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 spring 10 (HT - Autumn term; VT - Spring term).

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

Programme objectives

Beyond the objectives which are specified in the Higher Education Degree Ordinance, there are also specific goals for this programme. After completing the programme, the student will:

Knowledge and understanding

• Have a broad scientific foundation for work within the production’s technical area

• Have understanding for how different variables cooperate in the multidisciplinary area which production constitutes

Skills and abilities

• Have skills in presentation and communication such that good prerequisites for efficient work are achieved individually as well as in a group.

• Be able to use simple standard tools and techniques in order to solve management problems within the production technical area.

• Have a good ability to handle cooperation between engineer’s and management related functions

• Have a good ability to utilize modern modelling and simulation methods and their applications which support engineer’s and management’s decisions.

• Have developed and deepened the analysis and reasoning skills which are required in order to handle the constantly changing problems and challenges within the area of production’s technology

• Have the ability to analyse, synthesize, and implement a production system.

• Show a good ability to analyse, formulate and handle technical and organisational problems within different production systems with consideration to economical, personal and environmentally sustainable conditions.

Ability to make judgements and adopt a standpoint

• Understand the central role that productions technology plays for development and concurrence within a global economy.

• Have developed a rational view of energy efficient process technologies and production systems

• Have insight into how surroundings and cultural differences affect the production process

• Understand that competence building is the base for modern production
Reference to the local degree ordinance of the Royal Institute of Technology (KTH Regulations).

**Extent and content of the programme**

The programme consists of 120 higher education credits which correspond to two years full time studies.

The programme is mainly on the second level.

The language of instruction for the programme is English.

**Eligibility and selection**

Bachelor degree equivalent to a Swedish Bachelor's degree (180 ECTS), from a university recognized by government or accredited by other recognized organization. Students in their final year of undergraduate education may also apply and if qualified, receive a conditional acceptance. A good knowledge of written and spoken English is required.

Applicants must provide proof of their proficiency in English. KTH accepts a TOEFL test score of a minimum of 550 (213 in the computer-based test, 79 in the internet based test) or an IELTS score of at least 6.0, no band lower than 5.0 (both general and academic accepted). English proficiency tests are waived for applicants with English as language of instruction (minimum 3 years of full-time higher education studies). A relevant certificate from the university has to be enclosed with the application. For EU citizens from KTH’s partner universities, a certificate from the University language department or the relevant Head of department stating the student's good level of English will be enough.

For special eligibility for the programme, knowledge in technical statistics, manufacturing processes and “Operations Research” is required.

Except for that which is mentioned in KTH’s admission policy (See the KTH Regulations), a distance course, Introduction to Production Engineering Management is used as a selection tool. The course is given after an agreement and it provides knowledge in technical statistics, manufacturing processes, and “Operations Research”.

The reference to KTH’s admission policy can be found in the KTH Regulations.

**Implementation of the education**

**Structure of the education**

The programme’s first year consists of obligatory courses for all students. The second year’s first term consists of an obligatory course in research methodology and conditionally optional courses from one technical scientific block and one management block. One course from each block will be chosen. The last term’s studies consist of a degree project.

The students choose the specialisation before the third term. They will be divided evenly between the two specialisations. The results from the first term are used for selection. Firstly, the selection is done based on the number of course points taken, and, secondly, the grades are used in case of the point values being the same.

Study years, terms, and study period descriptions can be found in the KTH Regulations.

**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 be able to participate in the studies is that the student must enrol for the next term every spring and fall. This is done via “Mina Sidor” on KTH’s website between November 1st and 15th and between May 1st and 15th. With the enrolment, the student has submitted their intention of studying and participating in the programme. Only after that is it possible for the student to:

- register for courses
- register for the term
- get results

**Course Selection**

Before the third term, the student can choose from the optional courses within the programme. The selection is done on “Mina Sidor” on KTH’s website in the same manner as the term enrolment.

**Conditions for participation in the programme**

*For studies in study year 2:*

At least 45 higher education credits from study year 1 must be completed by the exam period in August. Students which have not fulfilled this requirement must consult with the study counsellor and set up an individual study plan. The main goal with the study plan is that the student should complete the remaining elements during the next study year. In the study plan, the remaining elements and also suitable courses from the next study year are included. Special regard should be taken to the courses prerequisites.

**Recognition of previous academic studies**

The student has the possibility to apply to receive credit from courses taken at another university/higher education institution both in Sweden and from abroad. The application can be found on KTH’s website.

KTH’s policy for recognition of previous academic studies can be found entirely in the KTH-Handbook.

**Studies abroad**

Students in the programme have the possibility to carry out the degree project abroad.

**Degree project**

KTH’s rules for the degree project for the Master’s degree with specialisation can be found in the KTH Regulations.

Generally, the degree project work can be started only after a large portion of the studies have been completed.

KTH’s rules for the degree project can be found in the KTH-Handbook

*KTH-Handbok 2, page 15.5*

*www.kth.se/info/kth-handboken/I/15/5.html*

**Degree**

In order to graduate with the Degree of Master of Science (Two Years) within the main area of Machine Technology, a passing grade must be achieved in all courses which are in the student’s study plan. The study plan must comprise 120 higher education credits including a degree project consisting of 30 higher education credits.

KTH’s local degree ordinance can be found in the KTH-Handbook.

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 spring 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</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td>Technological Science)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MG203X</td>
<td>Degree Project in Production Engineering Management, Second</td>
<td>30.0</td>
<td>Second cycle</td>
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<tr>
<td></td>
<td>Cycle</td>
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Conditionally elective courses

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<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG2209</td>
<td>Advanced Manufacturing Processes</td>
<td>11.5</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

*One of the courses MG2209 and MG2210 must be chosen.*
<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG2210</td>
<td>Advanced Metrology</td>
<td>11.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td></td>
<td><em>One of the courses MG2209 or MG2210 must be chosen.</em></td>
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<td></td>
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<tr>
<td>MG2211</td>
<td>Supply Chain Management</td>
<td>11.0</td>
<td>Second cycle</td>
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<td></td>
<td><em>One of the courses MG2211 och MG2212 must be chosen.</em></td>
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<tr>
<td>MG2212</td>
<td>Strategic Maintenance Systems</td>
<td>11.0</td>
<td>Second cycle</td>
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<td></td>
<td><em>One of the courses MG2211 or MG2212 must be chosen.</em></td>
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Appendix 2: Specialisations

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

This programme has no specialisations.