



# Programme syllabus

Master's Programme, Integrated Product Design, 120 credits

Masterprogram, integrerad produktdesign

*120.0 credits*

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*Valid for students admitted to the education from autumn 10 (HT - Autumn term; VT - Spring term).*

This is a translation of the Swedish, legally binding, programme syllabus.

## Programme objectives

A graduate from the Integrated Product Design programme must:

### Knowledge and understanding

- show knowledge about the scientific foundation of and best practice in product development and mechanical engineering
- have a good insight into current research and development work and be able to use research results within industrial design or integrated product design
- have especially good knowledge about product development processes and usage of different methods and tools and be able to critically analyse the usage of them
- have a good awareness about interactive attributes in technical products, and the interaction between technical systems, people and the surrounding environment
- have good knowledge in methods in order to develop ecologically and economically sustainable products
- have a good foundation in natural and technical science with a specialization in the second cycle within industrial design or integrated product development
- describe different perspectives on innovation and be able to use different innovation concepts in these situations
- be able to judge and analyse design aspects in relation to the company's goals, markets and conditions and the users' needs

### Skills and abilities

- show the ability to carry out an innovative and professional product development work
- be able to handle fundamental tools for communication, visualisation and prototype development
- be able to take responsibility for planning, organisation, and implementation of efficient product development project work and teamwork

## **Ability to make judgements and adopt a standpoint**

- show the ability to assess technology's possibilities and limitations, its role in society and human responsibility for how it is used, including social and economical aspects and environmental and workplace environment aspects
- show the initiative and the ability to innovate and take advantage of technology's excellent possibilities to achieve a more human and sustainable society
- have an especially good understanding for the implicit complexity of technical systems and that processes followed to develop them are often incompletely defined and contain contradicting requirements and desires
- Show the ability to identify one's need for further knowledge and continuously develop one's own competence

KTH's local degree ordinance can be found in KTH's guidelines [www.kth.se](http://www.kth.se)

## **Extent and content of the programme**

The programme comprises 120 higher education credits which correspond to two years of full-time study. The programme is primarily in the second cycle and starts once per year.

Selectable tracks within Integrated Product Design are:

- Industrial Design (IDE)
- Integrated product development (IPU)

The language of instruction for the programme is Swedish.

## **Eligibility and selection**

In order to be eligible for the Master's programme, a relevant higher education degree, Bachelor of Science in Engineering or technical Bachelor degree, preferably within Mechanical Engineering comprising 180 higher education credits is required.

Other, corresponding, degrees within natural science in the first cycle can also provide eligibility provided that the relevant courses in mechanics and product design have been fulfilled. Other studies or work experiences are judged by competencies referred to. For KTH's programmes with English as the language of instruction, there is a special requirement of English B or the corresponding knowledge.

Selection into the programme is based on an evaluation of the following criteria: University/higher education institution, grades, courses relevant to the programme, personal letter, work experience and references.

For more information, refer to KTH's degree ordinance which can be found in KTH's guidelines, [www.kth.se](http://www.kth.se)

## **Implementation of the education**

## **Structure of the education**

### **Structure of the education**

Study years, terms, and study periods are described in KTH's guidelines, [www.kth.se](http://www.kth.se)

The programme starts with a common course package which is both a preparation for research and provides a solid base for the different specializations Industrial design and Integrated product development

The programme concludes with a degree project corresponding to 30 higher education credits in the second cycle during the fourth term.

### **Courses**

The programme is course-based. Lists of courses are included in [appendix 1](#).

### **Grading system**

Courses in the first and the second cycle are graded on a scale from A to F. A-E are passing grades, A is the highest grade. The grades pass (P) and fail (F) are used for courses under certain circumstances.

### **Conditions for participation in the programme**

In order for a student to be promoted to the programme's second study year, he/she must have completed at least 45 higher education credits during the first study year by the time the last re-examination period concludes and before the second year's studies are started.

Students who do not fulfil this requirement must, in collaboration with a study adviser, create an individual study plan.

### **Course registration**

The student registers courses before each term according to KTH's central guidelines.

### **Selection of specialization**

Selection of track is mentioned in the personal letter which is attached to the application to the programme. The tracks' core courses have prerequisites which may need to be met to fulfill the requirements (see appendix 1)

### **Recognition of previous academic studies**

Students have the possibility to apply for recognition of previous academic studies from course(s) at another higher education institution or university, both national and international.

KTH's entire policy for recognition of previous academic studies can be found in KTH's guidelines, [www.kth.se](http://www.kth.se)

### **Studies abroad**

The degree project can be carried out outside of Sweden with the examiner's approval.

## **Degree project**

The degree project consists of 30 higher education credits in the second cycle.

A student must have completed at least 60 higher education credits, including obligatory courses for the chosen master's programme, before he/she can start his/her degree project.

The degree project work is graded according the seven-level grading system, A-F.

KTH's rules for the degree project for Master's degrees with tracks can be found in KTH's guidelines, [www.kth.se](http://www.kth.se)

## **Degree**

In order to earn a Degree of Master of Science within Mechanical Engineering (Two Years), passing grades in all courses which are included in the student's study plan are required. The study plan must comprise 120 higher education credits which include a degree project consisting of 30 higher education credits, in the second cycle.

