



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 08 (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 the 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
- 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

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 D, Physics course B and Chemistry course A or the corresponding equivalents. All of the courses must have been completed with at least a grade of pass (godkänd) or 3. If the applicant refers to other studies or work experiences that may show competences then they will be assessed accordingly.

More information regarding KTH's admission policy can be found in the KTH-Regulations. *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 study place in any Master they choose.

The knowledge about the environment and sustainable development is deepened and solidified by being integrated into the programme's courses with special aspects 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
- 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

The selection of Master programmes is made simultaneously with course selection in the fall term of year 3 online at "My Pages" on KTH's website.

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 January 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)

General courses

Year 1

Mandatory courses (59.5 Credits)

Code	Name	Credits	Edu. level
DN1212	Numerical Methods and Basic Programming	9.0 hp	First cycle
MJ1102	Mechanical Engineering	10.0 hp	First cycle
SF1624	Algebra and Geometry	7.5 hp	First cycle
SF1625	Calculus in One Variable	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle
SG1130	Mechanics I	9.0 hp	First cycle
SK1112	Physics I	9.0 hp	First cycle

Recommended courses

Code	Name	Credits	Edu. level
SF1611	Introductory Course in Mathematics I	1.5 hp	First cycle

Year 2

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
MF1016	Basic Electrical Engineering	9.0 hp	First cycle
MF1044	Machine Components	6.0 hp	First cycle
MG1024	Production	6.0 hp	First cycle
MH1004	Engineering Materials	6.0 hp	First cycle
MJ1112	Applied Thermodynamics	9.0 hp	First cycle
SE1010	Solid Mechanics, Basic Course with Project	12.0 hp	First cycle
SF1633	Differential Equations I	6.0 hp	First cycle
SG1140	Mechanics II	6.0 hp	First cycle

Master, Aerospace Engineering (AEE)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SG1217	Fluid Mechanics, Basic Course	6.0 hp	First cycle

	<i>SG1217 or SG1220 must be chosen</i>		
SG1220	Fluid Mechanics for Engineers <i>SG1217 or SG1220 must be chosen</i>	6.0 hp	First cycle

Year 4

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/taeem/ht11/?l=en_UK

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/taeem/ht11/?l=en_UK

Master, Vehicle Engineering (FOR)

Year 3

Mandatory courses (51.0 Credits)

Code	Name	Credits	Edu. level
EL1000	Automatic Control, General Course	6.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course	6.0 hp	First cycle

Year 4

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/tform/ht11/?l=en_UK

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/tform/ht11/?l=en_UK

Master, Industrial Management (INE)

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
ME2015	Project Management: Leadership and Control	6.0 hp	Second cycle
ME2063	Team Leadership and Human Resource Management	6.0 hp	Second cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG101X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle

Year 4

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
ME2064	Finance and Control in Industrial Organizations	6.0 hp	Second cycle
ME2065	Operations and Supply Chain Strategy	6.0 hp	Second cycle
ME2066	Strategy and Industrial Marketing	6.0 hp	Second cycle
ME2067	Industrial Transformation and Technical Changes (ITTEC)	6.0 hp	Second cycle
ME2501	Perspectives on Industrial Management	6.0 hp	Second cycle

Supplementary information

During year 4 and 5 you must take at least 18 hp technical courses at second level

Year 5

Mandatory courses (25.5 Credits)

Code	Name	Credits	Edu. level
ME2001	Research Methods in Industrial Engineering and Management	7.5 hp	Second cycle
ME2069	Managing Research and Innovation	6.0 hp	Second cycle
ME2502	Change Project in Industrial Management	12.0 hp	Second cycle

Track, Industrial Design (IPDA)

Year 3

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
HM1025	Ergonomics in Product Development	6.0 hp	First cycle

ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1025	Model Based Product Development II	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF103X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MF106X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MF111X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MG101X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MJ140X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MJ150X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
MF2031	Advanced Prototyping	6.0 hp	Second cycle
MF2032	Eco Design	6.0 hp	Second cycle
MF2033	Material, Environment and Economy <i>75% attendance</i>	6.0 hp	Second cycle
MF2041	Industrial Design Engineering Preparatory Course Visualization and Communication	6.0 hp	Second cycle
MF2045	Engineering Research Methodology	9.0 hp	Second cycle
MF2060	Industrial Design Engineering Advanced Course, Part 1	12.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF2005	Innovative Design I <i>MF2006 or MF2005</i>	12.0 hp	Second cycle

