Section of Chemistry & Chemical Engineering
Ecole Polytechnique Fédérale de Lausanne

• > 10'000 students (600 in chemistry and chemical engineering)
• > 350 professors (40 in chemistry and chemical engineering)
• > 4'000 scientific collaborators
• 25 master programs (MSc) and 21 doctoral school programs (PhD)
• Ranked as one of the best universities in Europe
• One of the most international schools in the world *(116 nationalities!)*

An international campus brings many advantages, but also challenges

Respect and Equal Opportunities for everybody!

https://www.epfl.ch/about/respect/

https://www.epfl.ch/about/equality/
EPFL - Organization

Presidency

ENAC
School of Architecture, Civil and Environment Engineering

SB
School of Basic Sciences

STI
School of Engineering

IC
School of Computer and Communication Sciences

SV
School of Life Sciences

CdM
College of Management of Technology
The School of Basic Sciences is responsible for teaching Mathematics, Physics and Chemistry for all the EPFL schools and the University of Lausanne.
Chemistry/Chemical Engineering

Sion (Energypolis)
BCH
CH
Chemistry/Chemical Engineering

BCH Building

CH Building
Welcome to EPFL

Sion Campus
ISIC - Institute of Chemistry and Chemical Engineering

https://isic.epfl.ch/
ISIC Research

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ISIC in the News

GPT-3 transforms chemical research

Improving high-temperature stability of perovskite solar cells

"Grätzel" solar cells achieve a new record

New AI model transforms research on metal-organic frameworks

Better understanding of cellular metabolism with the help of AI

New imaging technique "sees" virus move in unprecedented detail

Bacteria generate electricity from wastewater

New PET-like plastic made directly from waste biomass
SCGC – Section of Chemistry and Chemical Engineering

• 100 new students admitted in 1\textsuperscript{st} year (140 in total)
• 200 bachelor and 130 master students
• 50-70 BSc and 50-70 MSc degrees awarded annually
• 48 professors and senior scientists (MER), >20 adjunct lecturers
• 400 course ECTS credits taught per year
• 240 PhD students and 80 BSc and MSc students working as teaching assistants.
Study Plan

Bachelor 1
60 ECTS

Bachelor 2
60 ECTS

Bachelor 3
60 ECTS

MSc. in Molecular and Biological Chemistry

MSc thesis
30 ECTS

project
30 ECTS

minor
30 ECTS

Master
60 ECTS

MSc. in Chemical Engineering and Biotechnology

MSc thesis
30 ECTS

intern
30 ECTS

minor
30 ECTS

Master
60 ECTS

BSc. in Chemistry and Chemical Engineering
M1 & M2 Chemical Engineering & Biotechnology

- **Block 1: Compulsory courses** 10 credits

- **Group 2: Optional courses** 28 credits
  - Theme A: Energy
  - Theme B: Biotechnology
  - Theme C: Material and Food Engineering
  - Others (maximum 12 credits, contact section)

- **Block 3: “Lab & projects”** 22 credits
  - Chemical engineering product design
  - Chemical engineering lab & project
  - Process development
  - SHS

Voluntary laboratory internships are possible by contacting research groups, but these are not credited.
Motivated students can apply to replace a classic TP by the manufacturing of the product they designed.

They are judged in part on how their product performs.
M3 & M4 Chemical Engineering & Biotechnology

Semester 3
– Internship in industry (6 months) 30 credits pass/fail
– Minor 30 credits graded

Semester 4, Master Thesis
– Master project in ISIC lab (not possible if you took the Minor)
– Master project in another lab under responsibility of ISIC professor (not possible if you took the Minor)
– Master project in industry under responsibility of ISIC professor (not possible if you took internship)
M1 & M2 Molecular and Biological Chemistry

- **Block 1: Choice of 3 modules**  24 credits
  - Analytical and bioanalytical chemistry
  - Biological chemistry & biophysics
  - Computational chemistry
  - Inorganic chemistry
  - Organic chemistry
  - Physical chemistry

- **Group 2: Optional courses**  12 credits
  - Molecular and supramolecular science
  - Physical and analytical chemistry
  - Material science
  - Food science
  - Other

- **Block 3: «Projects »**  24 credits
M1 & M2 Molecular and Biological Chemistry

- **Block 3: «Projects»**

  - **Project in molecular sciences Ia, 6 credits**
    - In ISIC research lab, 1 day/week in autumn semester
    - Participation in interdisciplinary project, upon approval by the section

  - **Project in molecular sciences Ib, 12 credits**
    - In ISIC research lab, 2 days/week in spring semester or 28 day block during summer break
    - Participation in interdisciplinary project, upon approval by the section

  - **SHS**

Voluntary laboratory internships are possible by contacting research groups, but these are not credited.
M1 & M2 Molecular and Biological Chemistry

Interdisciplinary “MAKE projects”

https://www.epfl.ch/education/educational-initiatives/discovery-learning-program-2/interdisciplinary-projects/
M3 & M4 Molecular and Biological Chemistry

Semester 3
- Project 2 30 credits pass/fail
  • In ISIC research lab (4 months)
  • In another lab under responsibility of ISIC professor (4 months)
  • In industry under responsibility of ISIC professor (6 months)
- Minor 30 credits graded

Semester 4, Master Thesis
- Master project in ISIC lab
- Master project in another lab under responsibility of ISIC professor
- Master project in industry under responsibility of ISIC professor (not possible if Project 2 done in industry)