



# Programme syllabus

[An accessible version of the syllabus can be found in the Course and programme directory.](#)

## Degree Programme in Mechanical Engineering 300 credits

Civilingenjörsutbildning i maskinteknik

*Valid for students admitted to the education from autumn 21 (HT - Autumn term; VT - Spring term).*

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

### Programme objectives

In addition to the objectives specified in the Swedish Higher Education Ordinance, a graduate Master of Science in Engineering from Mechanical Engineering at KTH shall:

#### Knowledge and understanding

- demonstrate broad knowledge within the chosen technical field, including knowledge in mathematics and natural science, and substantial specialised knowledge within certain parts of the field

- possess good knowledge and expertise in the issues and areas of sustainable development, gender equality, equal opportunities and diversity
- have a broad scientific foundation that enables them to work within a number of technical fields with product development, production and manufacturing technology and energy issues. This may include material selection, energy sources, production methods of the assessment of economic and environmental impact, etc.

## Skills and abilities

- demonstrate a good ability to, independently and in a group, apply knowledge and skills in practice while taking into account relevant scientific, professional/profession-related and societal assessments and standpoints
- demonstrate proficiency in being able to formulate, analyse, evaluate and manage technical problems and issues from a systems perspective, with a holistic view of their life cycle, from concept/requirements to specification, development, operation and decommissioning, and an ability to set boundaries, minimise necessary resource consumption and manage processes for problem-solving/realisation
- show some ability to lead operations at different organisational levels, in different types of organisational life-cycle stages, within different types of logical frameworks
- possess the requisite personal and professional skills, such as in the area of language, leadership, project management, sustainable systems analysis, gender equality, equal opportunities and communication, to work as an engineer in a management position or as a leader within a technology-intensive company

## Ability to make judgements and adopt a standpoint

- have a particularly good understanding of the fact that engineering problems are often complex, can be incompletely defined and sometimes involve conflicting conditions
- adopt a reflective approach
- demonstrate accountability with regard to issues within technical, organisational, economic, ecological and societal systems.

The KTH local Degree Ordinance can be found in the KTH regulatory framework [www.kth.se](http://www.kth.se)

# Extent and content of the programme

The Degree Programme in Mechanical Engineering comprises 300 credits, which corresponds to 5 years of full-time studies at a normal study pace (10 semesters).

The programme's first three years (180 credits) are primarily first cycle.

During the two final years (120 credits), the student undertakes a Master's programme.

Master's programme courses are conducted primarily in the second cycle.

## International profile

The Degree Programme in Mechanical Engineering contains an international study profile. Year 2 offers language studies with subsequent exchange studies in year 3 at one of the European universities involved in the cooperation.

**The academic year 2021/2022 offers the following Master's programmes for a Degree of Master of Science in Mechanical Engineering\*:**

- Aerospace Engineering
- Vehicle Engineering
- Sustainable Energy Engineering
- Industrial Management
- Production Engineering and Management  
Profiles: *Industrial IT-systems, Production development, Production engineering and development, Industrial welding*
- Engineering Design
- Integrated Product Design  
*Track, Innovation Management and Product Development*
- Nuclear Energy Engineering
- Naval Architecture
- Applied and Computational Mathematics
- Engineering Mechanics
- Sustainable Technology

*\*The range of offered Master's programmes may be revised. An updated list of elective Master's programmes can be found on the KTH student web for each respective academic year.*

*For students undertaking any of the following Master's programmes:*

*Industrial Management, Applied and Computational Mathematics* or *Sustainable Technology*, a supplementary engineering profile is required to obtain a Degree of Master of Science in Mechanical Engineering.

The following international Master's programmes also leads to a Degree of Master of Science in Mechanical Engineering. For information about application and selection, see the respective programmes.

- Environomical Pathways for Sustainable Energy Systems (SELECT)
- Turbomachinery Aeromechanic University Training (THRUST)
- Management and Engineering of Environment and Energy (ME3)

### **Language of instruction**

The language of instruction for the first three years of first cycle is mainly Swedish, but English literature is common. The courses in the final two years are mostly conducted in English.

## Eligibility and selection

General admission requirements and the following special admission requirements must be fulfilled in order to be admitted to the Degree Programme in Mechanical Engineering:

### **Upper-secondary education from 1 July 2011 and upper-secondary adult education from 1 July 2012 (Gy11/Vux12)**

Field-specific entry requirement A9

#### **Specific admission requirements corresponding to:**

Mathematics 4, Physics 2 and Chemistry 1.

A grade of E is required as a minimum in each of the subjects.