The student must apply for the degree and show his/her Bachelor Degree (or corresponding).

KTH's local degree ordinance can be found at <http://intra.kth.se/regelverk/>

[Appendix 1 - Course list](#)

[Appendix 2 - Programme syllabus descriptions](#)



# Appendix 1: Course list

Master's Programme, Integrated Product Design, 120 credits (TIPDM),  
Programme syllabus for studies starting in autumn 2010

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## Track, Industrial Design (IPDA)

### Year 1

#### Mandatory courses (57.0 Credits)

Course code	Course name	Credits	Edu. level
<a href="#">MF2006</a>	<a href="#">Innovative Design II</a>	6.0 hp	Second cycle
<a href="#">MF2031</a>	<a href="#">Advanced Prototyping</a>	6.0 hp	Second cycle
<a href="#">MF2032</a>	<a href="#">Eco Design</a>	6.0 hp	Second cycle
<a href="#">MF2033</a>	<a href="#">Material, Environment and Economy</a>	6.0 hp	Second cycle
<a href="#">MF2040</a>	<a href="#">Industrial Design Engineering Advanced Course</a>	24.0 hp	Second cycle
<a href="#">MF2045</a>	<a href="#">Engineering Research Methodology</a> The course is offered over three semesters and about 80% attendance required	9.0 hp	Second cycle

#### Conditionally elective courses

Course code	Course name	Credits	Edu. level
<a href="#">MF2037</a>	<a href="#">Human Product Interaction</a> Must be chosen during year 1 or 2	6.0 hp	Second cycle

### Year 2

#### Mandatory courses (33.0 Credits)

Course code	Course name	Credits	Edu. level
<a href="#">MF2040</a>	<a href="#">Industrial Design Engineering Advanced Course</a> 15 credits during year 2 <a href="#">Engineering Research Methodology</a>	24.0 hp	Second cycle

[MF2045](#) 3 credits during year 2 9.0 hp Second cycle

### Conditionally elective courses

Course code	Course name	Credits	Edu. level
<a href="#">MF2037</a>	<a href="#">Human Product Interaction</a> MF2037 or MF2038 must be taken during year 1 or year 2	6.0 hp	Second cycle
<a href="#">MF2038</a>	<a href="#">Service Design</a> MF2037 or MF2038 must be taken during year 1 or year 2	6.0 hp	Second cycle

## Track, Concurrent Engineering (IPDB)

### Year 1

#### Mandatory courses (51.0 Credits)

Course code	Course name	Credits	Edu. level
<a href="#">MF2031</a>	<a href="#">Advanced Prototyping</a>	6.0 hp	Second cycle
<a href="#">MF2032</a>	<a href="#">Eco Design</a>	6.0 hp	Second cycle
<a href="#">MF2034</a>	<a href="#">Integrated Product Development</a>	6.0 hp	Second cycle
<a href="#">MF2036</a>	<a href="#">Integrated Product Development, Advanced Course</a>	24.0 hp	Second cycle
<a href="#">MF2045</a>	<a href="#">Engineering Research Methodology</a> The course is offered over three semesters and about 80% attendance required	9.0 hp	Second cycle

#### Conditionally elective courses

Course code	Course name	Credits	Edu. level
<a href="#">MF2006</a>	<a href="#">Innovative Design II</a> 2 courses should be read in year 1 and 2	6.0 hp	Second cycle
<a href="#">MF2023</a>	<a href="#">Industrial Design</a> 2 courses should be read in grade 2 and 3	6.0 hp	Second cycle
<a href="#">MG2020</a>	<a href="#">Modularisation of Products</a> 2 courses should be read in year 1 and 2	6.0 hp	Second cycle

### Year 2

#### Mandatory courses (33.0 Credits)

Course code	Course name	Credits	Edu. level
	<a href="#">Integrated Product Development, Advanced Course</a>		

<a href="#">MF2036</a>	16 credits during year 2	24.0 hp	Second cycle
<a href="#">MF2045</a>	<a href="#">Engineering Research Methodology</a> 3 credits during year 2	9.0 hp	Second cycle

### Conditionally elective courses

<b>Course code</b>	<b>Course name</b>	<b>Credits</b>	<b>Edu. level</b>
<a href="#">MF2006</a>	<a href="#">Innovative Design II</a> 2 courses should be read in year 1 and 2	6.0 hp	Second cycle
<a href="#">MF2023</a>	<a href="#">Industrial Design</a> 2 courses should be read in year 1 and 2	6.0 hp	Second cycle
<a href="#">MF2038</a>	<a href="#">Service Design</a> 2 courses should be read in year 1 and 2	6.0 hp	Second cycle
<a href="#">MF2046</a>	<a href="#">Product Innovation</a> 2 courses should be read in year 1 and 2	6.0 hp	Second cycle
<a href="#">MG2020</a>	<a href="#">Modularisation of Products</a> 2 courses should be read in year 1 and 2	6.0 hp	Second cycle



## **Appendix 2: Specialisations**

Master's Programme, Integrated Product Design, 120 credits (TIPDM),  
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**Track, Industrial Design (IPDA)**

**Track, Concurrent Engineering (IPDB)**