



## COURSE SYLLABUS

### Surface design, 6 credits

*Ytmodellering, 6 högskolepoäng*

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<b>Course Code:</b>	TYMN16	<b>Education Cycle:</b>	First-cycle level
<b>Confirmed by:</b>	Dean Dec 1, 2015	<b>Disciplinary domain:</b>	Technology (95%) and social sciences (5%)
<b>Valid From:</b>	Jan 1, 2016	<b>Subject group:</b>	MT1
<b>Version:</b>	1	<b>Specialised in:</b>	G2F
<b>Reg number:</b>	JTH 2015/4763-313	<b>Main field of study:</b>	Mechanical Engineering

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### Intended Learning Outcomes (ILO)

After completing the course, students shall:

Knowledge and understanding

- show understanding of surface modeling and its role in industrial operations, including knowledge of the area's basic concepts, applicable methodologies and models
- show understanding of determining the form of a product by surface modeling from a design basis
- show understanding of the consequence of surface elements in transferring between different softwares
- show understanding of the classification of surfaces.

Skills and abilities

- show skills in methodology and tolerance adaptation regarding surface modeling
- show ability to produce realistic images from a CAD surface.

Judgement and approach

- show ability to judge the quality of a 3-dimensional CAD model, using different evaluation tools.

### Contents

Students gain the knowledge to do concept modeling of a product or a technical function connected to a design surface. The student will also use the software with which they shall be able to create complex geometries based on surfaces.

The course includes the following elements:

- Theoretical understanding of geometrical structure around curves and surfaces – geometry assured CAD base
- Modeling techniques-methods, tools, CAD softwares
- Materials and manufacturing processes which are directly linked to the geometry assured CAD base

- File transfer of neutral surface formats
- Concept modelling
- Design models
- Shape Determination (industry requirements, class A surfaces)
- Tolerances
- 3D-scanning (Reversed engineering)
- Rendering (Keyshot)

### **Type of instruction**

The teaching is conducted in English.

### **Prerequisites**

General entry requirements and completed courses 60 credits in first cycle, included Computer Supported Engineering Design 6 credits, Manufacturing Technology 9 credits and Machine Elements 6 credits (or the equivalent).

### **Examination and grades**

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Project work <sup>1</sup>	4 credits	5/4/3/U
Assignments	2 credits	U/G

<sup>1</sup> Determines the final grade of the course, which is issued only when all course units have been passed.

### **Course literature**

Literature will be announced one month before the course starts.