1 Name, Scope and Level of the Course
The course is provided by the University of Skövde and is named Systems Thinking A1N. It comprises 6 credits and is on advanced level. The level of progression of the course is A1N.

2 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.

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 Forms of Teaching
The teaching comprises lectures, group assignments, supervision, project work, presentations, seminars/group discussions, workshops and exercises.

The teaching is conducted in English.

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

Registration of examination results:

<table>
<thead>
<tr>
<th>Name of examination</th>
<th>Credits</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project work¹</td>
<td>3 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Assignments</td>
<td>2 credits</td>
<td>G/U</td>
</tr>
<tr>
<td>Laboratory assignments</td>
<td>1 credits</td>
<td>G/U</td>
</tr>
</tbody>
</table>

¹ Determines the final grade of the course.

Students with a permanent disability who have been approved for special educational support may be offered adapted or alternative examinations.
6 Admission Requirements
The prerequisite for this course are a Bachelor degree of at least 180 higher education credits (equivalent to 180 ECTS) within the fields of integrated product development or production engineering or automation engineering or mechanical engineering or information technology or similar.

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

7 Subject, Main Field of Study and Disciplinary Domain
The course forms a part of the academic subject area of Virtual Product Realization. The course is a part of the main field of study in Virtual Product Realization at the University of Skövde. The course can also be a part of the main field of study in Informatics. The disciplinary domain of the course is Technology.

Every course at the University of Skövde belongs to a subject. The division of subjects is used for follow-up and quality assurance. A main field of study is an area in which a degree can be awarded. Disciplinary domain is a division which is used by the government for the allocation of resources for studies at basic level and advanced level.

8 Approval of Course and Course Syllabus
The course was approved by the Curriculum Committee for Engineering Science on 5 February 2018. This course syllabus was approved by the Curriculum Committee for Engineering Science on 5 February 2018. It is valid from 1 July 2018.

9 Overlapping with Another Course
This course cannot constitute a part of a degree also containing a course the content of which is totally or partly equivalent to the content of this course.

10 Additional Information
Further information will be available on the university’s website before a course is given.

National and local regulations for higher education are available on the university’s website.

Upon completion of the course there will be a follow-up. The main purpose of this follow-up is to contribute to improvements of the course. The students’ experiences and views constitute one of the criteria for the follow-up and are gathered by means of course evaluations. The students will be informed of the results of the follow-up and any decisions regarding actions that are to be taken.

11 Course Literature and Other Educational Materials
According to the teacher’s reference.