Programme syllabus

Degree Programme in Mechanical Engineering
Civilingenjörsutbildning i maskinteknik
300.0 credits

Valid for students admitted to the education from autumn 14 (HT - Autumn term; VT - Spring term).

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

Programme objectives

Beyond the objectives that are specified in the Higher Education Ordinance, a graduate from the programme will…

Knowledge and understanding

- Have a broad technical and scientific base to be able to work in several technical areas with product development, production, and manufacturing or energy issues. More specifically, be familiar with choice of materials, energy sources, production methods or assessment of economical or environmental consequences, etc.
- Show a broad aptitude in the chosen technical area, including knowledge in mathematics and sciences, as well as a deeper knowledge in certain parts of the study area.

Skills and abilities

- Be able to apply knowledge and abilities in a practical environment while making relevant assessments and taking standpoints scientifically, professionally and socially, both in a group as well as independently
- Show a good ability to analyze, formulate and handle technical problems while considering the problem from beginning to end: from the ideas or requirements to specification, development, operation and finally, termination. Moreover, the ability to define, determine resource demand and lead processes to problem-solution and realisation.
- Show certain abilities to lead activities on different organisational levels, in different types of organisational life-cycle stages and different types of business logic.
- 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.
- Have a basic understanding of entrepreneurial activities

Ability to make judgements and adopt a standpoint

- Have especially good understanding that engineering-related problems are often complex, incompletely defined and sometimes contain contradictions
- Show an reflecting attitude to responsibility and ethics in relation to technical, organisational, economical, ecological and societal activities.

The local degree ordinance of the Royal Institute of Technology can be found in the KTH-Regulations. intra.kth.se/regelverk

Extent and content of the programme

The programme consists of 300 credits which correspond to five years of full-time studies.
Master's programmes leading to Master of Science in Engineering degree:

- Aerospace Engineering
- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
- Integrated Product Design (Tracks Integrated product design and Product innovation)
- Production Engineering Management
- Engineering Design
- Nuclear Energy Engineering
- Mathematics (Track Mathematical statistics and financial mathematics, Track Computational mathematics and Track Optimization and systems theory)
- Naval Architecture
- Sustainable Technology
- Engineering Mechanics

The language of instruction in the first cycle is mainly Swedish.
The language of instruction in the second cycle is mainly 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 Masters of Science in Engineering programmes at KTH:

Mathematics course 4, Physics course 2 and Chemistry course 1 or the corresponding equivalents. All of the courses must have been completed with at least a grade of pass (godkänd) or 3. Other studies or work experience will be assessed on the basics of the actual competence adduced.

More information regarding KTH’s admission policy can be found in the KTH-Regulations. *intra.kth.se/regelverk*

**Implementation of the education**

**Structure of the education**

**Structure of the Programme**

Academic year, terms, and study periods can be found in the KTH-Regulations *intra.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 Master's Programme in the second-cycle (A) in years 4 and 5, which concludes with a 30 credits degree project.

The programme is organised around courses in the mathematical, technically scientific and technical applied 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 programme is structured in such a way that a student can choose to get a Degree of Bachelor of Science in Engineering after three years of study. 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 is placed in the second year.

**Technical courses**

Throughout years 1-3, the student will study basic technical scientific courses in Mechanical Engineering such as strength of materials and solid mechanics, thermodynamics, construction, and production.

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

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

The Master programme consists mainly of advanced courses and ends with a degree project work within one specific technical scientific area. Students in the Mechanical Engineering programme can choose between a wide range of Masters with set study plans. The student is guaranteed a place on their chosen master.

The knowledge about the environment and sustainable development is deepened and solidified by being integrated into the programme’s courses with special focus on for example: life-cycle analysis, environmental effects and choice of material, which is associated with the chosen Master programme.

Master's programmes leading to Master of Science in Engineering degree:

- Aerospace Engineering
- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
- Integrated Product Design (Tracks Integrated product design and Product innovation)
- Production Engineering Management
- Engineering Design
- Nuclear Energy Engineering
- Mathematics (Track Mathematical statistics and financial mathematics, Track Computational mathematics and Track Optimization and systems theor)
- Naval Architecture
- Sustainable Technology
- Engineering Mechanics

**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.

By verifying his/her enrolment, the student has submitted his/her intention to continue studying and participating in the programme. After that it is possible for the student to:

- registered for courses
• have results reported
• have the possibility to receive financial support from CSN

Conditions for participation in each year of the programme

For studying in year 2:
At least 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 design an individual study plan with a guidance officer.

For studying in year 3:
At least 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 design an individual study plan with a guidance officer.

