

Course Syllabus - Design Thinking Workshop

Program description:

Design Thinking is a mindset and innovation method that is currently on the agenda of many companies and researchers. The core of Design Thinking is customer centricity: The customer/user is placed at the center of action. Customer centricity provides a clear focus and makes it possible to structure the innovation development process of products or services. Design Thinking focuses on four steps on the way to an innovative solution: The first two steps involve researching and understanding target groups and their needs in creative and structured work processes. Next, a variety of innovative solutions are developed using different creative methods to visualize ideas (ideation). Based on the ideation, the ideas are transformed into prototypes that are tested directly with customers/users. These steps are to be understood as an iterative process in which the individual phases can be repeated in several loops. The approach is not limited to the development and innovation of products or services but can be used more generally to analyze problems and derive innovative solutions. This makes the method suitable for use in both business and scientific environments. The goal of design thinking is to solve complex problems in a creative, structured, and user-centered way.

Course content:

The aim of the seminar is to teach participants the Design Thinking process in a practical way, with a special focus on the conception and presentation of software solutions based on Artificial Intelligence (AI). Through a mixture of short theory sessions, dynamic individual and group activities, and reflection phases, participants will be able to apply Design Thinking in the context of planning effective AI-based software projects. The course begins with a basic introduction to design thinking, followed by an in-depth look at each phase of the process, with a particular focus on developing a pitch for an AI application. Participants will first dive into comprehensive market and technology research to gain a solid understanding of the current AI technology landscape, as well as the requirements and challenges of potential users. This step is critical to defining the target audience and understanding their needs. Participants then distill their findings into precise user requirements and develop a strong value proposition by clearly defining what problem their AI software solves and how it differs from existing offerings. In the creative phase that follows, participants brainstorm different ideas for the functionality and design of the AI software and select the most promising ideas for further development. Simple prototypes of the solutions are developed to illustrate the concepts and gather valuable feedback through testing with real users. This feedback is used to iteratively adapt and refine the solutions to ensure the best fit with user needs. With a deep understanding of user needs and a carefully developed AI software solution, participants then prepare a convincing pitch. They focus on telling a compelling story that highlights the value of their solution, supported by visual aids and clear communication of the value proposition. Through this structured and application-oriented approach, participants will learn how to effectively use design thinking to conceptualize and effectively present innovative AI software solutions. The course emphasizes the importance of user-centricity, creative problem solving, and iterative development to ensure that the solutions developed deliver real value.

Competence goals:

Students who successfully complete the course will understand agile innovation development processes using the Design Thinking methodology. In addition, students will gain the following knowledge and skills:

Knowledge:

- Iterative development process of innovations by using Design Thinking
- Different process stages, tools and methods to define, analyze and understand a target group and its problem as a customer of a product and/or service as well as different methods to create customer-centred, innovative solutions in an iterative way.

Skills (theoretical + practical):

- Application of the methods and tools in a Design Thinking process within an interdisciplinary team
- Creative preparation and visual presentation of a developed innovation/business idea
- Time management
- Fair and respectful communication

Methods:

Lectures, teamwork in small groups under instruction, several creativity techniques, methods of prototyping, feedback round/group discussions, presentation/pitching of ideas

Prerequisites:

Curiosity and openness for working in an interdisciplinary team and for learning creative innovation methods. Expertise from different disciplines (engineering, economics, IT, social sciences or natural sciences) can add important input to the innovation process, so that students from all these disciplines can participate in the workshop.

Lecturer

Nils Herterich (B.Sc. Electrical Engineering/ M.Sc. Computer Science)

Literature for Further Reading:

- TBD

Exam and grading:

The basis for grading is as follows:

- Individual active participation / engagement
- Workshop results / pitch presentation (80%)
- Additional interdisciplinary assessed assignment in the course of the program (20%).
- Prerequisite for grading is an individual active participation and engagement with course content

Duration

- 1 Day Introduction to the methods (June 2, 2025)
- 4 Days intensive workshop (June 3 to June 6, 2025)

Frequency

Yearly

Course Language

English