### ***Upper-secondary education before 1 July 2011 and upper-secondary adult education before 1 July 2012***

Field-specific entry requirement 9

#### **Specific admission requirements corresponding to:**

Mathematics E, Physics B and Chemistry A.

In each of the subjects, a minimum grade of Pass or 3 is required.

# Implementation of the education

## Structure of the education

### Academic year

Each academic year consists of two semesters which are 20 weeks each, and each semester is further divided into two study periods.

### Years 1-3, studies at first cycle

The programme is organised around courses in applied subjects relating to mathematics, engineering science and technology. The teaching and use of professional skills and abilities of great importance to a certified engineer, for example, corporate and societal aspects, communication and sustainable development, are integrated into the courses. To create a unified whole, the programme emphasises cooperation between different subjects, both within a specific year and between years.

The first 3 years conclude with a degree project for a Degree of Bachelor worth 15 credits within a chosen technical field.

### Years 4-5 Studies at second cycle

The Master's programmes consist mainly of advanced courses and a degree project within one and the same engineering science discipline.

Students on the Mechanical Engineering Programme can choose from a range of Master's programmes\* with programme syllabuses established in advance.

***\* Information about Master's programmes that lead to a Degree of Master of Science in Engineering, are found under the heading "Extent and content of the programme".***

## Courses

The programme is course-based. Lists of courses are included in appendix 1.

The programme consists of compulsory, conditionally elective, recommended and optional courses. The compulsory and conditionally elective courses are defined for each year in course lists. The goals, entrance qualifications, content and course requirements for each course can be found in the official course syllabuses.

The forms of teaching and examination vary between courses. These are indicated in each official course syllabus.

The optional courses can be chosen from KTH's range of offered courses. Credits from courses at other universities/higher education institutions can also be transferred if the qualification requirements are met.

***The following limitations apply to optional courses:***

- Optional courses may not be taken in year 1.
- The number of credits that may be chosen per semester is limited to 35.
- An optional course may not correspond to a significant extent to an existing programme course or an already credited course
- Higher education preparatory courses may not be counted as optional courses
- Optional courses may be chosen but should be relevant to the professional role of engineer

## 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.

Grading scale is found in the course syllabus

## Conditions for participation in the programme

Participation requires admission to courses within the programme and course registration.

For further studies, special admission requirements for the course are to be fulfilled. Special admission requirements are listed in the respective course syllabus.

### **Choosing an international profile**

During the spring term in year 1, choices are made for an international profile, ie of the languages French, Spanish or German

### ***Special admission requirements for international profile***

#### **For studies in year 2**

- at least 45 credits according to the course list of the programme syllabus from year 1. This is to be achieved by the end of the re-examination period in August.
- proficient in either Spanish, German or French equivalent to level A1 and demonstrated through a compulsory placement test taken prior to the choice of courses.

### **For studies in year 3**

- at least 90 credits according to the course list of the programme syllabus from year 1 and 2. This is to be achieved by the end of the re-examination period in August.
- the student must be proficient in either Spanish, German or French equivalent to level B1.
- fulfill any requirements of the host university and be formally accepted as an exchange student there.

### **Choice of Master's programme**

Prior to year 4/ Master's programme year 1, second cycle, the student chooses a Master's programme within the framework of their Degree Programme.

Choice of Master's programme is made by the students within the Degree Programme according to instructions from the KTH admissions office.

### **Admission requirements for Master programmes**

In order to be eligible for second cycle studies within KTH:s Master of Science programmes, 165 credits are required from year 1-3, of which at least 110 credits from year 1 - 2. A degree project, first cycle, must be completed before the studies on the master's program commence. Possible additional special admission requirements exist and appear in the respective programme syllabus.

## **Degree project**

### ***Degree Project, First Cycle***

Within the degree programme a degree project, first cycle, which comprises 15 credits, is included. The degree project course can be commenced when the special admission requirements listed in the course syllabus are met.

### ***Degree project, Second Cycle***

Within the degree programme a degree project, second cycle, which comprises 30 credits, is included. The degree project course forms the final part of the degree programme in mechanical engineering. The degree project course can be commenced when the special admission requirements listed in the course syllabus are met.

## **Degree**

### **Title of general qualification, first cycle**

***Bachelor of Science (180 credits)***

Teknologie kandidatexamen

**Title of professional qualifications, second cycle**  
***Master of Science in Engineering***  
Civilingenjörsexamen

Optional introductory courses and preparatory courses cannot be included as part of the degree.

Courses whose content is similar to one or more other courses within the programme cannot be counted as part of the 300 credits that form the basis for the degree.

