Programme syllabus

Degree Programme in Design and Product Realisation
Civilingenjörsutbildning i design och produktframtagning
300.0 credits

Valid for students admitted to the education from autumn 13 (HT - Autumn term; VT - Spring term).

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

Programme objectives

Beyond those objectives that are specified in the Higher Education Ordinance, a graduate of Master of Science in Design and Product Realization at KTH will…

Knowledge and understanding

• Have noticably good knowledge in the design and product realization process in order to produce products which are easy to use. This includes choice of materials, manufacturing techniques, and energy sources.

• have a good foundation in natural and technical sciences with a specialisation in the second cycle within one of the application areas within the chain: design, construction, production

Skills and abilities

• have an ability to combine and carry out the traditional natural and technical science foundation in the programme to construction and design as a foundation for realization of attractive products and services

• have individual and professional skills such as language, leadership, project-management and communication for work as an engineer in a leadership position or as a leader in a technically intensive company.

• essentially, have developed one’s own creative ability through significant elements of production, with the creativity as a complement to the analytical perspective.

• have a basic understanding of entrepreneurial activities

Ability to make judgements and adopt a standpoint

• Have especially good understanding that engineering-related problems, considered from a system perspective, are often complex, incompletely defined and sometimes contain contradictions

• Show an understanding of responsibility and ethics relevant for all steps in the product realization process, e.g. design – construction – production/manufacturing and utilitilization.

The local degree ordinance of the Royal Institute of Technology can be found in the KTH Regulations.

Extent and content of the programme

The program consists of 300 credits which correspond to five years of full-time studies.

The program’s level is primarily on the first-cycle for the first three years and the second-cycle in the two last years.
The language of instruction is mainly Swedish, but certain courses and course elements are in English.

**Eligibility and selection**

In order to study at KTH, basic eligibility requirements must be fulfilled. In addition, the following special eligibility requirements must be fulfilled for KTH’s Masters of Science in Engineering programmes: Mathematics course E, Physics course B and Chemistry course A or the corresponding equivalents. All of the courses must have been completed with at least a grade of pass (godkänd) or 3. If the applicant refers to other studies or work experiences that may show competences then they will be assessed accordingly.

More information regarding KTH’s admission policy can be found in the KTH Regulations, www.kth.se.

**Implementation of the education**

**Structure of the education**

Academic year, terms, and study periods can be found in the KTH Regulations, www.kth.se

**Study years 1-3, studies in the first-cycle**

The study programme consists of the mandatory courses in years 1-3 in the first-cycle (G), and a specialisation in the second-cycle (A) in years 4 and 5, which concludes with 30 credits on a degree project.

The programme is organised around courses in the mathematical, technically scientific and technical application subjects. The education in and usage of professional skills and abilities of significant importance for a Master of Science in Engineering, for example: communication, ethics, entrepreneurship, sustainable development, company- and societal aspects, are integrated into the courses.

In order to make the programme comprehensive, collaboration is emphasized between the different subjects and throughout the entire programme. The courses are scheduled and coordinated in such a way that this is reached through common project work and hand-in assignments, etc.

The students study together throughout year 1 and 2 and parts of year 3. Before the conclusion of the first cycle, the student must choose a specialisation area. Within the chosen specialisation, the student will study a limited area of applied product design and realization.

The programme is structured in a way that a student can choose to get a Degree of Bachelor of Science in Engineering. This makes it possible for students to continue their studies abroad or at other universities in Sweden.

**Mathematically natural science courses**

Most of the courses in basic mathematical and natural science are in the first year. The remainder are in the second year.

**Technical courses**

Throughout years 1-3, the student will study basic technical scientific courses in the technical area of product design and realization.

The first three years conclude with 15 credits of specialization/degree project work for the Degree of Bachelor of Science in Engineering in the chosen technical area. After completing 180 credits, the student can apply for the Degree of Bachelor of Science in Engineering if the degree requirements are fulfilled.

**Study years 4-5, specialisation in the second cycle**

The specialisation area consists mainly of advanced courses and degree project work within one specific technical scientific area. Students in the Product Design and Realization program can choose between a large selection of specialisations with predetermined study plans. The student is guaranteed a place in any specialisation they choose.
Except for the previously mentioned work-related skills and abilities, knowledge about entrepreneurship is integrated into the courses during years 4 and 5.

