LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Extended Reality (XR) - fortsättningskurs
Extended Reality (XR) - Continuation Course

MAMN65, 7,5 credits, A (Second Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED C/D
Date of Decision: 2023-04-18

General Information

Main field: Virtual Reality and Augmented Reality.
Compulsory for: MVAR2
Elective for: C5-da, D5-bg
Language of instruction: The course will be given in English

Aim

Extended reality (XR) is an umbrella term that refers to virtual reality (VR), augmented reality (AR) and related technologies that aim at delivering computer-generated, spatial stimuli to the senses of a human user. The purpose of this course is to deepen the students' understanding for how the complex interplay between emerging technologies and human aspects (e.g. ethics and human factors) affect XR and its use in different fields such as learning, sustainability and health,

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- show in-depth knowledge on ethical aspects, individual as well as societal, connected to the application of XR technology.
- demonstrate knowledge about human factors issues related to XR technology.
- demonstrate knowledge on how XR technology can be applied in research, industry, culture and public sector.

Competences and skills
For a passing grade the student must

- be able to inform themselves on relevant emerging technologies and evaluate their eventual usefulness for different types of XR systems and applications
- be able to perform an ethical analysis of an existing or intended XR system
- demonstrate the ability to plan research endeavors that involves XR technology.

Judgement and approach
For a passing grade the student must

- demonstrate a sensitivity to the opportunities and threats of applying XR technology in different fields.

Contents

XR ethics, ethical analysis, human factors, emerging technologies, XR applications, XR research design.

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)
Assessment: Written individual assignments, participation in student led seminars, and project report. For the final grade all parts must be approved.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts
Code: 0122. **Name:** Project Work.
Credits: 3,5. **Grading scale:** UG. **Assessment:** Approved project work and approved project report.
Code: 0222. **Name:** Student-led Seminar.
Credits: 1,5. **Grading scale:** UG. **Assessment:** Approved seminar.
Code: 0322. **Name:** Individual Assignments.
Credits: 2,5. **Grading scale:** UG. **Assessment:** Approved written assignments.

Admission

Admission requirements:

- MAMF45 Virtual Reality in Theory and Practice or MAMN60 Augmented Reality - Interaction

Assumed prior knowledge: A basic course in interaction design.
The number of participants is limited to: 40
Selection: Students on the International Master's programme in Virtual Reality and Augmented Reality fulfilling the prerequisites are granted admission. Other students: Completed university credits within the programme. Priority is given to students enrolled on programmes that include the course in their curriculum.

Reading list

- Thomas Taro Lennerfors: Ethics for engineers. Studentlitteratur, 2019.
- Research articles central to the course.

Contact and other information

Course coordinator: Mattias Wallergård, mattias.wallergard@design.lth.se
Teacher: Günter Alce, gunter.alce@design.lth.se
Examinator: Joakim Eriksson, joakim.eriksson@design.lth.se
Course homepage: https://www.eat.lth.se/english/courses/
Further information: 80% attendance to course activities is required. Furthermore, participation at one's own student led seminar and project presentation is compulsory.