of teaching	English
Coefficient	6
Session	Winter
Semester	Fall
Exam	Written
Workload	180h
Weeks	14
Hours	5 weekly
Courses	3 weekly
Exercises	2 weekly
Number of positions	

Summary

This course covers essential notions in general chemistry, relative to matter and its structure, equilibriums and chemical reactions, for life science students. The lectures and exercise sessions provide the knowledge and methodology required to solve general chemistry exercises.

Content

1. Reminder of the general chemistry fundamentals
2. Atoms
3. Bonds
4. Inorganic chemistry
5. Thermodynamics
6. Equilibriums
7. Chemical reactions
8. Kinetics
9. Introduction to organic chemistry

Keywords

Electronic structures of atoms, chemical bonds, stoichiometry, thermodynamic equilibriums, acids and bases, oxidoreduction, kinetics

Learning Prerequisites**Important concepts to start the course**

They will be covered in the first two weeks of the semester

Learning Outcomes

By the end of the course, the student must be able to:

- Infer the links between the position of an element in the periodic table and its properties
- Predict the hybridation type of an atom in a compound
- Predict the geometry and polarity in a compound
- Describe the electronic configuration of atoms at the fundamental state using the periodic table
- Propose chemical stoichiometry (limiting reactant, yield)
- Predict thermodynamic characteristics and transformation spontaneity (influence of temperature)
- Apply chemical principles to biological examples

Teaching methods

Lectures and exercise sessions

Assessment methods

Written exam in session

Supervision

Office hours	Yes
Assistant.e.s	Yes
Forum	Yes

Resources**Bibliography**

Chemical Principles: the quest for insight by Peter Atkins, Loretta Jones, Leroy Laverman, Kelley Young, James Patterson

Ressources en bibliothèque

- [Find the reference at the Library](#)

Notes/Handbook

Slides will be provided

Moodle Link

- <https://go.epfl.ch/CH-100>