BIO-502

Lab immersion II

Profs divers *

Cursus	Sem.	Type
Bioengineering	MA1, MA2, MA3, MA4	Opt.
Life Sciences Engineering	MA1, MA2	Opt.
Neuroprosthetics minor	H	Opt.
Sciences du vivant	MA1, MA2, MA3, MA4	Opt.

Language of teaching	English
Credits	8
Withdrawal	Unauthorized
Session	Winter, Summer
Semester	Fall
Exam	During the semester
Workload	240h
Weeks	14
Hours	**8 weekly**
Practical work	8 weekly
Number of positions	

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

Summary

The student will engage in a laboratory-based project in the field of molecular medicine, neuroscience or bioengineering. Student projects will emphasize acquisition of practical skills in experimentation and data analysis.

Content

A typical project will involve "hands-on" wetlab experimentation and data analysis, although theoretical and computationally-oriented projects are also possible. The projects are available on the web sites of SV laboratories or discussed directly with a potential head of lab.
The students are confronted with the realization of a laboratory-based project integrating specific aspects of molecular medicine or neuroscience.
This project will allow them to apply, to concrete problems, skills of domain and transversal skills acquired during their studies

Learning Prerequisites

Required courses

Bachelor in Life Sciences and Technology

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
- Interpret 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
- Write a scientific or technical report.
- Collect data.

Expected student activities

Students will focus on hands-on experimentation, which may be wetlab-based or computer-based, depending on the project. Students will read and discuss assigned papers from the original
scientific literature. As part of the evaluation process, students may be required to submit a written report or to give an oral presentation that summarizes and interprets their results.
16h/semaine de présence en laboratoire pendant 14 semaines ou 5 semaines à 100% (42h/semaine).
Peut être pris durant les vacances d'été ou au semestre d'automne

Assessment methods

Continuous control
The mode of evaluation must be clearly defined and agreed between the student and the project mentor in advance. Typically the mode of evaluation will include a written report and /or an oral
presentation prepared and delivered by the student.