

MGT-406

Design in innovation: creation for adoption

Groves Emily Clare, Henchoz Nicolas, Laperrouza Marc

Cursus	Sem.	Type
Management, Technology and Entrepreneurship minor	E	Opt.
Managmt, tech et entr.	MA2, MA4	Opt.
Minor in Engineering for sustainability	E	Opt.
Neuro-X	MA2, MA4	Opt.

Language of teaching	English
Credits	4
Withdrawal	Unauthorized
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	14
Hours	4 weekly
Courses	2 weekly
Exercises	2 weekly
Number of positions	50

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

Summary

In an ever more complex world, adoption is a critical factor for innovation. Using creativity and a transdisciplinary approach, this course brings together user-centred design and a deep understanding of value to develop sustainable innovations that benefit both citizens and the economy.

Content

Note: the first three weeks are instrumental to the rest of the semester as they provide specific tools and the core theoretical background for performing the group project.

Climate change, digital health, trust in AI: all these essential challenges require more than just science, technology and business. Involving humans in the process is key to these solutions being adopted by society. Recent failures of the metaverse or NFTs underline how adoption is core to innovation. To achieve it, we must understand practical needs and constraints, but also cultural perspectives, human emotions and underlying motivations. Design, and more generally culture, have shown to be key elements linking technology and society throughout history, from the Renaissance up to the decentralisation of computing resources in the 1970s.

In this course, we delve into human needs and perception and explore how creative methodologies can be embedded into the innovation process.

The course aims to provide:

- A practical design research framework for innovation management, with emphasis on the creative process, user experience psychology and innovation.
- Tools and skills to address real problems with real people, through an applied project performed in small groups.
- An understanding of how to ensure a project's viability by defining how value is created, delivered and captured.

Throughout the semester, you'll experiment with creative approaches to generate disruptive yet sustainable propositions by focusing on user perception. Economic dimensions, looking at created value, delivered value and captured value will also be integrated in the creative and human centric process, to provide a holistic overview of innovation with sustainable impact.

You will learn these concepts by working on an applied project in small groups over the whole semester. Project themes will be related to a current research topic from EPFL+ECAL Lab, allowing interaction with researchers, practitioners and stakeholders. You will conduct field research, create prototypes, and perform user tests with real citizens.

Keywords

Disruptive innovation, design research, user experience psychology, sustainability, creativity, prototyping, design, value creation, value capture, business models.

Learning Prerequisites

Required courses

None

Important concepts to start the course

Creativity, User perception, Innovation, Design

Learning Outcomes

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

- Apply principles of human adoption in disruptive innovation
- Conduct field research with stakeholders
- Develop creative strategies and prototypes
- Integrate a value proposition and business model into an innovation process
- Assess / Evaluate human perception of a proposed solution

Transversal skills

- Demonstrate a capacity for creativity.
- Make an oral presentation.
- Demonstrate the capacity for critical thinking
- Communicate effectively, being understood, including across different languages and cultures.
- Use a work methodology appropriate to the task.

Teaching methods

Lectures, consultations with lecturers, in-class and out-of-class activities.

Expected student activities

Group work, field work, prototyping, engaging with stakeholders.

A maximum number of 50 students will be accepted in this course, however students are encouraged to attend the first two classes even if there are no spaces left on IS Academia. Please note that those students that have not attended since the first class will not be accepted.

Assessment methods

Presentation of the challenge definition, prototypes and documentation of the project will be graded as follows:

- Mid-term project presentation (group) 25%
- Project result (group) 25%
- Final project presentation (group) 25%
- Reflexive report (individual) 25%

Supervision

Office hours	Yes
Assistants	Yes
Forum	No
Others	external experts

Resources

Virtual desktop infrastructure (VDI)

No

Bibliography

Henchoz, N., & Mirande, Y. (2014). Design for Innovative Technology: From Disruption to Acceptance (1st edition). EPFL Press.

Muratovski, G. (2021). Research for designers: a guide to methods and practice (2. ed.). Thousand Oaks: SAGE Publications.

Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley.

Creswell, J. W., & Creswell, J. D. (2017). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Norman, D. A. (2013). The design of everyday things. MIT Press.

Ressources en bibliothèque

- [Find the references at the Library](#)

Références suggérées par la bibliothèque

- [Storing cultural archives in synthetic DNA / Grooves](#)
- [Digital Experience / Henchoz](#)

Websites

- <http://www.epfl-ecal-lab.ch>

Moodle Link

- <https://go.epfl.ch/MGT-406>