COURSE SYLLABUS
Integrated Product Development I, 7.5 credits

Integrerad produktutveckling I, 7,5 högskolepoäng

Course Code:	TI1S29	**Education Cycle:**	Second-cycle level
Confirmed by:	Dean Dec 1, 2018	**Disciplinary domain:**	Technology
Valid From:	Jan 1, 2019	**Subject group:**	MT1
Version:	1	**Specialised in:**	A1F
		Main field of study:	Product Development

Intended Learning Outcomes (ILO)

On completion of the course, the student should;

Knowledge and understanding
- demonstrate knowledge of working methods and organization of integrated collaboration in product development projects including in-depth knowledge in planning, reporting and managing product development projects.
- have knowledge of costing methods and cost analyzes that are applicable during the product development process
- demonstrate in-depth knowledge of product development methods and computer-based tools for product modeling and integration of product related information.
- demonstrate knowledge of planning for design variants in product development
- demonstrate knowledge on sustainable development in product development.

Skills and abilities
- demonstrate the ability to plan, form and start up a project following a structured and efficient process applicable for development of new products as well as product maintenance
- demonstrate an ability to critically analyze a product's manufacture and assembly.

Judgement and approach
- demonstrate an understanding of the multidisciplinary character of product development.

Contents

Course covers the relationship between a product's design, stakeholders' requirements and life cycle aspects, and resulting effects on these caused by decisions taken during product development. Various methods and tools to support integrated product development are introduced and applied. A strong emphasis is put on the integration between design and production. The course also includes activities where practical skills in planning, management and reporting of project are trained.

The course includes the following parts:

- A holistic approach to product development and a life-cycle view on the product design
- Methods and tools for integrated product development (DFA, DFM, FMT, DSM, FMEA)
- Integration of product models and product related information
- Production aspects and product design properties that are mutually dependent
- Methods and approaches in engineering design supporting efficient manufacture and assembly
- Operation and organization of integrated collaboration
- Cost estimation and costs analyzes in product development
- Design for Sustainability in practice
- Design for packaging and logistics
- Design for variety and Set-based concurrent engineering
- Production economics and aspects on product design
- Management and organization of integrated product development
- Planning, management and reporting of product development projects.

Type of instruction

The course consists of lectures, exercises, seminars and a project. The project work is to be continued in the Integrated Product Development 2 course.

The teaching is conducted in English.

Prerequisites

Passed courses at least 90 credits within the major subject Mechanical Engineering, 21 credits Mathematics, and completed course in Industrial Product Realization in Collaboration, 6 credits. Proof of English proficiency is required (or the equivalent).

Examination and grades

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

The final grade for the course in based upon a balanced set of assessments and the final grade will only be issued after satisfactory completion of all assessments.

Registration of examination:

Name of the Test	Value	Grading
Written examination	3 credits	5/4/3/U
Project work part 1[I]	3.5 credits	U/G
Exercises and Seminars	1 credit	U/G

[I] 1 Project work part 2 will be conducted and examined in Integrated Product Development 2.

Other information

Exemption from entry requirement allowed according to the selection groups of the program, where the course is included.

Course literature

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

Articles and course compendium free of charge.