Appendix 1 - Course list

Appendix 2 - Programme syllabus descriptions





# Appendix 1: Course list

## Degree Programme in Mechanical Engineering (CMAST)

### General courses

#### Year 1

#### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">DD1310</a>	Programming Techniques	6.0 hp	First cycle
<a href="#">MF1001</a>	Mechanical Engineering, introductory course	9.0 hp	First cycle
<a href="#">MJ1104</a>	Practical Introduction to Energy Technology	6.0 hp	First cycle
<a href="#">SF1624</a>	Algebra and Geometry	7.5 hp	First cycle
<a href="#">SF1625</a>	Calculus in One Variable	7.5 hp	First cycle
<a href="#">SF1626</a>	Calculus in Several Variables	7.5 hp	First cycle
<a href="#">SG1130</a>	Mechanics I	9.0 hp	First cycle
<a href="#">SK1110</a>	Electromagnetism and Waves	7.5 hp	First cycle

#### Year 2

#### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu.
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			level
<a href="#">MF1016</a>	Basic Electrical Engineering	9.0 hp	First cycle
<a href="#">MF1044</a>	Machine Components	6.0 hp	First cycle
<a href="#">MG1026</a>	Manufacturing Technology	6.0 hp	First cycle
<a href="#">MJ1112</a>	Applied Thermodynamics	9.0 hp	First cycle
<a href="#">SE1010</a>	Solid Mechanics, Basic Course with Project	12.0 hp	First cycle
<a href="#">SF1514</a>	Numerical Methods, Basic Course	6.0 hp	First cycle
<a href="#">SF1633</a>	Differential Equations I	6.0 hp	First cycle
<a href="#">SG1140</a>	Mechanics II	6.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">MG1028</a>	Introductory 3D CAD <i>Mandatory for students admitted from COPEN</i>	1.5 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

## Information regarding conditionally elective courses

The course MG1028 is mandatory for students admitted to CMAST from Degree Programme Open Entrance (COPEN)

## Year 3

### Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">AL126X</a>	Degree Project in Technology and Sustainable Development, First Cycle	15.0 hp	First cycle
<a href="#">MF130X</a>	Degree Project in Machine Design, First Cycle	15.0 hp	First cycle
<a href="#">MF131X</a>	Degree Project in Integrated Product Development, First Cycle	15.0 hp	First cycle
<a href="#">MF133X</a>	Degree Project in Mechatronics, First Cycle	15.0 hp	First cycle
<a href="#">MG110X</a>	Degree Project in Production Engineering, First Cycle	15.0 hp	First cycle
<a href="#">MJ146X</a>	Degree Project in Sustainable Energy Engineering, First Cycle	15.0 hp	First cycle
<a href="#">SA118X</a>	Degree Project in Mechanical Engineering, First Level	15.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

During year 3, an in-depth study in the field of mechanical engineering takes place by choosing conditional optional courses.

Which courses are chosen is governed by which master's program is planned to be taken during the two final years of the program.

Under each specialisation, there is information about the courses to be taken to give admission to the various master's programs that are read in the two final years.

During the spring term in year 3, a bachelor's degree project in a chosen area will be read.

Masters programs leading to the degree in Master of Science in Mechanical Engineering are specified in the program syllabus for batch Autumn 2020.

*For more information about the qualifying courses, see respective directions.*

## Information regarding conditionally elective courses

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

## Year 4

### Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

During the fourth study year of the *Degree Programme in Mechanical Engineering*, a master's programme must be studied.

Information about which master's programme can be studied, can be found in the programme syllabus. Changes may occur.

For students who chooses to study one of the following master's programme:

**Industrial Economics (TINEM), Applied Mathematics and Computational Mathematics (TTMAM) or Technology and Sustainable Development (TSUTM)**

it is required that a supplementary technical profil is read in order to obtain a Degree of Master of Science in Engineering.

The following technical profiles can be studied during study year 4-5 (ie during study year 1-2 of the master's programme):

- Industrial Management (*Technical Profile: Engineering Design, Energy, Production or Solid Mechanics*)
- Applied and Computational Mathematics (*Technical Profile: Production and Energy or Solid Mechanics*)
- Sustainable Technology (*Technical Profile: Engineering Design, Energy, Production or Solid Mechanics*)

## Master, Aerospace Engineering (AEE)

### Year 3

#### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle

SF1915	Probability Theory and Statistics	6.0 hp	First cycle
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## Conditionally elective courses

Code	Name	Credits	Edu. level
SG1217	Fluid Mechanics, Basic Course <i>One of the courses SG1217 or SG1220 must be chosen.</i>	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers <i>One of the courses SG1220 or SG1217 must be chosen.</i>	6.0 hp	First cycle

## Recommended courses

Code	Name	Credits	Edu. level
DD1320	Applied Computer Science	6.0 hp	First cycle
ME2016	Project Management: Leadership and Control	6.0 hp	Second cycle
MG1002	Automation Technology	6.0 hp	First cycle
MG1024	Production	6.0 hp	First cycle
MH1023	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle
SD1116	Design of Silent and Vibration-free Products	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**One** of the conditionally elective courses SG1217 or SG1220 must be chosen during study year 3.

