

### Course description (topics)

Title of the course: Emergent and Experimental Design: Design of AI-Powered Services: A Sustainable Approach				
Tutors of the course, contact details: Pontus Wärnestål, pontus.warnestal@hh.se				
Code: M-ID-301-AL- POWERED- SERVICES	Related curriculum (programme/level): Interaction Design Ma	Recommended semester within the curriculum: 2023/2024/1 // 3rd	Credit: 3	Number of class hours: 42 Student working hours: 48
Related codes	Type: (seminar/lecture/class work/consultation, etc.) class work	Can it be an elective course? No	In case of elective what are the specific prerequisites:	
Course connections (prerequisites, parallelis):				
The subject is only considered completed, if the following courses are also completed:				
Schneider_Emergent and experimental design: Biosphere & Technosphere – Speculative Transgressions in Contemporary Design Culture, 3 credits				
Ferenczi_Emergent and experimental design: Speculative & Critical Design – designing futures and alternate presents, 3 credits				
Molnár_Banga_Emergent and experimental design: Designer self Assesment / Speculative Futures, 3 credits				
Csernátöny_Emergent and experimental design: Participative design and co-creation, 2 credits				
Aim and principles of the course:				
This intensive one-week course aims to provide students with a solid foundation in human-centered design and AI technologies, focusing on sustainability and circular business models. Students will explore key methodologies and best practices to develop user-centric AI services that contribute to people, planet and prosperity.				
Learning outcomes (professional and general competences to be developed):				
Knowledge:				
1. Understand the core principles of human-centered design in relation to AI technologies.				
2. Acquire basic notions of how machine learning and generative AI impact user experience and value-creation.				
3. Grasp ethical considerations and societal implications of AI-powered services, including sustainability aspects.				
Ability:				
1. Apply human-centered design methodologies to develop AI-powered services that address user needs.				
2. Design for, and evaluate, AI-specific implications for user experience, such as adaptivity, personalization, and AI agency.				
3. Apply an innovation framework for using AI in circular business models.				
Attitude:				

1. Assess potential risks and benefits of integrating AI into specific services or contexts, considering sustainable development and circular business aspects.
2. Develop a critical standpoint to design practice and sustainability in the design of AI-powered services.
3. Contribute positively to society and foster a responsible approach to AI service design

Autonomy and responsibility:

1. Independently identify and address ethical and societal challenges in AI-powered service design
2. Proactively consider long-term consequences of AI integration in services
3. Prioritize ethical considerations and user needs in design practice

Topics and themes to be covered in the course:

1. Introduction to Human-Centered Design and AI Technologies
  - Core principles of human-centered design in the context of AI
  - Overview of AI technologies and their relation to user experience and value-creation
2. Machine Learning and Generative AI in Service Design
  - Basic notions of AI technologies, such as machine learning and generative models from a human-centered design perspective
  - AI impact on user experience – prediction, adaptivity, and AI agency
3. Ethical Considerations and Societal Implications
  - Ethical aspects of AI-powered services
  - Sustainability considerations and societal implications
4. Human-Centered Design Methodologies for AI-Powered Services
  - Reflection on the future of design practice; AI as a new design material
  - Applying user-centric methodologies in AI service design
  - Specific prototyping considerations
  - Designing for adaptivity, personalization, and AI agency
5. Innovation Framework for AI in Circular Business Models
  - Principles of circular business models
  - Integrating AI technologies in sustainable and circular business solutions
6. Assessing Risks and Benefits of AI Integration
  - Evaluating potential risks and benefits of AI-powered services in sustainable contexts
  - Balancing technological capabilities, user expectations, and sustainability goals
  - Emphasizing some pitfalls in the design of AI-powered services

Assessment:

(in case of more teachers are involved and they evaluate separately, separate assessments per teacher needed)

Requirements to be met:

- Completion of a group short project, focusing on the design of an AI-powered service with a human-centered and sustainable approach.

Method of assessment:

- Oral presentation of the project at the end of the week, including a practical demonstration of the AI service concept and its sustainable aspects.

Assessment criteria (what is taken into consideration in the assessment):

1. Application of human-centered design principles and methodologies
2. Integration of AI technologies and their impact on user experience and value-creation
3. Addressing ethical considerations and societal implications
4. Incorporation of sustainable development and circular business aspects
5. Quality of the oral presentation and the ability to effectively communicate the project concept and design decisions
6. Teamwork and collaboration throughout the project

How is the mark calculated (how is the result of each assessed requirement reflected in the final mark? {e.g. proportions, points, weights}):

- Each of the six assessment criteria will be evaluated on a scale of 1 to 10, with 1 being the lowest and 10 being the highest.
- The final mark will be calculated by adding the scores of all criteria, resulting in a maximum possible score of 60.
- The final mark will then be converted to a percentage by dividing the total score by 60 and multiplying by 100.

To complete the course you have to deliver the following artefacts:

- Presentation of concept or prototype defined by the lecturer
- PDF export of the prototype/presentation
- A 1 minute video (16:9) that demonstrates your concept. The minimum resolution is Full HD, format is MP4. The video should be self explanatory using narration and subtitles/labels. The video can be recorded digitally or using any device available (e.g. your own phone).
- A printable file format for a poster (.PDF) that describes your project and the design process you've used through. A template will be provided for this purpose.
- 1x "hero image" that demonstrates your end result. (preferably without additional text)  
Size: 2880x1440
- 1x "square image", that demonstrates your end result. (preferably without additional text)  
Size: 1080px by 1080px

Required Literature:

- Amershi, S., Weld, D., Vorvoreanu, M., Fournery, A., Nushi, B., Collisson, P., Suh, J., Iqbal, S., Bennett, P. N., & Inkpen, K. (2019). *Guidelines for human-AI interaction*. 1–13.
- Bergström, E., & Wärnestål, P. (2022). Exploring the Design Context of AI-Powered Services: A Qualitative Investigation of Designers' Experiences with Machine Learning. I H. Degen & S. Ntoa (Red.), *Artificial Intelligence in HCI* (s. 3–21). Springer International Publishing.
- Shneiderman, B. (2020). Human-Centered Artificial Intelligence: Reliable, Safe & Trustworthy. *International Journal of Human-Computer Interaction*, 36(6), 495–504.
- Xu, W., Dainoff, M. J., Ge, L., & Gao, Z. (2023). Transitioning to human interaction with AI systems: New challenges and opportunities for HCI professionals to enable human-centered AI. *International Journal of Human-Computer Interaction*, 39(3), 494–518.

**OTHER INFORMATION:**

Between 3<sup>rd</sup> and 8<sup>th</sup> September in room B\_106

On Monday, Tuesday, Wednesday from 10am to 6pm, on Thursday from 1.40pm to 4.30pm, on Friday from 10am to 4.30pm

Recognition of knowledge acquired elsewhere/previously/validation principle:

- No exemption from attending and completing the course will be granted,
- Exemptions from the acquisition of certain competences and the completion of certain tasks may be granted,
- some tasks may be replaced by other activities,
- full exemption may be granted.

Out-of-class consultation times and location: