

BIOENG-390

Bachelor project in Life sciences

Profs divers *

Cursus	Sem.	Type
Hors plans	H	Opt.
Life Sciences Engineering	BA6	Obl.

Language of teaching	English
Credits	5
Withdrawal Session	Unauthorized Summer
Semester	Spring
Exam	During the semester
Workload	150h
Weeks	14
Hours	5 weekly
Project	5 weekly

Number of positions

It is not allowed to withdraw from this subject after the registration deadline.

Summary

Engaging in a hands-on wetlab and/ or computational project in life sciences engineering, students develop skills in experimentation and data analysis.

Content

The research project is typically carried out in an EPFL laboratory in the School of Life Sciences (SV). Projects are available on the website of SV labs or discussed with the supervising professor/ head of laboratory:

- Brain Mind Institute (BMI)
- Global Health Institute (GHI)
- Institute of Bioengineering (IBI)
- Neuro-X Institute
- Swiss Institute for Experimental Cancer Research (ISREC)
- Research Core Facilities
- MAKE Interdisciplinary Projects

With section approval, the project can be carried out in a laboratory in another EPFL school. In case the project is done outside EPFL, in academia or in industry, the student needs to find an EPFL supervising professor who will follow and evaluate the work. See website below to download the forms.

The project can be carried out part-time during the semester (approximately 10h/ week during 14 weeks; spring BA6) or full time between two semesters (approximately 42h/ week during 3-4 weeks; summer before BA5).

Learning Outcomes

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

- Manage an individual research project
- Develop expertise in a specific area of research
- Implement appropriate technologies to address the scientific or engineering problem being studied
- Conduct experiments appropriate the specific problem being studied
- Assess / Evaluate data obtained in wetlab and computational experiments
- Optimize experimental protocols and data presentation
- Plan experiments to test hypotheses based on obtained results

Transversal skills

- Assess progress against the plan, and adapt the plan as appropriate.
- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Use a work methodology appropriate to the task.
- Continue to work through difficulties or initial failure to find optimal solutions.
- Keep appropriate documentation for group meetings.
- Demonstrate the capacity for critical thinking
- Demonstrate a capacity for creativity.
- Collect data.
- Write a scientific or technical report.

Assessment methods

Written report and/ or oral presentation

The assessment method(s), and if applicable weighting of the different parts, must be defined with the supervising professor/ head of laboratory in advance.

Assessment deadlines

- Autumn semester: Friday of the second week after the end of classes
- Spring semester: Friday of the first week after the end of classes
- Exceptions must be agreed upon by the student and the supervising professor

Resources

Websites

- <https://www.epfl.ch/schools/sv/education/bachelor-in-life-sciences-engineering/bachelor-projects/>

Moodle Link

- <https://go.epfl.ch/BIOENG-390>