MF2006	Innovative Design II <i>MF2006 or MF2005</i>	6.0 hp	Second cycle
MF2037	Human Product Interaction <i>MF2037 eller MF2038 during year 4 or 5. 80% attendance is required</i>	6.0 hp	Second cycle
MF2038	Service Design <i>MF2037 eller MF2038 during year 4 or 5. 80% attendance is required</i>	6.0 hp	Second cycle

Year 5

Mandatory courses (27.0 Credits)

Code	Name	Credits	Edu. level
MF2037	Human Product Interaction	6.0 hp	Second cycle
MF2038	Service Design <i>Can only be taken during year 5</i>	6.0 hp	Second cycle
MF2045	Engineering Research Methodology <i>6hp during year 1 and 3hp during year 2</i>	9.0 hp	Second cycle
MF2062	Industrial Design Engineering Project Course	6.0 hp	Second cycle

Track, Concurrent Engineering (IPDB)

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
HM1025	Ergonomics in Product Development	6.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
ME2063	Team Leadership and Human Resource Management	6.0 hp	Second cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MF111X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle

Year 4

Mandatory courses (51.0 Credits)

Code	Name	Credits	Edu. level
MF2031	Advanced Prototyping	6.0 hp	Second cycle
MF2032	Eco Design <i>80% attendance</i>	6.0 hp	Second cycle
MF2034	Integrated Product Development	6.0 hp	Second cycle
MF2036	Integrated Product Development, Advanced Course	24.0 hp	Second cycle
MF2045	Engineering Research Methodology	9.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF2006	Innovative Design II	6.0 hp	Second cycle
MF2023	Industrial Design	6.0 hp	Second cycle
MF2038	Service Design <i>80% attendance</i>	6.0 hp	Second cycle
MF2046	Product Innovation	6.0 hp	Second cycle
MG2020	Modularisation of Products	6.0 hp	Second cycle

Supplementary information

2 of the Conditionally elective courses must be taken during year 4 or 5

Year 5

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
MF2036	Integrated Product Development, Advanced Course	24.0 hp	Second cycle
MF2045	Engineering Research Methodology <i>6hp during year 1 and 3hp during year 2</i>	9.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF2006	Innovative Design II	6.0 hp	Second cycle
MF2023	Industrial Design	6.0 hp	Second cycle
MF2038	Service Design	6.0 hp	Second cycle
MG2020	Modularisation of Products	6.0 hp	Second cycle

Supplementary information

2 of the Conditionally elective courses must be taken during year 4 or 5:

MG2020

MF2023 (STUDENTS WITHIN CDEPR ARE NOT ALLOWED TO TAKE THIS)

MF2006

MF2038

MF2046

Track, Combustion Engineering (IPUA)

Year 3

Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF103X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MF106X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

MF111X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MG101X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MJ140X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
MJ150X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course <i>SG1217 or SG1220 must be chosen</i>	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers <i>SG1217 or SG1220 must be chosen</i>	6.0 hp	First cycle

Year 4

Mandatory courses (32.0 Credits)

Code	Name	Credits	Edu. level
MF2045	Engineering Research Methodology	9.0 hp	Second cycle
MF2047	Internal Combustion Engines 1	6.0 hp	Second cycle
MF2048	Internal Combustion Engines 2	9.0 hp	Second cycle
SD2222	Vehicle Components	8.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
EJ2410	Hybrid Vehicle Drives <i>Profile 2: Energy and Environment</i>	7.5 hp	Second cycle
EL1120	Automatic Control, General Course <i>Profile 3: Mechatronics option 1</i>	6.0 hp	First cycle
KE2170	Fuel Cell <i>Profile 2: Energy and Environment</i>	6.0 hp	Second cycle
MF1025	Model Based Product Development II <i>Profile 1: Machine Design</i>	6.0 hp	First cycle
MF2007	Dynamics and Motion Control <i>Profile 3: Mechatronics option 1</i>	9.0 hp	Second cycle
MF2010	Component Design <i>Profile 1: Machine Design</i>	6.0 hp	Second cycle
MF2018	Tribology <i>Profile 1: Machine Design</i>	6.0 hp	Second cycle