# Master, Vehicle Engineering (FOR)

## Year 3

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

### Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

At least one of the conditionally elective courses must be chosen during study year 3.

# Master, Industrial Management (INE)

## Year 3

### Mandatory courses (36.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">ME2163</a>	Leading People and Organizations in Different Contexts	6.0 hp	Second cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle

SD1116	Design of Silent and Vibration-free Products	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as conditional elective courses under the heading "General" - "General courses".

### **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 during study year 4-5:*

- **Technical profile Construction**

*Courses corresponding to at least 18 credits, listed below, shall be taken during study year 4-5:*

MF2101 Machine Design 6 credits

MF2102 Machine Design Project 6 credits

MF2010 Component Design 6 credits

MF2011 Systems Engineering 9 credits

MF2019 CAD 3D-modelling and Visualization 6 credits \*

MF2024 Robust and Probabilistic Design 6 credits

*\* will be able to study in period 2 and 4*

- **Technical profile Energy**

MJ2413 Energy and Environment 6 credits

MJ2411 Renewable Energy Technology 6 credits \*

MJ2380 Introduction to Energy Systems Analysis and Applications 9 credits

*\*can also be chosen study year 5*

- **Technical profile Production**

MG2029 Production Engineering - Planning and Control 6 credits

*(MG1024 Production in study year 3, is the eligibility course for MG2029)*

*One of the following two courses must be chosen:*

MG2028 CAD and Other IT Tools in Industrial Processes 6 credits

MG2130 Modelling and Simulation of Industrial Processes 9 credits

*As well as one of the following courses must be chosen, either study year 4 or 5:*



MG2009 Advanced Manufacturing Technology 6 credits  
MG2109 Advanced Manufacturing Technology, Extended Course 9 credits  
MG2110 Advanced Metrology 9 credits  
MG2022 Advanced CAD Modelling and Rapid Prototyping 6 credits \*  
MG2135 PLM - Product Lifecycle Management 9 credits  
MG2036 Computer Aided Manufacturing - CAM 6 credits  
MG2038 Digital Factories 6 credits \*\*  
MG2010 Modern Industrial Metrology 6 credits \*  
\* **MG2028** prerequisites  
\*\* **MG2130** prerequisites

- **Technical profile Solid Mechanics**  
SE1025 FEM for Engineering Applications 6 credits

*One of the following two courses must be chosen:*

SE2126 Material Mechanics 9 credits  
SE2132 Applied Elasticity with FEM 9 credits

*As well as one of the following courses must be chosen:*

SE2860 FEM Modelling 8 credits  
SE2137 Fatigue 6 credits  
SE2139 Fracture Mechanics 6 credits  
SE2134 Dynamic Problems in Solid Mechanics 7,5 credits  
SE2121 Introduction to Biomechanics 9 credits

## Information regarding conditionally elective courses

**At least one** of the conditionally elective courses must be chosen during study year 3.

**Notice:** You need **MG1024 Production** for eligibility to the course **MG2029 Production Engineering - Planning and Control**, which is a mandatory course for students attending the Master's Programme Industrial Management (TINEM), Technical profile: Production

## Year 4

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

One of the following technical profile specified within the study year plan for Degree Programme in Mechanical Engineering, must be chosen during study year 4-5 (ie during study year 1-2 of the master's programme)

## Technical profiles, study year 4-5

(study year 1-2 of the master's programme)

- **Technical profile Construction**

Conditionally elective courses within the technical profile, corresponding to **at least 18 credits**, shall be taken during study year 4-5.

- **Technical profile Energy**

All conditionally elective courses within the technical profile, shall be taken during study year 4-5.

- **Technical profile Production**

Within the technical profile, the course *MG2029 Production Engineering - Planning and Control* should be read, as well as **one** of the courses *MG2028 CAD and Other IT Tools in Industrial Processes* or *MG2130 Modelling and Simulation of Industrial Processes*.

In addition to these courses, **one** of the other conditionally elective courses within the technical profile, should be read in year 4-5.