For studying in year 4:
At least 150 credits from years 1-3, including a degree project, 15 credits, must be completed by the end of the exam period in August. Students who don’t fulfill this requirement must design an individual study plan with a guidance officer.

For studying in year 5:
At least 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 design an individual study plan with a guidance officer.

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.

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.

KTH’s policy for receiving credit from previous academic studies is available in its entirety in the KTHs Regulations. intra.kth.se/regelverk

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 normally 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
The degree project consists of 30 credits.

Students are required to have a minimum of 240 credits within the programme before beginning the degree project.

KTH’s rules for the degree project are available in the KTH-Regulations intra.kth.se/regelverk
Degree

In order to graduate as a Master of Science in Engineering, Degree Programme in Mechanical Engineering 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.

Appendix 1 - Course list
Appendix 2 - Programme syllabus descriptions
Appendix 1: Course list

Degree Programme in Mechanical Engineering (CMAST), Programme syllabus for studies starting in autumn 2014

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>MJ1103</td>
<td>Introduction to Mechanical Engineering</td>
<td>10.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1511</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>
<tr>
<td>SK1112</td>
<td>Physics I</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

Year 2

Mandatory courses (61.5 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>MF1016</td>
<td>Basic Electrical Engineering</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1044</td>
<td>Machine Components</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1026</td>
<td>Manufacturing Technology</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>
</tbody>
</table>
Study Programme for Degree Programme in Mechanical Engineering batch autumn 14.

Appendix 1, page 2 of 34

# Course code | Course name | Credits | Edu. level
--- | --- | --- | ---
SG1140 | Mechanics II | 6.0 | First cycle

## Year 3

### Mandatory courses (18.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

### Supplementary information

A degree project for Degree of Bachelor must be chosen during study year 3, independently of chosen masters programme:

Master's programmes leading to Master of Science in Engineering degree:

- Aerospace Engineering
- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
- Integrated Product Design
  - Track, Innovation Management and Product Development
- Production Engineering Management
- Engineering Design
  - Track, Combustion Engineering
  - Track, Machine Design
  - Track, Mechatronics
- Nuclear Energy Engineering
- Applied and Computational Mathematics
- Naval Architecture
- Sustainable Technology
- Engineering Mechanics
  - Track, Fluid Mechanics
  - Track, Solid Mechanics
  - Track, Sound and Vibrations

Some Masterprograms require specific courses during year 3.

## Year 4

### Supplementary information

Master's programmes leading to Master of Science in Engineering degree:

- Aerospace Engineering
- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
• Integrated Product Design (Tracks Integrated product design and Product innovation)
• Production Engineering Management
• Engineering Design
• Nuclear Energy Engineering
• Mathematics (Track Mathematical statistics and financial mathematics, Track Computational mathematics and
  Track Optimization and systems theor)
• Naval Architecture
• Sustainable Technology
• Engineering Mechanics

Some Masterprogrammes require specific courses during year 3.

Year 5

Supplementary information

Information is based upon the curriculum for academic year 2014/15. Changes may occur.

Master's programmes leading to Master of Science in Engineering degree:

• Aerospace Engineering
• Vehicle Engineering
• Sustainable Energy Engineering
• Industrial Management
• Integrated Product Design (Tracks Integrated product design and Product innovation)
• Production Engineering Management
• Engineering Design
• Nuclear Energy Engineering
• Mathematics (Track Mathematical statistics and financial mathematics, Track Computational mathematics and
  Track Optimization and systems theor)
• Naval Architecture
• Sustainable Technology
• Engineering Mechanics

Some Masterprogrammes require specific courses during year 3.

Master, Aerospece Engineering (AEE)

Year 1

Year 2

Year 3

Mandatory courses (24.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL1010</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td></td>
<td><em>EL1000 can be chosen instead of EL1010.</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</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>
| SG1217      | Fluid Mechanics, Basic Course  
One of the courses SG1217 or SG1220 must be chosen. | 6.0     | First cycle |
| SG1220      | Fluid Mechanics for Engineers  
One of the courses SG1220 or SG1217 must be chosen. | 6.0     | First cycle |

### 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>DD1320</td>
<td>Applied Computer Science</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>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1024</td>
<td>Production</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>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

### Supplementary information

One of the conditionally elective courses SG1217 or SG1220 must be chosen.

