MICRO-406

Products design & systems engineering

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Cursus	Sem.	Type
Microengineering minor	H	Opt.
Microtechnics	MA1, MA3	Obl.

Language of teaching	English
Credits	10
Withdrawal	Unauthorized
Session	Winter
Semester	Fall
Exam	During the semester
Workload	300h
Weeks	14
Hours	**10 weekly**
Courses	5 weekly
Project	5 weekly
Number of positions	

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

Summary

This course will cover all the aspects of product design and system engineering from learning relevant methods to the actual implementation in a hands-on practice of product development.

Content

The course is divided in lectures covering various topics of product designs (technical aspect such as system engeering, organisational aspects such as project planning, product design related topics such as market study and an introduction to intellectual property).
In parallel, the students work in team of six on a product concept that they propose, for which they perform the full design, discuss its economical potential, and fabricate a prototype that they demonstrate in the class at the end of the course.
Two in-class group presentations give them the opportunity to practice their presentation skills.

Keywords

Product desgin, project planning, system engineering, hands-on practice

Learning Outcomes

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

- Design a product
- Elaborate a plan for an efficient product design cycle
- Plan a prototype realization
- Coordinate a team-work strategy

Transversal skills

- Chair a meeting to achieve a particular agenda, maximising participation.
- Communicate effectively, being understood, including across different languages and cultures.
- Evaluate one's own performance in the team, receive and respond appropriately to feedback.
- Identify the different roles that are involved in well-functioning teams and assume different roles, including leadership roles.

Teaching methods

- Teaching is done through lectures time (twice a week).
- The course follows a learning by practice model, regular assessment of the team progress is done through class presentations and milestones reports.

Assessment methods

The assessment is based on three elements: a final report (50% of the grade), two oral group presentations (25% of the grade) as well as the realization of a final prototype that demonstrates the product concept (25% of the grade).

Supervision

Others

- Moodle
- Specific meetings (Design Review) / Coaching during the manufacturing phase

Resources

Moodle Link

- https://go.epfl.ch/MICRO-406