



COURSE SYLLABUS

Surface design, 6 credits

Ytmodellering, 6 högskolepoäng

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

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 ¹ | 4 credits | 5/4/3/U |
| Assignments | 2 credits | U/G |

¹ 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.