



## COURSE SYLLABUS

# Design and Process Planning in Parametric CAD, 6 credits

*Konstruktion och beredning i parametrisk CAD, 6 högskolepoäng*

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<b>Course Code:</b> TKCN16	<b>Education Cycle:</b> First-cycle level
<b>Confirmed by:</b> Dean Feb 9, 2015	<b>Disciplinary domain:</b> Technology (95%) and social sciences (5%)
<b>Revised by:</b> Director of Education Jun 16, 2016	<b>Subject group:</b> MT1
<b>Valid From:</b> Jan 1, 2017	<b>Specialised in:</b> G2F
<b>Version:</b> 2	<b>Main field of study:</b> Mechanical Engineering
<b>Reg number:</b> JTH 2016/02433-313	

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### Intended Learning Outcomes (ILO)

After successful course, the student shall

Knowledge and understanding

- have knowledge about CAD and its role within the industry, knowledge about concepts within the field, and applicable methods and models
- demonstrate an understanding of CAD models from the theoretical perspective
- have knowledge about tools for the creation of hybrid models, sheetmetal and CAM processing
- demonstrate an understanding of product modeling in SME:s

Skills and abilities

- demonstrate the ability to specify and document models and drawings in CAD
- demonstrate an advanced ability to use form and positional tolerances on drawings
- demonstrate the ability to parameterize and control CAD models
- demonstrate the ability to create CAD models suitable for molds
- demonstrate the ability to create written reports describing design problems and their solutions

Judgement and approach

- demonstrate the ability to assess the suitability of a part for manufacturing

### Contents

Course participants will use their knowledge within manufacturing technology and machine elements to be able to work more effectively with modelling and get a better understanding of the preparation steps in CAD. Course participants will also be able to make drawings of higher level. Methods regarding variant design in organizations are also introduced.

The course includes the following topics:

- Solid- and hybrid modeling
- Parameter structure of CAD models
- Basic modeling for understanding molds/toolings
- Sheetmetal design
- CAM processing

- Tolerancing
- Modeling methods: Design by features, Bottom-up modelling / Top down modelling, Drafting

### **Type of instruction**

The course contains lectures and individual assignments. There is also a project for group submission.

The teaching is conducted in English.

### **Prerequisites**

General entry requirements and completed courses 60 credits in first cycle, including 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**

Course literature is established one month before the course starts.