One of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

### Year 4

#### Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TAEEM/HT17/arskurs1?l=en
### Year 5

**Master, Vehicle Engineering (FOR)**

#### Year 1

#### Year 2

#### Year 3

**Mandatory courses (24.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
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</table>

**Conditionally elective courses**

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<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD1320</td>
<td>Applied Computer Science</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>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1024</td>
<td>Production</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MJ1401</td>
<td>Heat Transfer</td>
<td>6.0</td>
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<td>Design of Silent and Vibration-free Products</td>
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<td>FEM for Engineering Applications</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>
</tbody>
</table>

**Supplementary information**

At least one of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
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- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
SA118X Degree Project in Mechanical Engineering, First Level

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Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TFORM/HT17/arskurs1?l=en

Year 5

Master, Industrial Management (INE)

Year 1

Year 2

Year 3

Mandatory courses (30.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>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>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
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</table>

Conditionally elective courses

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<th>Credits</th>
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<tbody>
<tr>
<td>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
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<td>MG1024</td>
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</table>
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<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>SE1025</td>
<td>FEM for Engineering Applications</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>
</tbody>
</table>

**Supplementary information**

At least one of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

or a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

**CMAST-students at Masters programme, Industrial Management (TINEM)**

A technical profile specified within the study year plan for Degree Programme in Mechanical Engineering must be chosen.

One of the following profiles can be chosen:

- **Technical profile Construction**
  - MF2024 Robust and Probabilistic Design
  - MF2031 Advanced Prototyping*
  *also possible to study in period 1 or period 2

  One of the following two courses must be chosen:
  - MF2010 Component Design
  - MF2011 Systems Engineering

- **Technical profile Energy**
  - MJ2413 Energy and Environment
  - MJ2411 Renewable Energy Technology*
  - MJ2380 Introduction to Energy Systems Analysis and Applications
  *can also be chosen study year 5

- **Technical profile Production**
  - MG2029 Production Engineering - Planning and Control
  Notice! MG1024 Production must be chosen study year 3 to fulfil the requirements for MG2029
One of the following two courses must be chosen:
MG2028 CAD and Other IT Tools in Industrial Processes
MG2130 Modelling and Simulation of Industrial Processes

As well as one of the following courses must be chosen, either study year 4 or 5:
MG2009 Advanced Manufacturing Technology
MG2109 Advanced Manufacturing Technology, Extended Course
MG2110 Advanced Metrology
MG2022 Advanced CAD Modelling and Rapid Prototyping*
MG2135 PLM - Product Lifecycle Management
MG2036 Computer Aided Manufacturing - CAM
MG2038 Digital Factories**
MG2010 Modern Industrial Metrology*
*MG2028 prerequisites
**MG2130 prerequisites

• Technical profile Solid Mechanics
SE1025 FEM for Engineering Applications

One of the following two courses must be chosen:
SE2126 Material Mechanics
SE2132 Applied Elasticity with FEM

As well as one of the following courses must be chosen:
SE2860 FEM Modelling
SE2129 Fracture Mechanics and Fatigue
SE2134 Dynamic Problems in Solid Mechanics
SE2121 Introduction to Biomechanics

Year 4

Supplementary information
Course list:
https://www.kth.se/student/kurser/program/TINEM/HT17/arskurs1?l=en

CMAST-students at Masters programme, Industrial Management (TINEM)
A technical profile specified within the study year plan for Degree Programme in Mechanical Engineering must be chosen

One of the following profiles can be chosen:

• Technical profile Construction
MF2024 Robust and Probabilistic Design
MF2031 Advanced Prototyping*
*also possible to study in period 1 or period 2

One of the following two courses must be chosen:
MF2010 Component Design
MF2011 Systems Engineering

• Technical profile Energy
MJ2413 Energy and Environment
MJ2411 Renewable Energy Technology*
MJ2380 Introduction to Energy Systems Analysis and Applications
*can also be chosen study year 5

• Technical profile Production
MG2029 Production Engineering - Planning and Control
One of the following two courses must be chosen:
MG2028 CAD and Other IT Tools in Industrial Processes
MG2130 Modelling and Simulation of Industrial Processes

As well as one of the following courses must be chosen, either study year 4 or 5:
MG2009 Advanced Manufacturing Technology
MG2109 Advanced Manufacturing Technology, Extended Course
MG2110 Advanced Metrology
MG2022 Advanced CAD Modelling and Rapid Prototyping*
MG2135 PLM - Product Lifecycle Management
MG2036 Computer Aided Manufacturing - CAM
MG2038 Digital Factories**
MG2010 Modern Industrial Metrology*

*MG2028 prerequisites
**MG2130 prerequisites

- Technical profile Solid Mechanics
  SE1025 FEM for Engineering Applications

One of the following two courses must be chosen:
SE2126 Material Mechanics
SE2132 Applied Elasticity with FEM

As well as one of the following courses must be chosen:
SE2860 FEM Modelling
SE2129 Fracture Mechanics and Fatigue
SE2134 Dynamic Problems in Solid Mechanics
SE2121 Introduction to Biomechanics

Year 5

International Profile, french (INTF)

Year 1

Year 2

Mandatory courses (66.0 credits)

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<td>French B1</td>
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<tr>
<td>MF1016</td>
<td>Basic Electrical Engineering</td>
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<td>First cycle</td>
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<tr>
<td>MF1044</td>
<td>Machine Components</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1026</td>
<td>Manufacturing Technology</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>
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<tr>
<td>SG1140</td>
<td>Mechanics II</td>
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Supplementary information

International profile in French.

