MGT-555

Innovation & entrepreneurship in engineering

Profs divers *, Weber Thomas

Cursus	Sem.	Type
Management, Technology and Entrepreneurship minor	H	Opt.
Managmt, tech et entr.	MA1, MA3	Opt.

Language of teaching	English
Credits	10
Withdrawal	Unauthorized
Session	Winter
Semester	Fall
Exam	During the semester
Workload	300h
Weeks	14
Hours	**10 weekly**
Lecture	2 weekly
Project	8 weekly
Number of positions	**50**

Il n'est pas autorisé de se retirer de cette matière après le délai d'inscription.

Summary

This course is a joint initiative between the School of Engineering and the College of Management to encourage and promote entrepreneurship and management skills, engineering design, hands-on experience, teamwork, and awareness of social and ethical implications in engineering and management.

Content

The material is taught in four modules, including Systems Engineering, Product Design Principles, Business Economics, and Prototyping Practice. A key component of the course consists of a team project, usually conducted in collaboration with an industry partner, addressing a significant commercial need and/or societal issue. Lectures will be given by domain experts. The first part of the course focuses on product design. Students will be working in multidisciplinary teams to define a product concept, draft a prototype and propose a plan for product commercialization. At the conclusion of the course, the projects will be entered in a prize competition, judged by a panel of industry experts and faculty.
Topics include: Design Criteria * Modularity * Project Planning * Lifecycle Analysis * Investment Criteria * Real Options * Electric Circuits * Reliability Engineering * Materials * Robotics * Software Development * Intellectual Property * Machining, 3D printing and Assembling a Prototype * Environmental Sustainability * Ergonomics

Keywords

Business economics, product design, systems engineering, technology commercialization, hands-on practice

Learning Outcomes

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

- Translate specifications into product design
- Assess / Evaluate the economic viability of product at different development phases
- Manage the production of a prototype
- Develop a plan for the commercialisation of the product

Transversal skills

- Communicate effectively, being understood, including across different languages and cultures.
- Evaluate one's own performance in the team, receive and respond appropriately to feedback.

- Set objectives and design an action plan to reach those objectives.

Assessment methods

- 40% Presentation
- 50% Report/prototype
- 10% Collaboration

Supervision

Office hours	No
Assistants	Yes
Forum	Yes