

BIO-491

**New tools & research strategies in personalized health**

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<b>Cursus</b>	<b>Sem.</b>	<b>Type</b>
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
<b>Hours</b>	<b>4 weekly</b>
Lecture	2 weekly
Exercises	2 weekly
<b>Number of positions</b>	

**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>