Year 3

Mandatory courses (12.0 credits)

<table>
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<th>Course name</th>
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Supplementary information

During study year 3, students at an international profile choose one of the specialisations included in the regular curriculum for the degree programme in Mechanical Engineering.
The course ML1018 Fundamental Industrial Statistics, should not be read by students attending the international profile. Instead the courses SF1633 Differential Equations and ME1003 Industrial Management, basic course, should be read.

The exchange semester is during year 3 fall or spring, depending on the exchange university.

A degree project for Degree of Bachelor must be chosen during study year 3, independently of chosen masters programme:

Master's programmes leading to Master of Science in Engineering degree:

- Aerospace Engineering
- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
- Integrated Product Design
  - Track, Innovation Management and Product Development
- Production Engineering Management
- Engineering Design
  - Track, Combustion Engineering
  - Track, Machine Design
  - Track, Mechatronics
- Nuclear Energy Engineering
- Applied and Computational Mathematics
- Naval Architecture
- Sustainable Technology
- Engineering Mechanics
  - Track, Fluid Mechanics
  - Track, Solid Mechanics
  - Track, Sound and Vibrations

Some Master programs require specific courses during year 3.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.
Year 5

International Profile, spanish (INTS)

Year 1

Year 2

Mandatory courses (66.0 credits)

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<td>First cycle</td>
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<tr>
<td>MF1044</td>
<td>Machine Components</td>
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<td>First cycle</td>
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<tr>
<td>MG1026</td>
<td>Manufacturing Technology</td>
<td>6.0</td>
<td>First cycle</td>
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<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>
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<td>SE1010</td>
<td>Solid Mechanics, Basic Course with Project</td>
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<td>First cycle</td>
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<tr>
<td>SG1140</td>
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Supplementary information

International profile in Spanish.
The exchange semester is during year 3 fall or spring, depending on the exchange university.
Information is based upon the curriculum for academic year 2013/2014. Changes may occur.

Year 3

Mandatory courses (12.0 credits)

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<th>Course code</th>
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<th>Credits</th>
<th>Edu. level</th>
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<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1633</td>
<td>Differential Equations I</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

Supplementary information

During study year 3, students at an international profile choose one of the specialisations included in the regular curriculum for the degree programme in Mechanical Engineering.
The course ML1018 Fundamental Industrial Statistics, should not be read by students attending the international profile. Instead the courses SF1633 Differential Equations and ME1003Industrial Management, basic course should be read.

The exchange semester is during year 3 fall or spring, depending on the exchange university.

A degree project for Degree of Bachelor must be chosen during study year 3, independently of chosen masters programme.
Master’s programmes leading to Master of Science in Engineering degree:

- Aerospace Engineering
- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
- Integrated Product Design
  - Track, Innovation Management and Product Development
- Production Engineering Management
- Engineering Design
  - Track, Combustion Engineering
  - Track, Machine Design
  - Track, Mechatronics
- Nuclear Energy Engineering
- Applied and Computational Mathematics
- Naval Architecture
- Sustainable Technology
- Engineering Mechanics
  - Track, Fluid Mechanics
  - Track, Solid Mechanics
  - Track, Sound and Vibrations

Some Master programs require specific courses during year 3.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

Year 5

International Profile, german (INTT)

Year 1

Year 2

Mandatory courses (66.0 credits)

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<td>German B1</td>
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<td>First cycle</td>
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<td>MF1044</td>
<td>Machine Components</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>MG1026</td>
<td>Manufacturing Technology</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>
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<td>MJ1112</td>
<td>Applied Thermodynamics</td>
<td>9.0</td>
<td>First cycle</td>
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<td>SE1010</td>
<td>Solid Mechanics, Basic Course with Project</td>
<td>12.0</td>
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</table>
### Appendices

**Appendix 1**

**Course Code**

<table>
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<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
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<td>SG1140</td>
<td>Mechanics II</td>
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</table>

**Supplementary Information**

International profile in German.
The exchange semester is during year 3 fall or spring, depending on the exchange university.
Information is based upon the curriculum for academic year 2013/2014. Changes may occur.