MF2019	CAD 3D-modelling and Visualization <i>Profile 1: Machine Design</i>	6.0 hp	Second cycle
MF2042	Embedded Systems for Mechatronics, I <i>Profile 3: Mechatronics option 2</i>	6.0 hp	Second cycle
MF2044	Embedded Systems for Mechatronics, II <i>Profile 3: Mechatronics option 2</i>	6.0 hp	Second cycle
SG2212	Computational Fluid Dynamics <i>Profile 4: Fluid Mechanics</i>	7.5 hp	Second cycle
SG2215	Compressible Flow <i>Profile 4: Fluid Mechanics</i>	7.5 hp	Second cycle
SG2218	Turbulence <i>Profile 4: Fluid Mechanics</i>	7.5 hp	Second cycle

Year 5

Mandatory courses (15.0 Credits)

Code	Name	Credits	Edu. level
MF2064	Internal Combustion Engines Advanced Course <i>3hp during year 4 + 12hp during year 5</i>	15.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
EJ2410	Hybrid Vehicle Drives <i>Mechatronics</i>	7.5 hp	Second cycle
MJ2411	Renewable Energy Technology <i>Energy and Environment</i>	6.0 hp	Second cycle

Supplementary information

You must choose one of the profiles:

- Machine Design
- Energy and Environment
- Mechatronics, option 1
- Mechatronics, option 2
- Fluid Mechanics

Track, Machine Design (IPUB)

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF103X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MF2018	Tribology	6.0 hp	Second cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle

Year 4

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
MF2004	Advanced Machine Design	18.0 hp	Second cycle
MF2006	Innovative Design II	6.0 hp	Second cycle
MF2010	Component Design	6.0 hp	Second cycle
MF2011	Systems Engineering	9.0 hp	Second cycle
MF2024	Robust and Probabilistic Design	6.0 hp	Second cycle
MF2030	Mechatronics basic Course	6.0 hp	Second cycle
MF2045	Engineering Research Methodology	9.0 hp	Second cycle

Year 5

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
MF2004	Advanced Machine Design	18.0 hp	Second cycle

	<i>6 hp in year 4 + 12 hp in year 5</i>		
MF2032	Eco Design	6.0 hp	Second cycle
MF2045	Engineering Research Methodology <i>6 hp during year 4 and 3 hp during year 5</i>	9.0 hp	Second cycle

Track, Mechatronics (IPUC)

Year 3

Mandatory courses (48.0 Credits)

Code	Name	Credits	Edu. level
DD1321	Applied Programming and Computer Science	9.0 hp	First cycle
EL1120	Automatic Control, General Course	6.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MF106X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle

Year 4

Mandatory courses (52.0 Credits)

Code	Name	Credits	Edu. level
MF2007	Dynamics and Motion Control	9.0 hp	Second cycle
MF2030	Mechatronics basic Course	6.0 hp	Second cycle
MF2042	Embedded Systems for Mechatronics, I	6.0 hp	Second cycle
MF2043	Robust Mechatronics	6.0 hp	Second cycle
MF2044	Embedded Systems for Mechatronics, II	6.0 hp	Second cycle
MF2045	Engineering Research Methodology	9.0 hp	Second cycle
MF2057	Mechatronics Track Introduction	1.0 hp	Second cycle
MF2058	Mechatronics, Advanced Course Spring Semester	9.0 hp	Second cycle

Year 5

Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
MF2045	Engineering Research Methodology <i>6 hp during year 4 and 3 hp during year 5</i>	9.0 hp	Second cycle
MF2059	Mechatronics, Advanced Course, Fall semester	15.0 hp	Second cycle

Master, Naval Architecture (MRS)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle

Conditionally elective courses

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

Year 4

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/tmrsm/ht11/?l=en_UK

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/tmrsm/ht11/?l=en_UK

Master, Mathematics (MTH)

Year 3

Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SF1901	Probability Theory and Statistics	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SF1632	Complementary Course in Differential Equations and Transforms	3.0 hp	First cycle
SF1904	Markov Processes, Basic Course	3.0 hp	First cycle

Year 4

Mandatory courses (22.5 Credits)

Code	Name	Credits	Edu. level
DN2221	Applied Numerical Methods, part 1	6.0 hp	Second cycle
DN2222	Applied Numerical Methods, part 2	3.0 hp	Second cycle
SF1841	Optimization	6.0 hp	First cycle
SF2940	Probability Theory	7.5 hp	Second cycle

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/tmthm/ht11/?l=en_UK

Master, Nuclear Energy Engineering (NEE)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SG1217	Fluid Mechanics, Basic Course	6.0 hp	First cycle

