

## CAD Systems

Code: MK3CADRG04GX17-EN

ECTS Credit Points: 4

Evaluation: mid-semester grade

Year, Semester: 2<sup>nd</sup> year, 1<sup>st</sup> semester

Its prerequisite(s): Technical Drawing and Basics of CAD

Further courses are built on it: Yes/No

Number of teaching hours/week (lecture + practice): 0+3

### Topics:

Computer aided product development. Product Lifecycle system. Introduction to parametric modelling systems. Properties of parametric modelling. Creating profiles and sketches (sketch, drawing tools, geometrical and dimensional constraints). Using features (protusion, revolved protusion, holes, chamfers, fillets, etc.). Model history. Assembly designing (assembly configurations, exploded views). Creating technical drawings (view generation from parts, dimensions, section views, part list, symbols). Special environments (sheet models, welding design). Handling variables. Creating part and assembly families. Importing standard parts.

### Literature:

*Compulsory:*

- <https://www.ptc.com/en/cad/creo>
- [www.solidedge.com](http://www.solidedge.com)
- Getting Started with Solid Edge Version 20, ©2007 UGS Corp.

### Schedule

#### 1<sup>st</sup> week Registration week

#### 2<sup>nd</sup> week:

##### Lecture:

**Practice:** Computer aided product development. Product Lifecycle system. Introduction to parametric modelling systems. Properties of parametric modelling. Solid part creation.

#### 4<sup>th</sup> week:

##### Lecture:

**Practice:** Usage of features I.: protrusion, revolved protrusion. Practical examples.

#### 6<sup>th</sup> week:

##### Lecture:

**Practice:** Usage of features III.: holes, chamfers, fillets. Practical examples.

#### 3<sup>rd</sup> week:

##### Lecture:

**Practice:** Creating profiles and sketches (sketch, drawing tools, geometrical and dimensional constraints).

#### 5<sup>th</sup> week:

##### Lecture:

**Practice:** Usage of features II.: cutout, revolved cutout. Practical examples.

#### 7<sup>th</sup> week:

##### Lecture:

**Practice:** Usage of features IV.: creating ribs, web networks, thin wall, patterns. Practical examples. **1<sup>st</sup> test.**

<b>8<sup>th</sup> week: 1<sup>st</sup> drawing week</b>	
<b>9<sup>th</sup> week:</b>	<b>10<sup>th</sup> week:</b>
<b>Lecture:</b>	<b>Lecture:</b>
<b>Practice:</b> Assembly designing. Creating relationships between assembly components. Practical examples.	<b>Practice:</b> Exploding assemblies. Rendering and animating. Practical examples.
<b>11<sup>th</sup> week:</b>	<b>12<sup>th</sup> week:</b>
<b>Lecture:</b>	<b>Lecture:</b>
<b>Practice:</b> Creating technical drawing. Usage of drawing view wizard. View generation from parts. Practical examples.	<b>Practice:</b> Cutting planes, section views generation. Practical examples.
<b>13<sup>th</sup> week:</b>	<b>14<sup>th</sup> week:</b>
<b>Lecture:</b>	<b>Lecture:</b>
<b>Practice:</b> Creating part lists. Handling of engineering symbols (weld symbol, surface texture symbol, feature control symbol). Practical examples.	<b>Practice:</b> Dimensions, handling of special characters. Smart dimensions. Practical examples. <b>2<sup>nd</sup> test.</b>
<b>15<sup>th</sup> week: 2<sup>nd</sup> drawing week</b>	

## Requirements

### A, for a signature:

Attendance at **lectures** is recommended, but not compulsory.

Participation at **practice** is compulsory. Students must attend the practice classes and may not miss more than three times during the semester. In case a student does so, the subject will not be signed and the student must repeat the course. Students can't make up a practice class with another group. Attendance at practice classes will be recorded by the practice leader. Being late is counted as an absence. In case of further absences, a medical certificate needs to be presented. Missed practices should be made up for at a later date, being discussed with the tutor. Students are required to bring the drawing tasks and drawing instruments to the course with them to each practice class. Active participation is evaluated by the teacher in every class. If a student's behavior or conduct doesn't meet the requirements of active participation, the teacher may evaluate his/her participation as an absence because of the lack of active participation in class.

During the semester there are two tests: the 1<sup>st</sup> test in the 7<sup>th</sup> week and the 2<sup>nd</sup> test in the 15<sup>th</sup> week. Students have to sit for the tests.

### B, for grade:

The course ends in a **mid-semester grade (AW5)** based on the test results.

The minimum requirement for both mid-term and end-term tests is 50%. Based on the score of the tests separately, the grade for the tests is given according to the following table:

Score	Grade
0-39	fail (1)
40-52	pass (2)
52-63	satisfactory (3)
64-71	good (4)
72-80	excellent (5)

If the score of the sum of the two tests is below 40, the student once can take a retake test of the whole semester material.