**Year 3**

**Mandatory courses (12.0 credits)**

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<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
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<tbody>
<tr>
<td>ME1003</td>
<td>Industrial Management, Basic Course</td>
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<td>First cycle</td>
</tr>
<tr>
<td>SF1633</td>
<td>Differential Equations I</td>
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<td>First cycle</td>
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</table>

**Supplementary Information**

During study year 3, students at an international profile choose one of the specialisations included in the regular curriculum for the degree programme in Mechanical Engineering.
The course ML1018 Fundamental Industrial Statistics, should not be read by students attending the international profile. Instead the courses SF1633 Differential Equations and ME1003 Industrial Management, basic course should be read.

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- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
- Integrated Product Design
  - Track, Innovation Management and Product Development
- Production Engineering Management
- Engineering Design
  - Track, Combustion Engineering
  - Track, Machine Design
  - Track, Mechatronics
- Nuclear Energy Engineering
- Applied and Computational Mathematics
- Naval Architecture
- Sustainable Technology
- Engineering Mechanics
  - Track, Fluid Mechanics
  - Track, Solid Mechanics
  - Track, Sound and Vibrations

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Study Programme for Degree Programme in Mechanical Engineering batch autumn 14. Appendix 1, page 13 of 34
Some Masterprograms require specific courses during year 3.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

Year 5

Track, Innovation Management and Product Development (IPDE)

Year 1

Year 2

Year 3

Mandatory courses (18.0 credits)

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<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
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Conditionally elective courses

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<th>Course name</th>
<th>Credits</th>
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<td>First cycle</td>
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<td>EL1010</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
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<td>ME2015</td>
<td>Project Management: Leadership and Control</td>
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<td>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1024</td>
<td>Production</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>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</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>
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<tr>
<td>SG1220</td>
<td>Fluid Mechanics for Engineers</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>
Supplementary information

At least two of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

or a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TIPDM/HT17/arskurs1?l=en

Year 5

Track, Combustion Engineering (IPUA)

Year 1

Year 2

Year 3

Mandatory courses (24.0 credits)

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<td>MF1045</td>
<td>Product realization - Engineering Design</td>
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<td>MH1004</td>
<td>Engineering Materials</td>
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<td>First cycle</td>
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<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
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Conditionally elective courses

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<tr>
<td>ME2015</td>
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<td>MG1002</td>
<td>Automation Technology</td>
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<td>MG1024</td>
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<td>6.0</td>
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*SG1217 can be chosen instead of SG1220.*

**Supplementary information**

At least one of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

**Year 4**

**Supplementary information**

*Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.*

https://www.kth.se/student/kurser/program/TIPUM/HT17/arskurs1?l=en
Year 5

Track, Machine Design (IPUB)

Year 1

Year 2

Year 3

Mandatory courses (18.0 credits)

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<th>Course name</th>
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<td>MH1004</td>
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<td>6.0</td>
<td>First cycle</td>
</tr>
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Conditionally elective courses

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<td>Heat Transfer</td>
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<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>SE1025</td>
<td>FEM for Engineering Applications</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>
</tbody>
</table>

Supplementary information

At least two of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

**Year 4**

**Supplementary information**

*Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.*

https://www.kth.se/student/kurser/program/TIPUM/HT17/arskurs1?l=en

**Year 5**

**Track, Mechatronics (IPUC)**

**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>
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</thead>
<tbody>
<tr>
<td>DD1321</td>
<td>Applied Programming and Computer Science</td>
<td>9.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</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>ME2015</td>
<td>Project Management: Leadership and Control</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1024</td>
<td>Production</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>SD1116</td>
<td>Design of Silent and Vibration-free Products</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>
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</tr>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</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>
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Supplementary information

One of the following degree project for Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TIPUM/HT17/arskurs1?l=en

Year 5

Master, Naval Architecture (MRS)

Year 1

Year 2

Year 3

Mandatory courses (18.0 credits)

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<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</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>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General 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>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1024</td>
<td>Production</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>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
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<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>
</tbody>
</table>

One of the courses SG1220 or SG1217 must be chosen for eligibility to the Master's programme, Naval Architecture.

Supplementary information

At least two of the conditionally elective courses must be chosen, and at least one of the courses SG1217 or SG1220 must be chosen.