- **Technical profile Solid Mechanics**

Within the technical profile, the course *SE1025 FEM for Engineering Applications* should be read, as well as **one** of the courses *SE2126 Material Mechanics* or *SE2132 Applied Elasticity with FEM*.

In addition to these courses, **one** of the other conditionally elective courses within the technical profile, should be read in year 4-5.

## International Profile, french (INTF)

### Year 2

### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
LS1433	French A2 for Engineers	7.5 hp	First cycle
LS1434	French B1 for Engineers	7.5 hp	First cycle
MF1016	Basic Electrical Engineering	9.0 hp	First cycle
MF1044	Machine Components	6.0 hp	First cycle
SE1010	Solid Mechanics, Basic Course with Project	12.0 hp	First cycle
SF1514	Numerical Methods, Basic Course	6.0 hp	First cycle

SF1633	Differential Equations I	6.0 hp	First cycle
SG1140	Mechanics II	6.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
MG1028	Introductory 3D CAD <i>Mandatory for students admitted from COPEN</i>	1.5 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

## Information regarding conditionally elective courses

The course MG1028 is mandatory for students admitted to CMAST from Degree Programme Open Entrance (COPEN)

## Year 3

### Mandatory courses (27.0 Credits)

Code	Name	Credits	Edu. level
ME1003	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1026	Manufacturing Technology	6.0 hp	First cycle
MJ1112	Applied Thermodynamics	9.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

**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 courses *SF1915 Probability Theory and Statistics* and *MH1004 Engineering Materials*, should not be read by students attending the international profile.

However, the following courses should be included study year 3, **MG1026 Manufacturing Technology** and **MJ1112 Applied Thermodynamics**

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.

Masters programs leading to the degree in Master of Science in Mechanical Engineering are specified in the program syllabus for batch Autumn 2021.

For more information about the qualifying courses, see respective directions.

## International Profile, spanish (INTS)

### Year 2

#### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">LS1443</a>	Spanish A2 for Engineers	7.5 hp	First cycle
<a href="#">LS1448</a>	Spanish B1 for Engineers	7.5 hp	First cycle
<a href="#">MF1016</a>	Basic Electrical Engineering	9.0 hp	First cycle
<a href="#">MF1044</a>	Machine Components	6.0 hp	First cycle
<a href="#">SE1010</a>	Solid Mechanics, Basic Course with Project	12.0 hp	First cycle
<a href="#">SF1514</a>	Numerical Methods, Basic Course	6.0 hp	First cycle
<a href="#">SF1633</a>	Differential Equations I	6.0 hp	First cycle
<a href="#">SG1140</a>	Mechanics II	6.0 hp	First cycle

#### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">MG1028</a>	Introductory 3D CAD <i>Mandatory for students admitted from COPEN</i>	1.5 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

## Information regarding conditionally elective courses

The course MG1028 is mandatory for students admitted to CMAST from Degree Programme Open Entrance (COPEN)

## Year 3

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Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MG1026</a>	Manufacturing Technology	6.0 hp	First cycle
<a href="#">MJ1112</a>	Applied Thermodynamics	9.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

**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 courses *SF1915 Probability Theory and Statistics* and *MH1004 Engineering Materials*, should not be read by students attending the international profile. However, the following courses should be included study year 3, *MG1026 Manufacturing Technology* and *MJ1112 Applied Thermodynamics*

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.

Masters programs leading to the degree in Master of Science in Mechanical Engineering are specified in the program syllabus for batch Autumn 2021.

For more information about the qualifying courses, see respective directions.

# International Profile, german (INTT)

## Year 2

### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">LS1423</a>	German A2 for Engineers	7.5 hp	First cycle
<a href="#">LS1424</a>	German B1 for Engineers	7.5 hp	First cycle
<a href="#">MF1016</a>	Basic Electrical Engineering	9.0 hp	First cycle
<a href="#">MF1044</a>	Machine Components	6.0 hp	First cycle
<a href="#">SE1010</a>	Solid Mechanics, Basic Course with Project	12.0 hp	First cycle
<a href="#">SF1514</a>	Numerical Methods, Basic Course	6.0 hp	First cycle
<a href="#">SF1633</a>	Differential Equations I	6.0 hp	First cycle
<a href="#">SG1140</a>	Mechanics II	6.0 hp	First cycle

### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">MG1028</a>	Introductory 3D CAD <i>Mandatory for students admitted from COPEN</i>	1.5 hp	First cycle

### Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

### Information regarding conditionally elective courses

The course MG1028 is mandatory for students admitted to CMAST from Degree Programme Open Entrance (COPEN)

## Year 3

### Mandatory courses (27.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MG1026</a>	Manufacturing Technology	6.0 hp	First cycle
<a href="#">MJ1112</a>	Applied Thermodynamics	9.0 hp	First cycle

### Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

**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 courses *SF1915 Probability Theory and Statistics* and *MH1004 Engineering Materials*, should not be read by students attending the international profile. However, the following courses should be included study year 3, *MG1026 Manufacturing Technology* and *MJ1112 Applied Thermodynamics*

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.

