



COURSE SYLLABUS **Sustainability in Product Development, 6 credits**

Hållbar produktutveckling, 6 högskolepoäng

Course Code:	THPK17	Education Cycle:	First-cycle level
Confirmed by:	Dean Sep 1, 2016	Disciplinary domain:	Technology (95%) and social sciences (5%)
Valid From:	Jan 1, 2017	Subject group:	MT1
Version:	1	Specialised in:	G1F
Reg number:	JTH 2016/02869-313	Main field of study:	Mechanical Engineering

Intended Learning Outcomes (ILO)

Knowledge and understanding;

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- demonstrate knowledge of tools for sustainability in product development
- demonstrate knowledge of certifications, the Machinery Directive, and CE marking
- demonstrate comprehension of the effects of requirements management on sustainability .

Skills and abilities

- demonstrating ability to work in a distributed product development team through a Product Data Management (PDM) system
- demonstrating ability to analyse sustainability policies
- demonstrating ability to make life cycle analyses to assess the sustainability of products.

Judgement and approach

- demonstrating ability to motivate the usage of tools for product development to ensure economic, social and environmental sustainability
- demonstrating ability to judge and suggest actions to improve the sustainability of products
- demonstrating ability to communicate results orally and in writing, in english.

Contents

The course is divided in three parts:

In the introduction part the students focus on a known product and gain knowledge by modelling it in a CAD-system. In parallel the students learn how to manage product assemblies, how to distribute work, and how to understand the rationale behind the product.

In the second part the focus is on the quality of the product development process. The students learn about tools to ensure that the resulting products meet the specifications (from customer, laws, etc.).

In part three the focus is on ensuring sustainability in the product development process.

The course includes the following elements:

- Managing product assemblies
- Work distribution in product development
- Reversed engineering, in the meaning analyzing already existing products
- Quality Function Deployment (QFD)
- Failure Modes and Effects Analysis for design (DFMEA)
- Simplified Life Cycle Analysis
- Product Data Management (PDM) / Product Lifecycle Management (PLM)
- Requirements management
- Standards, Machinery Directive and CE marking
- Materials, Energy, and Toxicity (MET)- matrix
- The Eco strategy Wheel
- Sustainability policies

Type of instruction

The course gives different perspectives on product development through guest lecturers from companies working knowledgeable with the current theme. Students complete exercises in groups related to the current theme. Teaching is conducted in English.

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Prerequisites

General entry requirements and completed courses Introduction to Product Realisation, 9 credits, Computer Aided Design, 6 credits and Manufacturing, 9 credits (or the equivalent).

Examination and grades

The course is graded Fail (U) or Pass (G).

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Registration of examination:

Name of the Test	Value	Grading
Reports	5 credits	U/G
Oral presentations	1 credit	U/G

Course literature

The literature is preliminary until one month before the course starts