One of the following degree project for Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TMRSM/HT17/arskurs1?l=en
### Year 5

#### Master, Mathematics (MTH)

### Year 1

### Year 2

### Year 3

#### Mandatory courses (24.0 credits)

<table>
<thead>
<tr>
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<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
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</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1632</td>
<td>Complementary Course in Differential Equations and Transforms</td>
<td>3.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SF1901</td>
<td>Probability Theory and Statistics</td>
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<td>SF1904</td>
<td>Markov Processes, Basic Course</td>
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<td>First cycle</td>
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#### 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>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General 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>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1024</td>
<td>Production</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>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</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>
</tbody>
</table>

#### Supplementary information

At least two of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

**During study year 4 and 5, CMAST students must follow one of the following technical profiles to fulfill the requirements for a Master of Science in Engineering:**

### CMAST-students at Masters programme, Applied and Computational Mathematics (MTH)

A technical profile specified within the study year plan for Degree Programme in Mechanical Engineering must be chosen

One of the following profiles can be chosen:

- **Technical profile Production and energy**
  - MG2130 Modelling and Simulation of Industrial Processes
  - MJ2380 Introduction to Energy Systems Analysis and Applications

- **Technical profile Solid Mechanics**
  - SE1025 FEM for Engineering Applications
  - SE2126 Material Mechanics
  - SE2132 Applied Elasticity with FEM
  - As well as one of the following courses must be chosen:
    - SE2860 FEM Modelling
    - SE2129 Fracture Mechanics and Fatigue
    - SE2134 Dynamic Problems in Solid Mechanics
    - SE2121 Introduction to Biomechanics

### Year 4

**Supplementary information**

*Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.*

https://www.kth.se/student/kurser/program/TTMAM/HT17/arskurs1?l=en

**CMAST-students at Masters programme, Applied and Computational Mathematics (TTMAM)**

A technical profile specified within the study year plan for Degree Programme in Mechanical Engineering must be chosen

One of the following profiles can be chosen:

- **Technical profile Production and energy**
  - MG2130 Modelling and Simulation of Industrial Processes
  - MJ2380 Introduction to Energy Systems Analysis and Applications

- **Technical profile Solid Mechanics**
  - SE1025 FEM for Engineering Applications
  - SE2126 Material Mechanics
  - SE2132 Applied Elasticity with FEM
As well as one of the following courses must be chosen:
SE2860 FEM Modelling
SE2129 Fracture Mechanics and Fatigue
SE2134 Dynamic Problems in Solid Mechanics
SE2121 Introduction to Biomechanics

Year 5

Master, Nuclear Energy Engineering (NEE)

Year 1

Year 2

Year 3

Mandatory courses (26.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
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</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>SH1012</td>
<td>Modern Physics</td>
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Conditionally elective courses

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<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
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</tr>
<tr>
<td>ME2015</td>
<td>Project Management: Leadership and Control</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
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<td>MG1024</td>
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<tr>
<td>MJ1401</td>
<td>Heat Transfer</td>
<td>6.0</td>
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<td>FEM for Engineering Applications</td>
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</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>
</tbody>
</table>

One of the courses SG1220 or SG1217 must be chosen.
Supplementary information
At least two of the conditionally elective courses must be chosen, and at least one of the courses SG1217 or SG1220 must be chosen.

One of the following degree project for Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

Year 4
Supplementary information
Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TNEEM/HT17/arskurs1?l=e

Year 5

Master, Production Engineering and Management (PRM)

Year 1

Year 2

Year 3

Mandatory courses (30.0 credits)

<table>
<thead>
<tr>
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<th>Course name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</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>MG1024</td>
<td>Production</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
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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>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
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<td>ME2015</td>
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<td>Fluid Mechanics for Engineers</td>
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Supplementary information

One of the following degree project for Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

Year 4

Supplementary information

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https://www.kth.se/student/kurser/program/TPRMM/HT17/arskurs1?l=en
### Year 5

**Master, Sustainable Energy Engineering (SUE)**

### Year 1

### Year 2

### Year 3

#### Mandatory courses (24.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>MJ1401</td>
<td>Heat Transfer</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
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</table>

#### Conditionally elective courses

<table>
<thead>
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<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>
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<td>First cycle</td>
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#### 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>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General 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>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MG1024</td>
<td>Production</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>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>
Supplementary information

One of the conditionally elective courses SG1217 or SG1220 must be chosen.

One of the following degree project for Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TSUEM/HT17/arskurs1?l=en

Year 5

Master, Sustainable Technology (SUT)

Year 1

Year 2

Year 3

Mandatory courses (24.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
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<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
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<td>First cycle</td>
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<td>MJ2613</td>
<td>Sustainable Development</td>
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<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
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<td>First cycle</td>
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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>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
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</table>
### Course Study Programme for Degree Programme in Mechanical Engineering batch autumn 14.