	<i>SG1217 eller SG1220 must be chosen</i>		
SG1220	Fluid Mechanics for Engineers <i>SG1217 eller SG1220 must be chosen</i>	6.0 hp	First cycle

Year 4

Mandatory courses (38.0 Credits)

Code	Name	Credits	Edu. level
MJ2405	Sustainable Power Generation	9.0 hp	Second cycle
SH2600	Nuclear Reactor Physics, Major Course	9.0 hp	Second cycle
SH2603	Radiation, Protection, Dosimetry and Detectors	6.0 hp	Second cycle
SH2702	Nuclear Reactor Technology	8.0 hp	Second cycle
SH2773	Nuclear Power Safety	6.0 hp	Second cycle

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/tneem/ht11/?l=en_UK

Master, Production Engineering and Management (PRM)

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1001	Manufacturing	6.0 hp	First cycle

MG1002	Automation Technology	6.0 hp	First cycle
MG101X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle

Year 4

Mandatory courses (73.5 Credits)

Code	Name	Credits	Edu. level
ME2053	Logistics & Supply Chain Management <i>Track Manufacturing</i>	6.0 hp	Second cycle
MG2020	Modularisation of Products <i>Track Manufacturing</i>	6.0 hp	Second cycle
MG2022	Advanced CAD Modelling and Rapid Prototyping, Project Course <i>Track Industrial IT-systems</i>	6.0 hp	Second cycle
MG2029	Production Engineering - Planning and Control	6.0 hp	Second cycle
MG2031	Manufacturing, Advanced Course <i>Track Manufacturing</i>	6.0 hp	Second cycle
MG2032	Automation Technology, Advanced Course 1 <i>Track Manufacturing</i>	6.0 hp	Second cycle
MG2035	Product Data Management/Product Lifecycle Management <i>Track Industrial IT-systems</i>	6.0 hp	Second cycle
MG2036	Computer Aided Manufacturing - CAM <i>Track Industrial IT-systems</i>	6.0 hp	Second cycle
MG2104	Manufacturing Technology and Planning <i>Track Production Engineering and Management</i>	7.5 hp	Second cycle
MG2130	Modelling and Simulation of Industrial Processes	9.0 hp	Second cycle
MG2203	Process Control and Management <i>Track Production Engineering and Management</i>	9.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MG2028	CAD and Other IT Tools in Industrial Processes <i>MG2028 or MG2128</i>	6.0 hp	Second cycle
MG2033	Quality Control	6.0 hp	Second cycle

	<i>Track Manufacturing and Production Engineering Management: MG2033 or MG2202</i>		
MG2128	CAD and Other IT Tools in Industrial Processes, Extended Course <i>MG2028 or MG2128</i>	7.5 hp	Second cycle
MG2202	Quality Control <i>Track Manufacturing and Production Engineering Management: MG2033 or MG2202</i>	9.0 hp	Second cycle

Supplementary information

Student must choose between the following profiles:

- Industrial IT system
- Production development
- Production Engineering and Management

Year 5

Mandatory courses (13.5 Credits)

Code	Name	Credits	Edu. level
AK2036	Theory and Methodology of Science with Applications (Natural and Technological Science)	7.5 hp	Second cycle
MG2027	Production Engineering - Project Course	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
ME2053	Logistics & Supply Chain Management <i>Profile Production engineering and management</i>	6.0 hp	Second cycle
MG2009	Advanced Manufacturing Technology <i>Profile Production development: MG2009 or MG2109 must be taken</i>	6.0 hp	Second cycle
MG2026	Integration of Industrial IT Systems <i>Profile Industrial IT-systems</i>	6.0 hp	Second cycle
MG2038	Digital Factories <i>Profile Industrial IT-systems</i>	6.0 hp	Second cycle
MG2109	Advanced Manufacturing Technology, Extended Course	9.0 hp	Second cycle

	<i>Profile Production development: MG2009 or MG2109 must be taken. Profile Production engineering and management: MG2109 or MG2110 must be taken.</i>		
MG2110	Advanced Metrology <i>Profile Production engineering and management. MG2109 or MG2110 must be taken.</i>	9.0 hp	Second cycle

Master, Sustainable Energy Engineering (SUE)

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle
MJ140X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MJ2424	Computational Methods in Energy Technology <i>Must be chosen either in year 3 or 4</i>	6.0 hp	Second cycle

Year 4

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
MJ2405	Sustainable Power Generation	9.0 hp	Second cycle
MJ2407	Sustainable Energy Utilisation	9.0 hp	Second cycle

