



## COURSE SYLLABUS **Integrated Product Development, 12 credits**

*Integrerad produktutveckling, 12 högskolepoäng*

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<b>Course Code:</b>	TIPS25	<b>Education Cycle:</b>	Second-cycle level
<b>Confirmed by:</b>	Dean Feb 27, 2014	<b>Disciplinary domain:</b>	Technology (95%) and social sciences (5%)
<b>Revised by:</b>	Director of Education Oct 31, 2016	<b>Subject group:</b>	MT1
<b>Valid From:</b>	Jan 2, 2017	<b>Specialised in:</b>	A1F
<b>Version:</b>	3	<b>Main field of study:</b>	Product Development
<b>Reg number:</b>	JTH 2016/4126-313		

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### **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
- be familiar with how integration of product-related information can be obtained and used in the development
- 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
- demonstrate in-depth knowledge of planning, management and reporting of product development Projects
- demonstrate knowledge of planning for design variants in product development
- demonstrate knowledge on sustainable development in product development

Skills and abilities

- demonstrate an ability to analyze and assess how a product's design affects various aspects of production
- demonstrate an ability to use additive manufacturing as a mean in product realization
- demonstrate an ability to analyze and assess how different manufacturing methods affect a product's design
- demonstrate the ability to critically and creatively work in 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 and systematically improve a product's manufacture and assembly

Judgement and approach

- demonstrate an understanding of the importance of a holistic approach to product development

and a life cycle view on the product design in the development of new products.

## 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:

- Additive manufacturing as method for prototyping and manufacturing
- A holistic approach to product development and a life-cycle view on the product design
- Methods and tools for integrated product development
- Integration of product models and product related information
- Production aspects and product design properties that are mutually dependent
- Cost estimation and costs analyzes in product development
- Methods and approaches in engineering design supporting efficient manufacture and assembly
- Operation and organization of integrated collaboration
- Planning, management and reporting of product development projects.

## Type of instruction

The course consists of lectures, exercises, seminars and a project.

The teaching is conducted in English.

## Prerequisites

Passed courses 180 credits in first cycle, at least 90 credits within the major subject Mechanical Engineering, and 21 credits Mathematics, and completed course Industrial Product Realization, Process - Methods - Leadership, 9 credits (or the equivalent).

## Examination and grades

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

The final grade for the course is 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
Examination	4 credits	5/4/3/U
Project work	6 credits	U/G
Exercises and Seminars	2 credits	U/G

## 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.