UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Master Degree Project in Virtual Product Realization A2E

30 credits

Course code: VP720A
Version number: 9
Valid from: 1 January 2026
Ratified by: Curriculum Committee for Engineering Science
Date of ratification: 22 May 2025

1. General information about the course

The course is provided by the University of Skövde and is named Master Degree Project in Virtual Product Realization A2E (Examensarbete i virtuell produktframtagning A2E). It comprises 30 credits and is a second-cycle course. The level of progression is A2E.

The course is a part of the main field of study in Virtual Product Realization. The disciplinary domain of the course is Technology.

2. Entry requirements

A Bachelor's degree equivalent to a Swedish kandidatexamen of 180 credits, within the main fields of integrated product development, production engineering, automation engineering, mechanical engineering or information technology (or the equivalent).

Additionally, the student requires 60 credits of passed courses at the second-cycle level within the virtual product realization subject area, of which 6 credits are from the second year of the program, including having passed VP773A Design and Development Project I A1N and passed VP761A Research Methodology and Communication A1F (or the equivalent).

A further requirement is proof of skills in English equivalent of studies at upper secondary level in Sweden, known as the Swedish course English 6 or English level 2 (or the equivalent). This is normally demonstrated by means of an internationally recognized language test, e.g. IELTS or TOEFL.

3. Course content

The course consists of research work in the subject area of virtual product realization. The research work is related, but not limited to, production systems, product design, industrial automation, industrial ergonomics, ergonomics simulation, discrete event simulation, system dynamics, simulation-based optimization, industrial information systems, data collection, data processing, data storage and data mining, computational intelligence, product lifecycle and sustainable development.

4. Objectives

After completed course the student should be able to:

- express themselves clearly and scientifically both orally in presentation and in a detailed written report,
- explain various aspects of sustainable development in relation to their work,
- justify how their project takes due consideration of ethical concerns, gender related concerns and wider societal concerns,
- evaluate, critically assess and reflect upon a range of relevant research papers (including current research and development),
- integrate a range of acquired knowledge and utilize it in the formulation, analysis and solving of problems within the project in a scientific way,
- critically, independently and creatively identify and formulate issues within the project, identify gaps in their own knowledge, create plans for how to address these issues,
- critically reflect upon the results of their own project and how they relate to other scientific work in the field,
- choose, argue for and apply a suitable scientific method to solve the proposed research question,
- motivate the decisions made within the project and defend the validity of the results,
- through the implementation of a project show an appropriate depth of knowledge within the subject of virtual product realisation,
- through the implementation of a project, within a limited time frame, demonstrate the skills required to work within research and development.

5. Examination

The course is graded A (Excellent), B (Very good), C (Good), D (Satisfactory), E (Sufficient) or F (Fail).

After course is completed access to additional time for supervision for completion of degree project is limited. Time for supervision is decided by the school and admitted at most until one year after end of course.

The examinations of the course consist of the following modes of assessment:

- **Final report**
  25 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Final presentation**
  5 credits, grades: G/U

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of lectures and supervision.

The teaching is conducted in English.

7. Course literature and other educational materials

Reading material and research papers as provided by the instructor.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.