**Remark**

Inscription nécessitant l'autorisation préalable des enseignants

**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 Prerequisites**

Required courses

To be able to register for this course, instructor permission is required. For this, students are asked to prepare a 1-page motivation statement, to be sent per email by September 21 at the very latest to the course coordinator (philipp.schneider@epfl.ch).

**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
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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

Resources
Virtual desktop infrastructure (VDI) No

Moodle Link
• https://go.epfl.ch/MGT-555