HALMSTAD UNIVERSITY
Phone +46 35 16 71 00 - www.hh.se
School of Information Technology

Design for Extended Realities 3 credits

Design för förstärkta verkligheter 3 hp

Second cycle
Main field: Informatics, Second cycle, has only first-cycle course/s as entry requirements (A1N)
Syllabus is adopted by the Research and Education Board (2022-04-28) and is valid for students admitted for the autumn semester 2022.

Placement in the Academic System

The course is given as a single subjekt course.

Prerequisites and Conditions of Admission

Degree of Bachelor or Degree of Bachelor of Science in Engineering or the equivalent of 180 Swedish credit points or 180 ECTS credits at an accredited university. Applicants must have written and verbal command of the English language equivalent to English course 6 in Swedish Upper-Secondary School.

Course Objectives

The course introduces the challenges and opportunities that augmented reality, mixed reality, and virtual reality (collectively XR, extended reality) provide to designers of services and experiences. It offers students a hands-on introduction to methods, processes, and best practices used in the design industry to design for the reality-virtuality continuum considering the role of context and proprioception, a person's sense of presence and agency, and issues in access and usability in XR.

Following successful completion of the course the student should be able to:

Knowledge and understanding

- describe the opportunities and challenges that designing Extended Realities (XR) services and experiences entails
- discuss and explain the fundamental differences between designing for screens and designing for XR environments

Skills and ability

- explore, prototype, and implement XR solutions that respond to the design problems at hand
- adopt and use approaches, methods and techniques that best allow to frame and solve issues of human-information interaction in XR environments

Judgement and approach

- reflect upon and problematize the use and consequences of adopting XR in services and experiences in terms of agency, sense of presence, usability, and access
- critically weigh the adoption of XR solutions against the use of other digital artifacts or blended environments

Primary Contents

The course consists of three parts that introduce and explore the design of extended realities along different axes: a framing perspective, illustrating what XR is, how it has evolved, and how designing XR differs from traditional digital design practices; a methodological perspective, detailing those XR-specific theory and methods that address XR design issues; and a practical perspective, exploring best practices and concrete design activities through direct application of these to a case.
Each part consists of lectures, readings, supervision, and an assignment centered on the specific topics discussed in the part of the course. Assignments are carried out by students individually and will be peer-reviewed first and then discussed with the teachers and the class using a design critique approach.

Teaching Formats

The course consists of online lectures, audio / video materials, and guest lectures via the university's learning platform providing hands-on insights on the theory and practice of designing XR environments, and of individual assignments supported by supervision. The teaching is conducted in English.

Examination

The overall grades of Fail or Pass will be awarded for the course.
The examination consists of three individual written assignments.

Name of the test		Grading
Written Assignment I	1 credits	U/G
Written Assignment II	1 credits	U/G
Written Assignment III	1 credits	U/G

If a disabled student has been granted learning support through a decision by Halmstad University, the examiner may decide on an adapted or alternative form of assessement for this student.

For elite sports students according to Riktlinjer för kombinationen studier och elitidrott vid Högskolan i Halmstad, DNR: L 2018/177, the examiner has the right to decide on an adapted examination component or let the student complete the examination in an alternative way.

Course Evaluation

Course evaluation is part of the course. This evaluation should offer guidance in the future development and planning of the course. Course evaluations should be documented and made available to the students.

Course Literature and Other Study Resources

Hillman, C. *UX for XR – User Experience Design and Strategies for Immersive Technologies*. Apress. 2021 (selected chapters)

Papagiannis, H. *Augmented Human*. O'Reilly Media, 2017 (selected chapters)

Wentworth, J. and Hoshi, K. *Human-Experiential Design of Presence in Everyday Blended Reality*. Springer, 2016 (selected chapters)

Referenslitteratur

Craig, A. B. *Understanding Augmented Reality – Concepts and Applications*. Morgan Kaufmann. 2013

Jerald, J. T*he VR Book – Human-Centered Design for Virtual Reality*. Morgan & Claypool. 2015

Peddle, J. *Augmented Reality – Where We Will All Live*. Springer. 2017