

BIO-491

New tools & research strategies in personalized health

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Cursus	Sem.	Type
Biomedical technologies minor	E	Opt.
Biotechnology minor	E	Opt.
Life Sciences Engineering	MA2, MA4	Opt.
Minor in life sciences engineering	E	Opt.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	14
Hours	4 weekly
Lecture	2 weekly
Exercises	2 weekly
Number of positions	

Summary

We will define the concept of personalized health, describe the underlying technologies, the technological, legal and ethical challenges that the field faces today, and how they are being met.

Content

In line with the Health 2030 Initiative (<https://health2030.ch/>), this course aims to be multidisciplinary, to tackle different aspects of personalized health. Under supervision of a PI to coach you, you will study a specific problem, evaluating its basis and proposing solutions. The output will be a short report and an oral defense of your interdisciplinary project.

Learning Prerequisites**Required courses**

None

Learning Outcomes

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

- Distinguish the tenets of personalized health
- Discuss new technologies within the context of personalized health

Transversal skills

- Write a scientific or technical report.
- Make an oral presentation.
- Take feedback (critique) and respond in an appropriate manner.
- Assess progress against the plan, and adapt the plan as appropriate.
- Collect data.
- Use a work methodology appropriate to the task.
- Continue to work through difficulties or initial failure to find optimal solutions.
- Use both general and domain specific IT resources and tools

Teaching methods

Ex-cathedra lectures, discussions, coaching, preparation of a project, oral defense of the project.

Expected student activities

Attend all the lectures
Preparation of project
Oral defense of project
Active participation to discussions
Work in small groups

Assessment methods

Written: A **mid-term individual assessment** based on the lectures.
Oral: Presentation of a project: quality of slides, clarity and content of presentation, ability to answer questions.
Project: Relevance to personalized health, explanation of relevant background, explanation of research strategy.
Multidisciplinary approach.

Supervision

Office hours	No
Assistants	Yes
Others	Coach and contact persons for project

Resources

Bibliography

No prerequisite

Notes/Handbook

When possible, copies of the slides will be provided

Websites

- <https://health2030.ch/>

Moodle Link

- <https://go.epfl.ch/BIO-491>