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
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<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
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<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General 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>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>MG1024</td>
<td>Production</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>MJ1401</td>
<td>Heat Transfer</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>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</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>
</tbody>
</table>

**Supplementary information**

At least two of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

**CMAST-students at Masters programme, Sustainable Technology (TSUTM)**

A technical profile specified within the study year plan for Degree Programme in Mechanical Engineering must be chosen

*One of the following profiles can be chosen:*

- **Technical profile Construction**
  - MF2024 Robust and Probabilistic Design
  - MF2031 Advanced Prototyping*
  - *also possible to study in period 1 or period 2

  *One of the following two courses must be chosen:
  - MF2010 Component Design
  - MF2011 Systems Engineering

- **Technical profile Energy**
  - MJ2413 Energy and Environment
MJ2411 Renewable Energy Technology*
MJ2380 Introduction to Energy Systems Analysis and Applications
*can also be chosen study year 5

- **Technical profile Production**
  MG2029 Production Engineering - Planning and Control
  Notice! MG1024 Production must be chosen study year 3 to fulfil the requirements for MG2029
  
  *One of the following two courses must be chosen:*
  MG2028 CAD and Other IT Tools in Industrial Processes
  MG2130 Modelling and Simulation of Industrial Processes
  *As well as one of the following courses must be chosen, either study year 4 or 5:*
  MG2009 Advanced Manufacturing Technology
  MG2109 Advanced Manufacturing Technology, Extended Course
  MG2110 Advanced Metrology
  MG2022 Advanced CAD Modelling and Rapid Prototyping*
  MG2135 PLM - Product Lifecycle Management
  MG2036 Computer Aided Manufacturing - CAM
  MG2038 Digital Factories**
  MG2010 Modern Industrial Metrology*
  *MG2028 prerequisites
  **MG2130 prerequisites

- **Technical profile Solid Mechanics**
  SE1025 FEM for Engineering Applications
  
  *One of the following two courses must be chosen:*
  SE2126 Material Mechanics
  SE2132 Applied Elasticity with FEM
  *As well as one of the following courses must be chosen:*
  SE2860 FEM Modelling
  SE2129 Fracture Mechanics and Fatigue
  SE2134 Dynamic Problems in Solid Mechanics
  SE2121 Introduction to Biomechanics

### Year 4

**Supplementary information**

*Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.*

https://www.kth.se/student/kurser/program/TINEM/HT17/arskurs1?l=en

**CMAST-students at Masters programme, Sustainable Technology (TSUTM)**

A technical profile specified within the study year plan for Degree Programme in Mechanical Engineering must be chosen

One of the following profiles can be chosen:

- **Technical profile Construction**
  MF2024 Robust and Probabilistic Design
  MF2031 Advanced Prototyping*
  *also possible to study in period 1 or period 2

  *One of the following two courses must be chosen:*
  MF2010 Component Design
  MF2011 Systems Engineering
- **Technical profile Energy**
  MJ2413 Energy and Environment
  MJ2411 Renewable Energy Technology*
  MJ2380 Introduction to Energy Systems Analysis and Applications
  *can also be chosen study year 5

- **Technical profile Production**
  MG2029 Production Engineering - Planning and Control

  *One of the following two courses must be chosen:*
  MG2028 CAD and Other IT Tools in Industrial Processes
  MG2130 Modelling and Simulation of Industrial Processes

  *As well as one of the following courses must be chosen, either study year 4 or 5:*
  MG2009 Advanced Manufacturing Technology
  MG2109 Advanced Manufacturing Technology, Extended Course
  MG2110 Advanced Metrology
  MG2022 Advanced CAD Modelling and Rapid Prototyping*
  MG2135 PLM - Product Lifecycle Management
  MG2036 Computer Aided Manufacturing - CAM
  MG2038 Digital Factories**
  MG2010 Modern Industrial Metrology*
  *MG2028 prerequisites
  **MG2130 prerequisites

- **Technical profile Solid Mechanics**
  SE1025 FEM for Engineering Applications

  *One of the following two courses must be chosen:*
  SE2126 Material Mechanics
  SE2132 Applied Elasticity with FEM

  *As well as one of the following courses must be chosen:*
  SE2860 FEM Modelling
  SE2129 Fracture Mechanics and Fatigue
  SE2134 Dynamic Problems in Solid Mechanics
  SE2121 Introduction to Biomechanics

### Year 5

**Track, Fluid Mechanics (TEMA)**

### Year 1

### Year 2

### Year 3

**Mandatory courses (18.0 credits)**

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<th>Credits</th>
<th>Edu. level</th>
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</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
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</table>
### Conditionally elective courses

<table>
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<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
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<td>First cycle</td>
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<td>EL1000</td>
<td>Automatic Control, General Course</td>
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<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General 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>MG1002</td>
<td>Automation Technology</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>MG1024</td>
<td>Production</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>SD1116</td>
<td>Design of Silent and Vibration-free Products</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</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>
</tbody>
</table>

One of the courses SG1220 or SG1217 must be chosen.