The Master of Science in Engineering’s knowledge about the environment and sustainable development is deepened and solidified due to the integration of these subjects in the programme’s courses with special aspects: for example, life-cycle analysis, environmental effects and choice of material, which is respective for the chosen technical specialisations.

A reason for the specialization is that the student has the possibility of making many contacts with the department and a research group where the degree project work will be done.

A student that has started a first-cycle study programme in another technical scientific area can conclude with a specialisation in a different technical area. Approval courses for such a specialisation must be taken with the approval of the administrative office of the programme.

Available specialisation areas for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
- Sustainable Energy Engineering
- Sustainable Technology
- Technical Mechanics
- Vehicle Engineering

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

Term Enrolment and Course Application

A prerequisite to be allowed to participate in the studies is that the student verifies enrollment for courses the coming term every spring and fall. This is done via www.antagning.se between the 1st and 15th of November and the 1st and 15th of May.

Selection of Master programmes

In preparation for year 4, second cycle, the student chooses a master programme within their Master of Science in Engineering degree programme. This is done between the 1st and 15th of May. The choice of master programme within their Master of Science in Engineering degree programme for the fall 2012 is done according to the instruction provided by the Students Office within the University administration at KTH. Apart from the basic eligibility requirements for study in the second cycle (year 4) each master has specific requirements. The evaluation of the basic and specific requirements is made by the Students Office within the University administration at KTH.

Conditions for participation in each year of the programme

For studying in year 2:
A minimum of 45 credits from year 1 must be completed by the end of the exam period in August. Students who don’t fulfill this requirement must devise an individual study plan with a guidance counselor.

For studying in year 3:

A minimum of 90 credits from years 1 and 2 must be completed by the end of the exam period in August. Students who don’t fulfill this requirement must devise an individual study plan with a guidance counselor.

For studying in year 4:

A minimum of 150 credits from years 1-3 must be completed by the end of the exam period in August. Within these 150 credits, a degree project worth 15 credits and a minimum of 110 credits from compulsory courses from years 1 and 2 must be completed. Students who don’t fulfill this requirement must devise an individual study plan with a guidance counselor.

For studying in year 5:

A minimum of 195 credits from years 1, 2, 3 and 4 of which at least 45 credits from year 4 must be completed by the end of the exam period in August. Students who don’t fulfill this requirement must devise an individual study plan with a guidance counselor.

Prior to year 4 (Master’s level), students choose a Masters program within the context of their Master of Science in Engineering program. This is done during May 1-15. Selection of master is directed by the admissions office within the department of student services at KTH. In addition to the general requirements for studies in year 4, specific admission requirements apply for every Master’s program. Judgments of these requirements are reviewed by the department of Student Services at KTH.

Recognition of previous academic studies

The student has the possibility to apply to receive credit for results from previous studies at another university within the country or abroad. The form is available on KTH’s website.

KTH’s policy for receiving credits from previous academic studies is available in the KTH Regulations, www.kth.se

Studies abroad

Students in the Program have the possibility to study abroad through the contracts KTH has with universities within EU and outside. Exchange studies can not be done in the first or second year. It is also possible to do the degree project work abroad.

The application deadline for studies abroad is around December 15th.

Degree project

A Degree project on the Bachelor level consisting of 15 credits and a Degree project of 30 credits are a requirement for the program.

In order for a student to begin the degree project on the Bachelor level a mimimum of 120 credits must be met. Plus the general requirements for studies within the 3rd year must be met.

Students are required to have a minimum of 240 credits before beginning the Final Project.

KTH’s rules for the degree project are available in the KTH-Regulations, www.kth.se

Degree

In order to graduate as a Master of Science in Engineering, Degree Program in Design and Product Realization, the student must be approved in every course that is included in the student’s study plan. The study plan must consist of 300 credits including 30 credits of degree project work.
Reference to the local degree policy is available in the KTH Regulations, www.kth.se.

