UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Systems Thinking A1N

6 credits

Course code: VP701A
Version number: 6
Valid from: 1 July 2022
Ratified by: Curriculum Committee for Engineering Science
Date of ratification: 6 December 2021

1. General information about the course

The course is provided by the University of Skövde and is named Systems Thinking A1N (Systemtänkande 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. This is normally demonstrated by means of an internationally recognized language test, e.g. IELTS or TOEFL.

3. Course content

The course provides knowledge of parts within the broad area of "Systems Thinking" as well as basic skills in Systems Dynamics simulation. Through analysis and modeling of complex dynamic systems in areas such as ecology, economy and industry, the course provides a breadth, while providing a deeper understanding for the essentialness of a structure for a system's behavior. Systems Thinking presents methods for managing dynamic complex problems (even of softer characteristics, i.e. in order to change behavior). The course prepares students for future work by presenting the tools to manage, among other things, structural problems and identify effective policies to achieve profound results.

4. Objectives

After completed course the student should be able to:

- explain the importance of systems thinking as well as explain and independently analyze complex phenomena through systems thinking,
- apply the tools within systems thinking in order to create a holistic understanding of a system / process,
- develop, simulate and analyze basic System Dynamics models and reproduce research results from relevant articles using a software tool,
- assess and execute own analysis of research articles and their results in Systems Dynamics, and
- critically and systematically assess knowledge and model, simulate, predict and evaluate events on the basis of relevant information.

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 work**
  3 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Assignments**
  2 credits, grades: G/U
- **Laboratory assignments**
  1 credit, 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 seminars/group discussions, project work, lectures, presentations, group assignments, exercises, supervision and workshops.

The teaching is conducted in English.

7. Course literature and other educational materials

According to the teacher's reference.

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.