



Chair of Information Systems -
Innovation & Value Creation



Friedrich-Alexander-Universität
Fachbereich Wirtschafts- und
Sozialwissenschaften | WiSo

Designing Technology

Syllabus

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Case Partner:

ROBOYO 



www.wi1.fau.de

Course Overview

Course Name: Designing Technology (DT) (57073)
→ link to [UnivIS](#)

Degree Programmes:

- International Information Systems (WPF WING-MA ab 1)
- Wirtschaftsingenieurwesen / Industrial Engineering (WPF WING-MA 1-3)
- Maschinenbau / Mechanical Engineering (WPF MB-MA-IP 2)

Chair: Prof. Dr. Kathrin Möslein

Lecturers: Dr. Tim Posselt | tim.posselt@fau.de
Julius Kirschbaum | julius.kirschbaum@fau.de
Patrick Meyer | pat.meyer@fau.de

Location: Virtual room via Zoom Meeting:
(Link will be communicated via StudOn)

	Session	Date	Time
Location and Time:	Session I <i>Course Kick-Off & Case Introduction (ROBOYO)</i>	25.10.21	13:15 – 14:45 15:00 – 16:30
	Session II <i>PM & SCRUM</i>	08.11.21	13:15 – 14:45 15:00 – 16:30
	Session III <i>DSR 1</i>	15.11.21	13:15 – 14:45 15:00 – 16:30
	Session IV <i>Presenting & Writing</i>	22.11.21	13:15 – 14:45 15:00 – 16:30
	Session V <i>DSR 2</i>	29.11.21	13:15 – 14:45 15:00 – 16:30
	Session VI <i>Digital Innovation</i>	06.12.21	13:15 – 14:45 15:00 – 16:30
	Session VII <i>Mid-Term-Presentation</i>	20.12.21	13:15 – 14:45 15:00 – 16:30
	Session VIII <i>Final Presentation</i>	28.02.22 <i>(preliminary)</i>	13:15 – 16:30
	Hand-In for Written Assignment	14.03.22	23:55

Type of Interaction:

- Designing Technology is a **small course** with about 25 students.
- This course is brought to you in **virtual sessions of both synchronous and asynchronous form**.
- The course has a **lecture-guided format with a project-based application** of learnings.

- The course is structured by **synchronous** lectures once a week, in which key concepts for successful completion of the course will be explained.
- In addition, **knowledge bites** are **provided online**, which need to be absorbed asynchronously and will then be discussed during the synchronous lectures.
- Moreover, students will be divided into teams to work on projects. Here you will be able to work **asynchronously**, meaning the timing of the completion of tasks is at your own disposal and only needs to be coordinated within your team and with your mentors from our industry partner „ROBOYO“.
- Solution development sessions are offered on demand virtually or **in person** at WiSo (Lange Gasse 20).

The course covers the process of designing innovative artefacts to extend human as well as organizational capabilities and to solve problems within organizations and industries.

For a sound understanding of both social and technological aspects of various innovative technologies, students will primarily follow the design science research method, build artefacts and evaluate them, around a given theme. Understanding the design science paradigm and its application will enable students to develop knowledge on the management and use of information technology for managerial purposes and effectively communicate this knowledge.

Students will also be introduced to innovative technologies in the context of artificial intelligence and augmented reality that can link and enable different types of innovative technologies across the boundaries of socio-technical systems. Students will adopt this knowledge in practical work on design problems, which will be related to the usage of robotic process automation.

They will also be introduced to social and technological theories and literature such as design theory, systems theory, communication theory and basics of open innovation and user innovation. Students will use this knowledge on current technologies and theory to work on a (design science) project that solves human or organizational problems.

The course requires analytical thinking, where students can identify and clearly articulate problems that they would like to solve and the process of solution-finding. While existing technical knowledge from students is welcome, it is not a prerequisite for the course. Students can also contribute by conducting theoretical/empirical research, along with developing IT artefacts. To conclude, the course offers a balance between creativity and scientific thinking, which can be of immense help to students seeking to learn either skill or both.

Content Description:

Qualification Objectives:

The students:

- can develop knowledge on the management and use of information technology for managerial purposes
- can differentiate between and assess the most important developments on the web
- develop a research design for a design science project
- discuss theories, as well as the design and the progress of their project

Literature: We use three different kinds of materials: (1) lecture slides, (2) input from case partner and (3) scientific articles

Group Size: The course is designed for a maximum of 25 participants.

Registration Dates:	Earliest	Latest
	01.10.2021 - 00:00	25.10.2021 - 23:55

[Link to course](#)

[Link to join course \(registration starts on October 1st\)](#)

StudOn: We offer you a first get to know session of the course at the kick-off event. You will still be able to withdraw from the course, if you decide to. For those who want to take the course, you will be accepted on StudOn afterwards. In case we have too many applicants, a set of 25 randomly chosen students will be accepted, although this has never been an issue, yet.

Examination: The course grade will be determined based on the following mode of evaluation:

- Research Project (70%) (team effort) (70732)
- Written Assignment (30%) (individual grading) (70733)

Examination Dates: (Deadlines)	Research Project	Written Assignment
	28.02.2022 - 13:15 via upload on StudOn virtual examination	14.03.2022 - 23:55 via upload on StudOn hand-in

Participation Requirements:

- Solid command of English (all lectures and content will be in English)
- This class demands the continuous participation in the **virtual** class discussions.

Credit Points / Contact Hours: 5 ECTS

Reading:
(Recommended)

- Fichman, R., Dos Santos, B., & Zheng, Z. (2014). Digital Innovation as a Fundamental and Powerful Concept in the Information Systems Curriculum. *MIS Quarterly: Management Information Systems*, 38, 329–353.
- Hevner, A.R., March, S.T., Park, J., Ram, S., 2004. Design Science in Information Systems Research. *MIS Q.* 28, 75–105.
- Kroes, P. (2010). Engineering and the dual nature of technical artefacts. *Cambridge Journal of Economics*, 34 (1), 51–62. Hevner, A. R., March, S. T., Park, J. & Ram, S. (2004). Design Science in Information Systems Research. *MIS Quarterly: Management Information Systems*, 28 (1), 75-106.
- Peffers, K., Tuunanen, T., Rothenberger, M.A., Chatterjee, S., 2007. A Design Science Research Methodology for Information Systems Research. *J. Manag. Inf. Syst.* 24, 45–78.
- The PMBOK® Guide - A guide to the Project Management Body of Knowledge,

Notes:

This course will be managed via the **StudOn**. All lecture slides and readings will be deposited there.

Plagiarism:

What is plagiarism?

- Plagiarism is the unauthorized use or close imitation of the language and thoughts of another author and the representation thereof as one's own original work

There is a zero tolerance policy for plagiarism!

- Each assignment will be checked for plagiarism using a variety of methods
- Any case of plagiarism will be reported to the board of examiners

Consequences of plagiarism

- The final grade will be a 5.0
- The paper containing suspected plagiarism will be forwarded to the board of examiners, who will decide about further consequences. Plagiarism is a serious offence that can lead to severe consequences like a removal from the register of students