Programme syllabus

Master's Programme, Production Engineering and Management, 120 credits
Masterprogram, industriell produktion
120.0 credits

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

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

Programme objectives
Beyond the goals which are specified by the Higher Degree ordinance, there are also specific goals for this programme.

A graduate from the programme must:

Knowledge and understanding

- have a broad scientific foundation for work within the production engineering area
- have an understanding for how different variables interact in the multi-disciplinary area which constitutes production engineering

Skills and abilities

- have the ability in presentation and communication which constitutes good prerequisites for an efficient work within a group as well as individually
- be able to use standard tools and techniques in order to solve problems within the production engineering area
- have the ability to handle collaboration between engineer and management related functions
- have a good ability to utilize modern modelling and simulation methods as support for decisions
- have developed and deepened the analytical and reasoning abilities which are required in order to handle the continuously changing problems and challenges within the area of production engineering
- have the ability to analyze, synthesise and implement a production system
- Show a good ability to analyze, formulate and handle technical and organisational problems within different production systems with regards to economically, personnel-related and environmentally sustainable conditions

Ability to make judgements and adopt a standpoint

- understand the central role of production engineering for development and competition in the global economy
- have developed a rational perspective on energy efficient process technologies and production systems
- have insights about how surroundings and cultural differences affect production processes
- understand that competence development is the foundation for modern production

KTH’s local degree ordinance can be found in KTH’s guidelines www.kth.se

Extent and content of the programme

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

In order to be eligible for the Master’s programme in Production Engineering and Management, a relevant higher education degree, Bachelor of Science in Engineering or technical Bachelor within Mechanical Engineering or suitable engineering area comprising 180 higher education credits is required.

Other studies or work experiences are judged by competencies referred to. For KTH’s programmes with English as the language of instruction, there is a special requirement of English B or the corresponding knowledge.

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

For more information, refer to KTH’s degree ordinance which can be found in KTH’s guidelines, www.kth.se

Implementation of the education

Structure of the education

Study years, terms, and study periods are described in KTH’s guidelines, www.kth.se

A distance alternative can be offered for international students accepted to the spring term.

Structure of the education

The programme consists, during the first three terms, of obligatory and optional courses. The last term’s studies are spent on the degree project. For students within the Master of Science in Engineering programmes in Mechanical Engineering, Design, and product manufacturing, Industrial Economy, or Vehicle Engineering, the specific course plans according to Appendix 1 are applicable.

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

A condition in order to participate in the studies is that the student, each spring and autumn must enrol for the coming term. This is done through “Mina Sidor”, on KTH’s webpage between the 1st and 15th of November and the 1st and 15th of May, respectively.

By completing term enrolment, the student has confirmed their intention to study and participate in the programme. Only after that may the student be able to:

• Register for the term
• Register for courses
• Get reported results

Course registration

Registration for courses within the programme is done by the student before the start of each term, according to KTH’s central guidelines.
Selection of track

The students choose a track before the start of the third term at the time of course registration, between the 1st and 15th of May.

The students will be divided evenly between the tracks. The results from the first term are used for the selection. Firstly, the selection is done based on earned course credits. When, the number of earned course credits is equal, the grades for the courses are used as a selection basis.

Conditions for participation in the programme

For studies in study year 2:

At least 45 higher education credits must be completed from study year 1 by the end of the examination period in August. Students who have not fulfilled this requirement must, in collaboration with a study adviser, create an individual study plan. The main intent with the individual study plan is that the student will complete the remaining elements during the next coming study year. In the study plan, the remaining elements should be included as well as suitable courses from the next study year. Special consideration should be given to the courses’ prerequisites.

Recognition of previous academic studies

The student has the possibility to apply for recognition of previous academic studies from course(s) from another university or higher education institution, national or international.

KTH’s entire policy for recognition of previous academic studies can be found in KTH’s guidelines www.kth.se

Studies abroad

Students in the programme have the possibility to carry out the degree project outside of Sweden.

Degree project

KTH’s guidelines for degree projects can be found at http://intra.kth.se/regelverk/. Generally, the main portion of the studies must be completed before the degree project can be started.

Degree

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

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

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

Master's Programme, Production Engineering and Management, 120 credits (TPRMM), Programme syllabus for studies starting in autumn 2010

General courses

Year 1

Mandatory courses (60.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG2200</td>
<td>European Business Culture</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG2201</td>
<td>Design and Process Modelling</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG2202</td>
<td>Quality Control</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG2203</td>
<td>Process Control and Management</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG2204</td>
<td>Manufacturing Technology and Planning</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG2205</td>
<td>Operations Management</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG2206</td>
<td>Design and Information Management</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Year 2

Mandatory courses (37.5 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK2036</td>
<td>Theory and Methodology of Science with Applications (Natural and Technological Science)</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>MG203X</td>
<td>Degree Project in Production Engineering Management, Second Cycle</td>
<td>30.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Conditionally elective courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG2026</td>
<td>Integration of Industrial IT Systems</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>Course code</td>
<td>Course name</td>
<td>Credits</td>
<td>Edu. level</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------</td>
<td>---------</td>
<td>--------------------</td>
</tr>
<tr>
<td>MG2038</td>
<td>Digital Factories</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>Track Industrial IT-systems</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MG2209</td>
<td>Advanced Manufacturing Processes</td>
<td>11.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>Track Production Engineering and Management. MG2209 or MG2211 must be taken</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MG2210</td>
<td>Advanced Metrology</td>
<td>11.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>Track Production Engineering and Management. MG2210 or MG2212 must be taken.</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MG2211</td>
<td>Supply Chain Management</td>
<td>11.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>Track Production Engineering and Management. MG2211 or MG2209 must be taken.</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MG2212</td>
<td>Strategic Maintenance Systems</td>
<td>11.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>Track Production Engineering and Management. MG2212 or MG2210 must be taken.</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 2: Specialisations

Master's Programme, Production Engineering and Management, 120 credits (TPRMM), Programme syllabus for studies starting in autumn 2010

This programme has no specialisations.