**Appendix 1** *Lists of courses and specialisations.*

**Appendix 2** *Description of specialisations.*

Appendix 1 - Course list
Appendix 2 - Programme syllabus descriptions
## General courses

### Year 1

**Mandatory courses (60.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1037</td>
<td>Design and Product Realization, Modelling and Simulation</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1046</td>
<td>Design and Product Realization, Introduction</td>
<td>10.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1517</td>
<td>Numerical Methods and Basic Programming</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1624</td>
<td>Algebra and Geometry</td>
<td>7.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1625</td>
<td>Calculus in One Variable</td>
<td>7.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1626</td>
<td>Calculus in Several Variable</td>
<td>7.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>SG1130</td>
<td>Mechanics I</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

### Year 2

**Mandatory courses (64.5 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1016</td>
<td>Basic Electrical Engineering</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1018</td>
<td>Industrial Design Prep</td>
<td>3.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1038</td>
<td>Design and Product Realization, Form and Function</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1039</td>
<td>Design and Product Realization, Components</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1006</td>
<td>Design and Product Realization - Manufacturing</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1028</td>
<td>Introductory 3D CAD</td>
<td>1.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>MJ1112</td>
<td>Applied Thermodynamics</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SE1010</td>
<td>Solid Mechanics, Basic Course with Project</td>
<td>12.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1633</td>
<td>Differential Equations I</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>Course code</td>
<td>Course name</td>
<td>Credits</td>
<td>Edu. level</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------</td>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>SG1140</td>
<td>Mechanics II</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Year 3**

**Mandatory courses (21.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

**Supplementary information**

Information is based upon the curriculum for academic year 2014/2015. Changes may occur.

Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
- Sustainable Energy Engineering
- Sustainable Technology
- Technical Mechanics
- Vehicle Engineering

**Year 4**

**Supplementary information**

Information is based upon the curriculum for academic year 2014/2015. Changes may occur.

Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

**Year 5**

**Supplementary information**

Information is based upon the curriculum for academic year 2014/2015. Changes may occur.

Available Master programs for Design and Product Realization:

Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

**Master, Aerospace Engineering (AEE)**

**Year 1**

**Year 2**

**Year 3**

**Mandatory courses (39.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL1120</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1901</td>
<td>Probability Theory and Statistics</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SG1220</td>
<td>Fluid Mechanics for Engineers</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA118X</td>
<td>Degree Project in Mechanical Engineering, First Level</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>
## Recommended courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Supplementary information

One degree project must be chosen.

Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
- Sustainable Energy Engineering
- Sustainable Technology
- Technical Mechanics
- Vehicle Engineering

According to the President of the University’s decision on July 1, 2015, grades pass (P) and fail (F) will be used for the Bachelor thesis. Students who have begun studies on July 1, 2007, and through June 30, 2015, also have the option to use the grading scale of A-F, for their Master thesis. Registration must be done before the course registration and before the thesis work starts.

### Year 4

#### Supplementary information

Course list: https://www.kth.se/student/kurser/program/TAEEM/HT16/arskurs1
### Year 5

**Master, Vehicle Engineering (FOR)**

### Year 1

### Year 2

### Year 3

#### Mandatory courses (27.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL1120</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

#### Conditionally elective courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA118X</td>
<td>Degree Project in Mechanical Engineering, First Level</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Recommended courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG1217</td>
<td>Fluid Mechanics, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

#### Supplementary information

One degree project must be chosen

Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
Sustainable Energy Engineering  
Sustainable Technology  
Technical Mechanics  
Vehicle Engineering  

**Year 4**

**Supplementary information**

Course list: Kurslistan: https://www.kth.se/student/kurser/program/TFORM/HT16/arskurs1

**Year 5**

**Master, Industrial Management (INE)**

**Year 1**

**Year 2**

**Year 3**

**Mandatory courses (33.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ME2015</td>
<td>Project Management: Leadership and Control</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>ME2063</td>
<td>Team Leadership and Human Resource Management</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF131X</td>
<td>Degree Project in Integrated Product Development, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF133X</td>
<td>Degree Project in Mechatronics, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG110X</td>
<td>Degree Project in Production Engineering, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MJ146X</td>
<td>Degree Project in Sustainable Energy Engineering, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SA118X</td>
<td>Degree Project in Mechanical Engineering, First Level</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

*One of SD1116 or SK2371 should be taken*

**Supplementary information**

One degree project must be chosen
Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
- Sustainable Energy Engineering
- Sustainable Technology
- Technical Mechanics
- Vehicle Engineering

During year 4 and 5, CDEPR and CMAST students must choose a technical profil from the following topics:

