

HUM-397

Design for sustainability I

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| Cursus | Sem. | Type |
|--------------------------------|------|------|
| Humanities and Social Sciences | MA1 | Obl. |
| UNIL - Autres facultés | H | Opt. |
| UNIL - HEC | H | Opt. |

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|----------------------------|---------------------|
| Language of teaching | English |
| Credits | 3 |
| Session | Winter |
| Semester | Fall |
| Exam | During the semester |
| Workload | 90h |
| Weeks | 14 |
| Hours | 3 weekly |
| Lecture | 2 weekly |
| Project | 1 weekly |
| Number of positions | 60 |

Remark

Une seule inscription à un cours SHS+MGT autorisée. En cas d'inscriptions multiples elles seront toutes supprimées sans notification. S'inscrit dans le programme TILT (<https://go.epfl.ch/tilt>).

Summary

This course explores and practices some of the fundamental tools of designing for sustainability with a focus on the sustainability, desirability, and economic viability of solutions.

Content

Design for Sustainability takes the participants through practical concepts, tools and processes to propose design solutions that aim to improve the co-existence of humans, preserve biodiversity, and life-supporting systems. It integrates environmental, economic, social and cultural dimensions.

The course explores approaches at different levels (material, product, product-service system, social innovation, and system transformation). It covers the framing, ideation and prototyping phases of designing for sustainability.

The course builds on the blueprint proposed by the UN's Sustainable Development Goals. It addresses global and local challenges challenging traditional innovation mindsets and business models.

Teams will be made up of engineers (EPFL), industrial designers (ECAL) and social scientists (UNIL) as most complex issues require cross-boundary collaboration.

Sessions in the fall semester are devoted to discover and define a project opportunity through a structured design approach. Sessions will comprise both theoretical approaches and practical activities. During the spring semester, sessions are devoted to the prototyping of a solution through a project-based approach.

As part of the TILT program, there will be one online and asynchronous workshop per semester aimed at strengthening professional competences (interdisciplinary and team work, etc.). Students will be asked to keep a logbook as a basis for their individual reflexive note.

Keywords

design process, desirability, viability, sustainability, prototyping, interdisciplinarity

POLY-perspective :

- perspective interdisciplinaire
- perspective créative

<https://www.epfl.ch/schools/cdh/fr/la-vision-du-cdh-poly-perspective/>

Learning Prerequisites

Required courses

None

Learning Outcomes

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

- Identify opportunities for ill-defined problems through a structured design process
- Apply a sustainability-centered design process
- Develop a project proposal

Transversal skills

- Communicate effectively with professionals from other disciplines.
- Take account of the social and human dimensions of the engineering profession.

Teaching methods

- Lectures
- Exercises
- Fieldwork

Expected student activities

- Work in interdisciplinary teams
- Document and valorize the processes of designing for sustainability

Assessment methods

- Documentation of design process: 40% (group, during the semester)
- Project proposal: 40% (group, end of the semester)
- Reflexive note: 20% (individual, end of the semester)

Supervision

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|--------------|----|
| Office hours | No |
| Assistants | No |
| Forum | No |

Resources

Bibliography

- Ceschin, F., & Gaziulusoy, I. d. (2020). Design for sustainability : a multi-level framework from products to socio-technical systems. Abingdon, Oxon ; New York, NY: Routledge/Taylor & Francis Group.
- Manzini, E. (2015). Design, when everybody designs : an introduction to design for social innovation.

Cambridge, Massachusetts: The MIT Press.

- Papanek, V. J. (1972). Design for the real world; human ecology and social change. New York,: Pantheon Books.
- Thompson, P. B., & Norris, P. E. (2021). Sustainability : what everyone needs to know. New York, NY: Oxford University Press.
- Verganti, R. (2016). Overcrowded : designing meaningful products in a world awash with ideas. Cambridge, Massachusetts: The MIT Press.
- Wizinsky, M. (2022). Design after capitalism : transforming design today for an equitable tomorrow. Cambridge, Massachusetts: The MIT Press.

Ressources en bibliothèque

- [Manzini, E. \(2015\). Design, when everybody designs : an introduction to design for social innovation](#)
- [Verganti, R. \(2016\). Overcrowded : designing meaningful products in a world awash with ideas](#)
- [Thompson, P. B., & Norris, P. E. \(2021\). Sustainability : what everyone needs to know](#)
- [Papanek, V. J. \(1972\). Design for the real world; human ecology and social change](#)
- [Wizinsky, M. \(2022\). Design after capitalism : transforming design today for an equitable tomorrow](#)
- [Ceschin, F., & Gaziulusoy, I. d. \(2020\). Design for sustainability : a multi-level framework from products to socio-technical systems](#)

Websites

- <https://designforsustainability.studio>

Moodle Link

- <https://go.epfl.ch/HUM-397>

Prerequisite for

HUM-398: Design for sustainability II