### Supplementary information

At least two of the conditionally elective courses must be chosen, and at least one of the courses SG1217 or SG1220 must be chosen.

One of the following degree project for Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
- MG110X Degree Project in Production Engineering, First Cycle
- SA118X Degree Project in Mechanical Engineering, First Level

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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

### Year 4

**Supplementary information**

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TTEMM/HT17/arskurs1?l=en
### Year 5

**Track, Solid Mechanics (TEMB)**

### Year 1

### Year 2

### Year 3

#### Mandatory courses (24.0 credits)

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<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>ML1018</td>
<td>Fundamental Industrial Statistics</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>SE1025</td>
<td>FEM for Engineering Applications</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>

#### Conditionally elective courses

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<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
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</thead>
<tbody>
<tr>
<td>DD1320</td>
<td>Applied Computer Science</td>
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<td>First cycle</td>
</tr>
<tr>
<td>EL1000</td>
<td>Automatic Control, General Course</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>EL1010</td>
<td>Automatic Control, General 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>
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<td>Automation Technology</td>
<td>6.0</td>
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<td>6.0</td>
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<td>First cycle</td>
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<tr>
<td>SG1217</td>
<td>Fluid Mechanics, Basic Course</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>SG1220</td>
<td>Fluid Mechanics for Engineers</td>
<td>6.0</td>
<td>First cycle</td>
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</table>

**Supplementary information**

At least one of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
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 Bachelor thesis. Registration must be done before the course registration and before the thesis work starts.

Year 4

Supplementary information

Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master’s programmes with programme syllabuses established in advance.

https://www.kth.se/student/kurser/program/TTEMM/HT17/arskurs1?l=en

Year 5

Track, Sound and Vibrations (TEMC)

Year 1

Year 2

Year 3

Mandatory courses (24.0 credits)

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<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MF1045</td>
<td>Product realization - Engineering Design</td>
<td>6.0</td>
<td>First cycle</td>
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<tr>
<td>MH1004</td>
<td>Engineering Materials</td>
<td>6.0</td>
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<td>Fundamental Industrial Statistics</td>
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</table>

Conditionally elective courses

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</tr>
</thead>
<tbody>
<tr>
<td>DD1320</td>
<td>Applied Computer Science</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
</tbody>
</table>
| EL1000      | Automatic Control, General Course
EL1010 can be chosen instead of EL1000. | 6.0     | First cycle|
| EL1010      | Automatic Control, General Course
EL1000 can be chosen instead of EL1010. | 6.0     | First cycle|
| ME2015      | Project Management: Leadership and Control               | 6.0     | Second cycle|
| MG1002      | Automation Technology                                    | 6.0     | First cycle|
### Supplementary information

*At least one of the conditionally elective courses must be chosen, and one of the following degree project for a Degree of Bachelor must be chosen, independently of chosen masters programme:*

- MF130X Degree Project in Machine Design, First Cycle
- MF131X Degree Project in Integrated Product Development, First Cycle
- MF133X Degree Project in Mechatronics, First Cycle
- MJ146X Degree Project in Technology and Sustainable Development, First Cycle
- AL126X Degree Project in Technology and Sustainable Development, First Cycle
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### Year 4

**Supplementary information**

*Studies on advanced level, year 4 and 5, within the Degree Programme in Mechanical Engineering takes place within a chosen Master program, from a range of Master's programmes with programme syllabuses established in advance.*

https://www.kth.se/student/kurser/program/TTEMM/HT17/arskurs1?l=en

### Year 5
Appendix 2: Specialisations

Degree Programme in Mechanical Engineering (CMAST), Programme syllabus for studies starting in autumn 2014

- Master, Aerospace Engineering (AEE)
- Master, Vehicle Engineering (FOR)
- Master, Industrial Management (INE)
- International Profile, French (INTF)
- International Profile, Spanish (INTS)
- International Profile, German (INTT)
- Track, Innovation Management and Product Development (IPDE)
- Track, Combustion Engineering (IPUA)
- Track, Machine Design (IPUB)
- Track, Mechatronics (IPUC)
- Master, Naval Architecture (MRS)
- Master, Mathematics (MTH)
- Master, Nuclear Energy Engineering (NEE)
- 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)