- Energy
- Production
- Machine Design

**Year 4**

**Year 5**

**Track, Industrial Design Engineering (IPDC)**

**Year 1**

**Year 2**

**Year 3**

**Mandatory courses (33.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM1025</td>
<td>Ergonomics in Product Development</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1025</td>
<td>Model Based Product Development II</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF132X</td>
<td>Degree Project in Industrial Design Engineering, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>
Supplementary information

One degree project must be chosen

Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
- Sustainable Energy Engineering
- Sustainable Technology
- Technical Mechanics
- Vehicle Engineering

Year 4

Supplementary information

Course list: https://www.kth.se/student/kurser/program/TIPDM/HT16/arskurs1

Year 5

Track, Innovation Management and Product Development (IPDE)

Year 1

Year 2

Year 3

Year 4

Supplementary information

Course list: https://www.kth.se/student/kurser/program/TIPDM/HT16/arskurs1

Year 5

Track, Combustion Engineering (IPUA)

Year 1

Year 2

Year 3

Mandatory courses (21.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>Course code</td>
<td>Course name</td>
<td>Credits</td>
<td>Edu. level</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------</td>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
</table>
| EL1000      | Automatic Control, General Course
*One must be taken of EL1000 or EL1120* | 6.0     | First cycle|
| EL1120      | Automatic Control, General Course
*One must be taken of EL1000 or EL1120* | 6.0     | First cycle|
| MF130X      | Degree Project in Machine Design, First Cycle                | 15.0    | First cycle|
| SD1116      | Design of Silent and Vibration-free Products
*One of SD1116 or SK2371 should be taken* | 6.0     | First cycle|
| SK2371      | Physics of Visual Impressions, Larger Course
*One of SD1116 or SK2371 should be taken* | 9.0     | Second cycle|

**Supplementary information**

One degree project must be chosen

Available Master programs for Design and Product Realization:

Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

**Year 4**

**Supplementary information**

Course list: [https://www.kth.se/student/kurser/program/TIPUM/HT16/arskurs1](https://www.kth.se/student/kurser/program/TIPUM/HT16/arskurs1)
Year 5

Track, Machine Design (IPUB)

Year 1

Year 2

Year 3

Mandatory courses (21.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

Conditionally elective courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF130X</td>
<td>Degree Project in Machine Design, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Supplementary information

One degree project must be chosen

Available Master programs for Design and Product Realization:

Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

Year 4

Supplementary information

Course list:  https://www.kth.se/student/kurser/program/TIPUM/HT16/arskurs1
Year 5

Track, Mechatronics (IPUC)

Year 1

Year 2

Year 3

Mandatory courses (36.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD1321</td>
<td>Applied Programming and Computer Science</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1120</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

Conditionally elective courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF133X</td>
<td>Degree Project in Mechatronics, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Supplementary information

One degree project must be chosen

Available Master programs for Design and Product Realization:

Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering
### Year 4

#### Supplementary information

Course list: https://www.kth.se/student/kurser/program/TIPUM/HT16/arskurs1

### Year 5

**Master, Naval Architecture (MRS)**

#### Year 1

#### Year 2

#### Year 3

**Mandatory courses (21.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA118X</td>
<td>Degree Project in Mechanical Engineering, First Level</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SG1217</td>
<td>Fluid Mechanics, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SG1220</td>
<td>Fluid Mechanics for Engineers</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

**Recommended courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF1901</td>
<td>Probability Theory and Statistics</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Supplementary information**

One degree project must be chosen

Available Master programs for Design and Product Realization:
Integrated Product Design  
Industrial Production  
Industrial Product Development  
Aerospace  
Industrial Management  
Naval Architecture  
Sustainable Energy Engineering  
Sustainable Technology  
Technical Mechanics  
Vehicle Engineering

**Year 4**

**Supplementary information**

Course list: [https://www.kth.se/student/kurser/program/TMRSM/HT16/arskurs1](https://www.kth.se/student/kurser/program/TMRSM/HT16/arskurs1)

**Year 5**

**Master, Production Engineering and Management (PRM)**

**Year 1**

**Year 2**

**Year 3**

**Mandatory courses (27.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG110X</td>
<td>Degree Project in Production Engineering, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Supplementary information**

One degree project must be chosen

Available Master programs for Design and Product Realization:
Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

Year 4

Supplementary information
Course list: https://www.kth.se/student/kurser/program/TPRMM/HT16/arskurs1

