COURSE SYLLABUS
Advanced CAD, 7.5 credits

Avancerad CAD, 7,5 högskolepoäng

Course Code:	TACR21	**Education Cycle:**	Second-cycle level
Confirmed by:	Dean Mar 1, 2021	**Disciplinary domain:**	Technology
Revised by:	Director of Education Oct 25, 2023	**Subject group:**	MT1
Valid From:	Aug 1, 2024	**Specialised in:**	A1N
Version:	4	**Main field of study:**	Product Development

Intended Learning Outcomes (ILO)

After a successful course, the student shall:

Knowledge and understanding
• display elaborated knowledge on the theoretical background on CAD-systems
• display knowledge on advanced geometric tolerancing and material conditions

Skills and abilities
• demonstrate ability to use advanced functions in CAD for surface and solid modelling
• demonstrate ability to use functions such as boolean operations to form moulds and dies
• demonstrate ability to create purposeful CAD-models to support product realization

Judgement and approach
• demonstrate ability to judge what is required from a production specification to be used in industrial practice

Contents

The course teaches elaborate handling of CAD-system for the creation of production specifications on an advanced level. Products specifications include injection molding or other production methods. The specifications encompass all aspects of production such as tapers and parting lines. The parts should be specified in engineering drawings complying with applicable industrial standards. In the course, the prediction of which parameters that are governing for a design will be identified. Thus, a purposeful structure of parameters may be created in the CAD-models maximizing their value in the product realization process.

The course includes the following elements:
- Advanced CAD functions such as variable sweeps.
- Surface modelling in CAD
- Theoretical background to the CAD-systems
- Identification of governing parameters in designs
- Structure of parameters in CAD-models
- Creation of moulds and dies

Type of instruction

The course is taught through lectures and laboratory lessons (computer labs) and assignments.

The teaching is conducted in English.

Prerequisites

The applicant must hold the minimum of a bachelor's degree (i.e the equivalent of 180 ECTS credits at an accredited university) with at least 90 credits in mechanical engineering, civil engineering (with relevant courses in construction), or equivalent. The bachelor's degree should comprise a minimum of 15 credits in mathematics and 7.5 credits in CAD, or equivalent. Proof of English proficiency is required.

Examination and grades

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

Registration of examination:

Name of the Test	Value	Grading
Project[I]	4 credits	5/4/3/U
Assignments	3.5 credits	U/G

[I] Determines the final grade of the course, which is issued only when all course units have been passed.

Course literature

The literature list for the course will be provided one month before the course starts.

Digital compendium distributed at the course start