Masters programs leading to the degree in Master of Science in Mechanical Engineering are specified in the program syllabus for batch Autumn 2021.

For more information about the qualifying courses, see respective directions.

# Track, Innovation Management and Product Development (IPDE)

Year 3

## Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle



# Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3.

## Track, Machine Design (IPUB)

### Year 3

#### Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

#### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific,	6.0 hp	First cycle

	Technical and Industrial Environments		
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3.

## Track, Mechatronics (IPUC)

### Year 3

#### Mandatory courses (36.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

## Recommended courses

Code	Name	Credits	Edu. level
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Master, Naval Architecture (MRS)

### Year 3

### Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle

MH1004	Engineering Materials	6.0 hp	First cycle
SF1915	Probability Theory and Statistics	6.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
DD1320	Applied Computer Science	6.0 hp	First cycle
EL1010	Automatic Control, General Course	6.0 hp	First cycle
ME2016	Project Management: Leadership and Control	6.0 hp	Second cycle
MG1002	Automation Technology	6.0 hp	First cycle
MG1024	Production	6.0 hp	First cycle
MH1023	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle
SD1116	Design of Silent and Vibration-free Products	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course <i>One of the courses SG1220 or SG1217 must be chosen for eligibility to the Master's programme, Naval Architecture.</i>	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers <i>One of the courses SG1220 or SG1217 must be chosen for eligibility to the Master's programme, Naval Architecture.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as **conditional elective** courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3, and **at least one of** the courses SG1217 or SG1220 must be chosen.

# Master, Mathematics (MTH)

## Year 3

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1632</a>	Complementary Course in Differential Equations and Transforms	3.0 hp	First cycle
<a href="#">SF1904</a>	Markov Processes, Basic Course	3.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

# Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

*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 during study year 4-5:*

- **Technical profile Production and Energy**  
MG2130 Modelling and Simulation of Industrial Processes 9 credits  
MJ2380 Introduction to Energy Systems Analysis and Applications 9 credits
- **Technical profile Solid Mechanics**  
SE1025 FEM for Engineering Applications 6 credits  
*One of the following two courses must be chosen:*  
SE2126 Material Mechanics 9 credits  
SE2132 Applied Elasticity with FEM 9 credits

*As well as one of the following courses must be chosen:*

SE2860 FEM Modelling 8 credits  
SE2137 Fatigue 6 credits  
SE2139 Fracture Mechanics 6 credits  
SE2134 Dynamic Problems in Solid Mechanics 7,5 credits  
SE2121 Introduction to Biomechanics 9 credits

- **Technical profile Construction**  
*Courses corresponding to at least 18 credits, listed below, shall be taken during study year 4-5:*  
MF2101 Machine Design 6 credits  
MF2102 Machine Design Project 6 credits  
MF2010 Component Design 6 credits  
MF2011 Systems Engineering 9 credits  
MF2019 CAD 3D-modelling and Visualization 6 credits \*  
MF2024 Robust and Probabilistic Design 6 credits  
\* *will be able to study in period 2 and 4*

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3.

## Year 4

### Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

One of the following technical profile specified within the study year plan for Degree Programme in Mechanical Engineering, must be chosen during study year 4-5 (ie during study year 1-2 of the master's programme)

#### **Technical profiles, study year 4-5**

(study year 1-2 of the master's programme)

- **Technical profile Construction**

Conditionally elective courses within the technical profile, corresponding to **at least 18 credits**, shall be taken during study year 4-5.

- **Technical profile Production and Energy**

All conditionally elective courses within the technical profile, shall be taken during study year 4-5.

- **Technical profile Solid Mechanics**

Within the technical profile, the course *SE1025 FEM for Engineering Applications* should be read, as well as **one** of the courses *SE2126 Material Mechanics* or *SE2132 Applied Elasticity with FEM*.

In addition to these courses, **one** of the other conditionally elective courses within the technical profile, should be read in year 4-5.

