

BIO-503

**Lab immersion III**

Profs divers \*

Cursus	Sem.	Type
Life Sciences Engineering	MA1, MA2, MA3, MA4	Opt.

Language of teaching	English
Credits	12
Withdrawal Session	Unauthorized Winter, Summer
Semester Exam	Fall During the semester
Workload	360h
Weeks	14
<b>Hours</b>	<b>12 weekly</b>
Project	12 weekly
<b>Number of positions</b>	

**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 carried out in an EPFL laboratory in the School of Life Sciences (SV) or, with section approval, in another school.

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

The project can be carried out part-time during the semester (approximately 24h/ week during 14 weeks) or full time between two semesters (approximately 42h/ week during 8 weeks).

**Learning Outcomes**

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

- Conduct experiments relevant to the specific problem
- Implement appropriate technologies to address the scientific problem
- Optimize experimental protocols
- Develop expertise in a specific research area
- Analyze and interpret data from wetlab and computational experiments
- Plan experiments to test hypotheses based on results
- Manage an individual research project

**Transversal skills**

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

- 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/master-in-life-sciences-engineering/lab-immersion/>