UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Virtual Intelligent Machines A1N

6 credits

Course code: VP711A
Version number: 9
Valid from: 1 January 2026
Ratified by: Curriculum Committee for Informatics
Date of ratification: 22 May 2025

1. General information about the course

The course is provided by the University of Skövde and is named Virtual Intelligent Machines A1N (Virtuella intelligenta maskiner A1N). It comprises 6 credits and is a second-cycle course. The level of progression is A1N.

The course is a part of the main field of study in Virtual Product Realization. It can also be a part of the main field of study in Informatics. 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).

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 introduces the idea of digital twins and their modeling. Students learn about machine vision and artificial intelligence algorithms which are used to demonstrate digital twin concept. The course will have a practical focus where the skills of algorithm development and integration are developed.

4. Objectives

After completed course the student should be able to:

Knowledge and understanding

- show general knowledge about the history, types and benefits of digitalization,
- define major trends of digitalization in the industry,

Skills and Abilities

- design and build a digital twin using machine vision and artificial intelligence algorithms,

Evaluation ability and approach

- reflect on the potential impact of digitalization on society, companies and individuals.

5. Examination

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

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

- **Project with written report and oral presentation**
  6 credits, grades: A/B/C/D/E/F

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 laboratory sessions and lectures.

The teaching is conducted in Swedish. Some teaching in English may occur.

7. Course literature and other educational materials

Compendium 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.