## Master, Nuclear Energy Engineering (NEE)

### Year 3

#### Mandatory courses (32.0 Credits)

Code	Name	Credits	Edu. level
ME1003	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle

MH1004	Engineering Materials	6.0 hp	First cycle
SF1915	Probability Theory and Statistics	6.0 hp	First cycle
SH1012	Modern Physics	8.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
DD1320	Applied Computer Science	6.0 hp	First cycle
EL1010	Automatic Control, General Course	6.0 hp	First cycle
ME2016	Project Management: Leadership and Control	6.0 hp	Second cycle
MG1002	Automation Technology	6.0 hp	First cycle
MG1024	Production	6.0 hp	First cycle
MH1023	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle
SD1116	Design of Silent and Vibration-free Products	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3, and **at least one of** the courses SG1217 or SG1220 must be chosen.



# Master, Production Engineering and Management (PRM)

Year 3

## Mandatory courses (36.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

## Recommended courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">DD1321</a>	Applied Programming and Computer Science	9.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Master, Sustainable Energy Engineering (SUE)

### Year 3

#### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

#### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>One of the courses SG1217 or SG1220 must be chosen.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>One of the courses SG1220 or SG1217 must be chosen.</i>	6.0 hp	First cycle

#### Recommended courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle

<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**One of** the conditionally elective courses SG1217 or SG1220 must be chosen during study year 3.

# Master, Sustainable Technology (SUT)

## Year 3

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">AL2113</a>	Sustainable Development in theory and practise	6.0 hp	Second cycle
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
DD1320	Applied Computer Science	6.0 hp	First cycle
EL1010	Automatic Control, General Course	6.0 hp	First cycle
ME2016	Project Management: Leadership and Control	6.0 hp	Second cycle
MG1002	Automation Technology	6.0 hp	First cycle
MG1024	Production	6.0 hp	First cycle
MH1023	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle
SD1116	Design of Silent and Vibration-free Products	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

### **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 during study year 4-5:*

- **Technical profile Construction**

*Courses corresponding to at least 18 credits, listed below, shall be taken during study year 4-5:*

MF2101 Machine Design 6 credits

MF2102 Machine Design Project 6 credits

MF2010 Component Design 6 credits

MF2011 Systems Engineering 9 credits

MF2019 CAD 3D-modelling and Visualization 6 credits \*  
MF2024 Robust and Probabilistic Design 6 credits  
\* *will be able to study in period 2 and 4*

- **Technical profile Energy**

MJ2413 Energy and Environment 6 credits  
MJ2411 Renewable Energy Technology 6 credits \*  
MJ2380 Introduction to Energy Systems Analysis and Applications 9 credits  
\**can also be chosen study year 5*

- **Technical profile Production**

MG2029 Production Engineering - Planning and Control 6 credits  
(*MG1024 Production in study year 3*, is the eligibility course for MG2029)

*One of the following two courses must be chosen:*

MG2028 CAD and Other IT Tools in Industrial Processes 6 credits  
MG2130 Modelling and Simulation of Industrial Processes 9 credits

*As well as one of the following courses must be chosen, either study year 4 or 5:*

MG2009 Advanced Manufacturing Technology 6 credits  
MG2109 Advanced Manufacturing Technology, Extended Course 9 credits  
MG2110 Advanced Metrology 9 credits  
MG2022 Advanced CAD Modelling and Rapid Prototyping 6 credits \*  
MG2135 PLM - Product Lifecycle Management 9 credits  
MG2036 Computer Aided Manufacturing - CAM 6 credits  
MG2038 Digital Factories 6 credits \*\*  
MG2010 Modern Industrial Metrology 6 credits \*  
\* *MG2028* prerequisites  
\*\* *MG2130* prerequisites

- **Technical profile Solid Mechanics**

SE1025 FEM for Engineering Applications 6 credits

*One of the following two courses must be chosen:*

SE2126 Material Mechanics 9 credits  
SE2132 Applied Elasticity with FEM 9 credits

*As well as one of the following courses must be chosen:*

SE2860 FEM Modelling 8 credits  
SE2137 Fatigue 6 credits  
SE2139 Fracture Mechanics 6 credits  
SE2134 Dynamic Problems in Solid Mechanics 7,5 credits  
SE2121 Introduction to Biomechanics 9 credits

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3.

# Year 4

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

One of the following technical profile specified within the study year plan for Degree Programme in Mechanical Engineering, must be chosen during study year 4-5 (ie during study year 1-2 of the master's programme)

### **Technical profiles, study year 4-5**

(study year 1-2 of the master's programme)

- **Technical profile Construction**

Conditionally elective courses within the technical profile, corresponding to **at least 18 credits**, shall be taken during study year 4-5.

