

BIO-318

Scientific project design in synthetic biology (iGEM)

McCabe Brian

Cursus	Sem.	Type
Bioengineering	MA3	Opt.
Life Sciences Engineering	MA1, MA3	Opt.
Sciences du vivant	MA3	Opt.

Language of teaching	English
Credits	5
Withdrawal	Unauthorized
Session	Winter
Semester	Fall
Exam	During the semester
Workload	150h
Weeks	14
Hours	5 weekly
Courses	2 weekly
Exercises	3 weekly

Number of positions

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

Remark

Only a limited number of students will be selected based on their application file (max. 12). Participants of iGEM team will register on IS-Academia in BA6/MA3.

Summary

An interdisciplinary EPFL student team will design and build genetic circuits with novel functionalities. Students learn to develop a project and carry it out to completion in a concrete manner. Their creativity and critical thinking are highly encouraged.

Content

The first part of the course consists of a broad introduction to genetic engineering, synthetic biology, computational biology, and related fields. During this time, students will brainstorm potential projects, from which one will be selected. The team will then model and ultimately build the proposed genetically engineered machine in the wet-lab portion of the project during the summer. Due to the interdisciplinary nature of the course, students with a wide variety of backgrounds will constitute the team and therefore facilitate information and knowledge exchange amongst team members. A purely bioinformatic iGEM track is also available, generating the possibility to have a second, smaller team work solely on computational and bioinformatic aspects of genetic engineering either as a stand-alone team or in conjunction with the applied project.

Important remark: Only a limited number of spots will be available each year and we expect a highly competitive process for selecting team participants.

Assessment methods

Written report and oral presentation.