DH-411

Design research for digital innovation

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Cursus	Sem.	Type
Digital Humanities	MA1, MA3	Obl.
Digital Humanities		Opt.
Minor in digital humanities, media and society	H	Opt.

Language of teaching	English
Credits	5
Session	Winter
Semester	Fall
Exam	During the semester
Workload	150h
Weeks	14
Hours	**5 weekly**
Courses	2 weekly
Exercises	1 weekly
Project	2 weekly
Number of positions	

Summary

How can we turn digital technologies and data into meaningful user experiences? How can we face societal issues raised by digital evolution? This course proposes an immersion in design research, user centered creativity and UX/UI psychology, through project based learning.

Content

Warning: the first three weeks are instrumental to perform the project, as they provide specific tools and the core theoretical background.
Well before the digital age, design has shown its impact on the relation between technology and society. A short travel in time helps to better understand today's digital innovation challenges: Bauhaus, Functionalism, Postmodernism, Radical Design, Hippie Modernism...
We'll then look more closely at design research and associated concepts, such as inclusive design, design thinking, design sprint, speculative design or design fiction. A specific focus on contemporary methodologies of design research will show principles to combine artistic and scientific approaches. With a major objective: undertand how we can generate innovation with sustainable impact.
User experience and observation will be addressed from complementary point of views: on the one hand, psychology, providing scientific experimental tools and theoretical references. On the other hand, design practices, based on empathy and anthropology, to enhance inspiration in the creative process.
Several case studies will enlight the signification of the different theories, methodologies and practices. Design researchers from EPFL+ECAL Lab will unveil insights on recent and ongoing projects: hypothesis, experiences, results, but also unexpected outcomes, difficulties and learnings.
In parallel, the students will work in small groups on an applied project, based on a real ongoing research at the EPFL+ECAL lab. The work aims to put in practice some of the theoretical aspects, as well as to experiment tools for field observation and prototyping. The course will put a special emphasis on each participant's creativity, ability to take in account end users, and hands on design work.

Keywords

User experience, design research, interaction design, prototyping, innovation, ideation, user scenario, user perception, digital heritage, data interaction, inclusive design

Learning Prerequisites

Required courses

None

Recommended courses

(nice to have):

HUM205 - Graphic design I (BA3)
HUM224 - Graphic design II (BA4)
HUM305 - Graphic design III (BA5)
HUM326 - Graphic design IV (BA6)

Important concepts to start the course

None

Learning Outcomes

- Examine basics of design research theories and associated references
- Develop a cricital approach of emerging technology based on user experience approach
- Sketch design research methodology for digital technology
- Discuss basics of user experience & user interface evaluation
- Use visualisation and prototyping techniques for design research
- Perform user-centric approach in a design research project
- Develop Design based creativity

Transversal skills

- Use a work methodology appropriate to the task.
- Communicate effectively with professionals from other disciplines.
- Demonstrate a capacity for creativity.
- Demonstrate the capacity for critical thinking
- Take feedback (critique) and respond in an appropriate manner.
- Make an oral presentation.
- Access and evaluate appropriate sources of information.
- Take account of the social and human dimensions of the engineering profession.
- Collect data.

Teaching methods

- Lectures
- Case studies
- Project

Expected student activities

Class participation
Discussions
Design project development based on an ongoing research topic at the EPFL+ECAL Lab: challenge identification, research question, hypothesis, state of the art, user observation, ideation, prototyping, testing, analysis, results valorization

Assessment methods

- Design research challenge oral presentation 25%

- Project prototype 25%
- Project results oral presentation 25%
- Self reflecting short report 25%

Supervision

Office hours	Yes
Assistant.e.s	Yes

Resources

Bibliography

Y. Mirande, N. Henchoz *Design for Innovative Technology, from Disruption to Acceptance*, EPFL Press/Routledge, 2014

Ressources en bibliothèque

- Find the references at the Library

Websites

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

Moodle Link

- https://go.epfl.ch/DH-411