- **Technical profile Energy**

All conditionally elective courses within the technical profile, shall be taken during study year 4-5.

- **Technical profile Production**

Within the technical profile, the course *MG2029 Production Engineering - Planning and Control* should be read, as well as **one** of the courses *MG2028 CAD and Other IT Tools in Industrial Processes* or *MG2130 Modelling and Simulation of Industrial Processes*.

In addition to these courses, **one** of the other conditionally elective courses within the technical profile, should be read in year 4-5.

- **Technical profile Solid Mechanics**

Within the technical profile, the course *SE1025 FEM for Engineering Applications* should be read, as well as **one** of the courses *SE2126 Material Mechanics* or *SE2132 Applied Elasticity with FEM*.

In addition to these courses, **one** of the other conditionally elective courses within the technical profile, should be read in year 4-5.

# Track, Fluid Mechanics (TEMA)

## Year 3

### Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>One of the courses SG1220 or SG1217 must be chosen.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>One of the courses SG1220 or SG1217 must be chosen.</i>	6.0 hp	First cycle

### Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3, and **at least one** of the courses SG1217 or SG1220 must be chosen.

## Track, Solid Mechanics (TEMB)

### Year 3

#### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SE1025</a>	FEM for Engineering Applications	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

#### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">DD1320</a>	Applied Computer Science	6.0 hp	First cycle
<a href="#">EL1010</a>	Automatic Control, General Course	6.0 hp	First cycle
<a href="#">ME2016</a>	Project Management: Leadership and Control	6.0 hp	Second cycle
<a href="#">MG1002</a>	Automation Technology	6.0 hp	First cycle
<a href="#">MG1024</a>	Production	6.0 hp	First cycle
<a href="#">MH1023</a>	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
<a href="#">MJ1401</a>	Heat Transfer	6.0 hp	First cycle



<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SG1217</a>	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
<a href="#">SG1220</a>	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022.. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as *conditional elective* courses under the heading "General" - "General courses".

## Information regarding conditionally elective courses

**At least two** of the conditionally elective courses must be chosen during study year 3.

## Track, Sound and Vibrations (TEMC)

### Year 3

#### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ME1003</a>	Industrial Management, Basic Course	6.0 hp	First cycle
<a href="#">MF1045</a>	Product realization - Engineering Design	6.0 hp	First cycle
<a href="#">MH1004</a>	Engineering Materials	6.0 hp	First cycle
<a href="#">SD1116</a>	Design of Silent and Vibration-free Products	6.0 hp	First cycle
<a href="#">SF1915</a>	Probability Theory and Statistics	6.0 hp	First cycle

#### Conditionally elective courses

Code	Name	Credits	Edu. level

DD1320	Applied Computer Science	6.0 hp	First cycle
EL1010	Automatic Control, General Course	6.0 hp	First cycle
ME2016	Project Management: Leadership and Control	6.0 hp	Second cycle
MG1002	Automation Technology	6.0 hp	First cycle
MG1024	Production	6.0 hp	First cycle
MH1023	Practical Gender Equality and Diversity Work in Scientific, Technical and Industrial Environments	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course <i>SG1220 can be chosen instead of SG1217.</i>	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers <i>SG1217 can be chosen instead of SG1220.</i>	6.0 hp	First cycle

## Supplementary information

*Information is based upon the curriculum for academic year 2021/2022. Changes may occur.*

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

The Degree projects, first cycle, that can be selected are available as conditional elective courses under the heading "General" - "General courses".



# Appendix 2: Specialisations

Degree Programme in Mechanical Engineering  
(CMAST)

Master, Aerospace Engineering (AEE)

No information entered.

Master, Vehicle Engineering (FOR)

No information entered.

Master, Industrial Management (INE)

No information entered.

International Profile, french (INTF)

No information entered.

International Profile, spanish (INTS)

No information entered.

## International Profile, german (INTT)

No information entered.

## Track, Innovation Management and Product Development (IPDE)

No information entered.

## Track, Machine Design (IPUB)

No information entered.

## Track, Mechatronics (IPUC)

No information entered.

## Master, Naval Architecture (MRS)

No information entered.

## Master, Mathematics (MTH)

No information entered.

## Master, Nuclear Energy Engineering (NEE)

No information entered.

## Master, Production Engineering and Management (PRM)

No information entered.

# Master, Sustainable Energy Engineering (SUE)

No information entered.

# Master, Sustainable Technology (SUT)

No information entered.

# Track, Fluid Mechanics (TEMA)

No information entered.

# Track, Solid Mechanics (TEMB)

No information entered.

# Track, Sound and Vibrations (TEMC)

No information entered.