MJ2410	Energy Management	6.0 hp	Second cycle
MJ2424	Computational Methods in Energy Technology <i>Year 3 or 4</i>	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MJ2411	Renewable Energy Technology <i>One of MJ2411, MJ2413 or MJ2429</i>	6.0 hp	Second cycle
MJ2412	Renewable Energy Technology, Advanced Course <i>Track Power Generation: MJ2412 or MJ2430</i>	6.0 hp	Second cycle
MJ2413	Energy and Environment <i>One of MJ2411, MJ2413 or MJ2429</i>	6.0 hp	Second cycle
MJ2422	Thermal Comfort and Indoor Climate <i>Track Energy utilization</i>	6.0 hp	Second cycle
MJ2423	Applied Refrigeration and Heat Pump Technology <i>Track Energy utilization</i>	6.0 hp	Second cycle
MJ2426	Applied Heat and Power Technology <i>Track Power Generation</i>	6.0 hp	Second cycle
MJ2429	Turbomachinery <i>One of MJ2411, MJ2413 or MJ2429</i>	6.0 hp	Second cycle
MJ2430	Thermal Turbomachinery <i>Track Power Generation: MJ2412 or MJ2430</i>	6.0 hp	Second cycle

Supplementary information

One of MJ2411, MJ2413 or MJ2429 must be taken

One of the following tracks must be taken:

- Energy utilization
- Power Generation
- Solar Energy (Given by Högskolan dalarna, HDa)

Year 5

Mandatory courses (16.5 Credits)

Code	Name	Credits	Edu. level
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AK2030	Theory and Methodology of Science (Natural and Technological Science)	4.5 hp	Second cycle
MJ2409	Applied Energy Technology, Project Course	9.0 hp	Second cycle
MJ2440	Measurement Techniques	3.0 hp	Second cycle

Master, Sustainable Technology (SUT)

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
MJ150X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
MJ2611	Introduction Industrial Ecology	6.0 hp	Second cycle
MJ2613	Sustainable Development	6.0 hp	Second cycle

Year 4

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
MJ2627	Environmental Technology, Larger Course	9.0 hp	Second cycle
MJ2651	Ecology, Advanced Course	6.0 hp	Second cycle
MJ2652	Environmental Effects from Technical Systems and Processes	6.0 hp	Second cycle
MJ2663	Environmental Management	6.0 hp	Second cycle
MJ2680	Environmental Systems Analysis	6.0 hp	Second cycle
MJ2691	Technology and Sustainable Development	6.0 hp	Second cycle
MJ2694	Ecological Economics	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MJ2630	Waste Management, Advanced Course <i>One of MJ2670 or MJ2630 must be taken</i>	6.0 hp	Second cycle
MJ2670	Risk Management <i>One of MJ2670 or MJ2630 must be taken</i>	6.0 hp	Second cycle

Year 5

Mandatory courses (7.5 Credits)

Code	Name	Credits	Edu. level
MJ2673	Research Methodology and Theory of Science	7.5 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MJ2635	Environmental Modelling: Introduction and Application Examples	6.0 hp	Second cycle
MJ2641	Cleaner Production II	6.0 hp	Second cycle
MJ2664	Environmental Management II, Advanced Course	6.0 hp	Second cycle
MJ2681	Applied Environmental Systems Analysis II	6.0 hp	Second cycle

Track, Fluid Mechanics (TEMA)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle

SA108X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers	6.0 hp	First cycle

Year 4

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/ttemm/ht11/?l=en_UK

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/ttemm/ht11/?l=en_UK

Track, Solid Mechanics (TEMB)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle

Year 4

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/ttemm/ht11/?l=en_UK

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/ttemm/ht11/?l=en_UK

Track, Sound and Vibrations (TEMC)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1045	Product realization - Engineering Design	6.0 hp	First cycle
MG1025	Product Realization - Manufacturing	6.0 hp	First cycle
SA108X	Degree Project in Mechanical Engineering, First Cycle <i>One degree project must be chosen</i>	15.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Year 5

Supplementary information

Complete course list:

http://www.kth.se/student/kurser/program/ttemm/ht11/?l=en_UK



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.

Track, Industrial Design (IPDA)

No information entered.

Track, Concurrent Engineering (IPDB)

No information entered.

Track, Combustion Engineering (IPUA)

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)

Complete course list:

http://www.kth.se/student/kurser/program/ttemm/ht11/?l=en_UK