

Product Modelling

Programme course

6 credits

Produktmodellering

TMKT57

Valid from: 2017 Spring semester

Determined byBoard of Studies for Mechanical
Engineering and Design

Date determined 2017-01-25

Main field of study

Aeronautical Engineering, Product Development, Mechanical Engineering

Course level

Second cycle

Advancement level

A₁X

Course offered for

- Design and Product Development
- Industrial Engineering and Management International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Mechanical Engineering, M Sc in Engineering
- Mechanical Engineering, Master's programme

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

Courses in CAD and basic programming

Intended learning outcomes

After completing this course, the participants will have a good understanding of how automation of repetitive CAD work will provide engineers the means and opportunity to be more intuitive and creative. Furthermore the students shall:

- Be capable of creating CAD models of complex products
- Understand how to implement logic in CAD models in order to make them intelligent and generative
- Understand the principle of building flexible and reusable CAD models
- Be capable of creating flexible and reusable CAD models in CATIA V5
- Able to use programming in Visual Basic, CATScript and Engineering Knowledge Language (EKL) to create generative CAD models
- Able to use Application Programming Interface (API) in order to connect various software



Course content

The course is divided in three parts. In the first part of the course the students are introduced to:

- Basic modeling in CATIA V₅
- Part workbench
- Assembly workbench
- Generative Shape Design workbench

Part two of the course will introduce the students to:

- Methodologies on how to create complex products.
- Rule-based design
- Design reuse
- How to connect models with an external user interface

Early on in the course an examination task will be handed out, which should be solved working in groups.

Teaching and working methods

Lectures and computer exercises where methods and techniques thought in the course are applied to real design tasks. The lectures consist of mixed theory overview as well as guest lecturers from the industry to put the theory in a real world context. In the end of the course a workshop is arranged where the students will present their results to each other and invited industry representatives.

Examination

UPG1 Hand-in Assignments 6 credits U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Peter Hallberg

Course website and other links

http://www.iei.liu.se/machine?l=se



Education components Preliminary scheduled hours: 86 h

Recommended self-study hours: 74 h

Course literature

Studenterna uppmuntras också att aktivt söka ytterligare material på egenhand.



Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund_och_avancerad_niva.