Year 5

Master, Sustainable Energy Engineering (SUE)

Year 1

Year 2

Year 3

Mandatory courses (33.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MJ1401</td>
<td>Heat Transfer</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SG1220</td>
<td>Fluid Mechanics for Engineers</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

Conditionally elective courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MJ146X</td>
<td>Degree Project in Sustainable Energy Engineering, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td></td>
<td>One of SD1116 or SK2371 should be taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td>One of SD1116 or SK2371 should be taken</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Supplementary information

One degree project must be chosen
Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
- Sustainable Energy Engineering
- Sustainable Technology
- Technical Mechanics
- Vehicle Engineering

**Year 4**

**Supplementary information**

Course list: https://www.kth.se/student/kurser/program/TSUEM/HT16/arskurs1

**Year 5**

**Master, Sustainable Technology (SUT)**

**Year 1**

**Year 2**

**Year 3**

**Mandatory courses (28.5 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MJ2615</td>
<td>Introduction to Industrial Ecology, larger course</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL126X</td>
<td>Degree Project in Technology and Sustainable Development, First Cycle</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

**Supplementary information**

One degree project must be chosen
Available Master programs for Design and Product Realization:

- Integrated Product Design
- Industrial Production
- Industrial Product Development
- Aerospace
- Industrial Management
- Naval Architecture
- Sustainable Energy Engineering
- Sustainable Technology
- Technical Mechanics
- Vehicle Engineering

**Year 4**

**Supplementary information**

Course list: [https://www.kth.se/student/kurser/program/TSUTM/HT16/arskurs1](https://www.kth.se/student/kurser/program/TSUTM/HT16/arskurs1)

**Year 5**

**Track, Fluid Mechanics (TEMA)**

**Year 1**

**Year 2**

**Year 3**

**Mandatory courses (27.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SG1220</td>
<td>Fluid Mechanics for Engineers</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA118X</td>
<td>Degree Project in Mechanical Engineering, First Level</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of SD1116 or SK2371 should be taken</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Supplementary information**

One degree project must be chosen
Available Master programs for Design and Product Realization:

Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

**Year 4**

Supplementary information

Course list: https://www.kth.se/student/kurser/program/TTEMM/HT16/arskurs1

**Year 5**

**Track, Solid Mechanics (TEMB)**

**Year 1**

**Year 2**

**Year 3**

**Mandatory courses (21.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA118X</td>
<td>Degree Project in Mechanical Engineering, First Level</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SK2371</td>
<td>Physics of Visual Impressions, Larger Course</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

**Supplementary information**

One degree project must be chosen

Available Master programs for Design and Product Realization:
Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

Year 4

Supplementary information
Course list: https://www.kth.se/student/kurser/program/TTEMM/HT16/arskurs1

Year 5

Track, Sound and Vibrations (TEMC)

Year 1

Year 2

Year 3

Mandatory courses (27.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1040</td>
<td>Design and Product Realization Methodology</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1005</td>
<td>Structural Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

Conditionally elective courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA118X</td>
<td>Degree Project in Mechanical Engineering, First Level</td>
<td>15.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

Supplementary information
One degree project must be chosen

Available Master programs for Design and Product Realization:

Integrated Product Design
Industrial Production
Industrial Product Development
Aerospace
Industrial Management
Naval Architecture
Sustainable Energy Engineering
Sustainable Technology
Technical Mechanics
Vehicle Engineering

**Year 4**

*Supplementary information*

Course list: https://www.kth.se/student/kurser/program/TTEMM/HT16/arskurs1

**Year 5**
Appendix 2: Specialisations

Degree Programme in Design and Product Realisation (CDEPR), Programme syllabus for studies starting in autumn 2013

Master, Aerospace Engineering (AEE)
Master, Vehicle Engineering (FOR)
Master, Industrial Management (INE)
Track, Industrial Design Engineering (IPDC)
Track, Innovation Management and Product Development (IPDE)
Track, Combustion Engineering (IPUA)
Track, Machine Design (IPUB)
Track, Mechatronics (IPUC)
Master, Naval Architecture (MRS)
Master, Production Engineering and Management (PRM)
Master, Sustainable Energy Engineering (SUE)
Master, Sustainable Technology (SUT)
Track, Fluid Mechanics (TEMA)
Track, Solid Mechanics (TEMB)
Track, Sound and Vibrations (TEMC)