Programme syllabus

Master's Programme, Transport Systems, 120 credits
Masterprogram, transportsystem
120.0 credits

Valid for students admitted to the education from autumn 11 (HT - Autumn term; VT - Spring term).

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

Programme objectives

Knowledge and understanding
The programme aims to give the student a qualified specialist’s education in analysis, planning, assessment, design and control of transport systems at different spatial levels with an emphasis on urban transport systems and their interaction with city and regional planning and development.

Skills and abilities
The student should acquire a qualified training in solving complex problems and in producing decision support for transport policy decisions.

Ability to make judgements and adopt a standpoint
The student should acquire a systems view of thinking and a critical understanding of the subject area’s tools of analysis and modelling and of its methodological and scientific issues.

Extent and content of the programme
The duration of the programme is two years which correspond to 120 credits of higher education: three semesters of course work (90 credits) and one semester (30 credits) of a Degree Project.

The education is at the advanced level. The literature and all other course material are in English, which also is the teaching language. There are presently no specialisations.

Eligibility and selection

General Admission Requirements
The general admission requirements are the same for all programmes. Please see the general admission requirements (http://www.kth.se/studies/master/application?l=en).

Specific Admission Requirements
According to the specific eligibility requirements for Transport Systems, the Bachelor's degree should be in engineering, science, economics or planning and include at least 45 ECTS credits in topics of applied quantitative analysis, such as mathematics, physics, statistics and/or computer science. These courses should at a minimum include calculus and basic statistics.
The students are required to be proficient in English, equivalent to English studies at upper secondary level (post-16) in Sweden, called English B. Equivalent knowledge in English can be verified through an internationally recognised test as for example:

- IELTS (an overall mark of 6.5 and no section below 5.5)
- TOEFL.

The specific requirements may be assessed as not fulfilled if:

1. The average grade is in the lower third on the grading scale used (above pass level),
2. The degree awarding institution is not considered to meet acceptable quality standards by the authorities of the country in which the institution is located, or
3. The degree does not qualify for admission to equivalent Master level in the country where the degree is awarded

The selection process for Transport Systems is based on a total evaluation of the following selection criteria: quality of university, grade point average, course work related to the programme (mathematics, statistics, computer science, transport, economics), idea for the Degree Project, English proficiency, working experiences, and references.

**Implementation of the education**

**Structure of the education**

The academic year covers 40 weeks, starting in September divided into two terms, Autumn and Spring, each of which consists of two study periods (KTH-Handbook 2, Flap 4.2), comprising Periods 1 through 4. Each study period concludes with a regular examination period of at least one week. [http://www.kth.se/student/schema/lasarsindelning-1.1007?l=en_UK](http://www.kth.se/student/schema/lasarsindelning-1.1007?l=en_UK)

**Courses**

The programme is course-based. Lists of courses are included in [Appendix 1](#).

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The programme starts with four compulsory courses that should provide fundamental knowledge about the transport system, its role in society and how it may be studied, evaluated and planned in order to fulfil transport policy goals.

During the next two terms, eight courses are to be selected that will deepen the theoretical understanding and analysis skills by introducing more advanced modelling tools and applying them to various complex transport policy issues.

The first course during each of these terms is compulsory. The remaining six courses can be selected from the conditionally elective courses in Appendix 1. A maximum of three conditionally elective courses may be selected from other relevant master’s programme courses available at KTH, with the approval of the Master of Transport Systems programme coordinator. The final term is devoted to the writing of a compulsory degree project.

**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.

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Conditions for participation in the programme
To be enrolled in the programme, students must be duly accepted into the programme with a valid admission letter issued by KTH Central Admissions Office. Students must also pay Student Union dues at the start of each semester in order to enrol in the programme. In addition to signing in as course participant at the beginning of a course and attending lectures, participation in class exercises and projects is a compulsory part of enrolling in any course.

Conditions for Being Promoted to the Next Level
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 set up an individual study plan. The main goal with the study plan is that the student should complete the remaining courses 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 Royal Institute of Technology has a policy for recognising previous academic studies. The decision on recognising documented results from similar education at other universities is taken by the vice dean of education at the School of Architecture and the Build Environment upon application by the student.

Studies abroad
It is presently not possible for Master’s students at the School of Architecture and the Build Environment to exchange semester one, two or three for studies abroad.

Degree project
The Degree Project (30 credits) is compulsory in order to complete a Master Degree at KTH. Students attending the Master’s Programme in Transport Systems can choose between the Master’s Projects listed in Appendix 1. The prerequisite for starting the Degree Project is completed courses corresponding to 60 credits.

Degree
Students who have successfully completed the programme will be awarded a "Teknologie masterexamen", translated into English as "Degree of Master of Science (two years)".

The student must apply for the degree certificate. Before application all courses should be completed and reported. Documents to hand in to the Masters administrator are: 1) The application form; 2) A copy of student union card, copy of receipts or a certificate from the student union office; 3) Attested photocopy of the previous university degree.

Please note that this degree does not correspond to the Swedish degree "Civilingenjör".

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

Master's Programme, Transport Systems, 120 credits (TTSYM), Programme syllabus for studies starting in autumn 2011

General courses

Year 1

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>AH2170</td>
<td>Transport Data collection and Analysis</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2171</td>
<td>Traffic Engineering and Management</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2300</td>
<td>Transport and Society</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2301</td>
<td>Transport Policy and Evaluation</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2302</td>
<td>Transport Modelling</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Optional courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH2173</td>
<td>Public Transport</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2303</td>
<td>Transport and Sustainable Development</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2304</td>
<td>Advanced Transport Modelling</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Supplementary information

Students must take all obligatory courses, at least three conditionally elective courses, and three additional courses from either the conditionally elective or elective course list (from both years), or a course in another program at KTH with the approval of the program coordinator.

Students who have taken the series AH1021/AH1022/AH1023 are automatically exempted from the requirement to take AH2300 and AH2171.

Students who have two mandatory courses in Year1 Period1 are advised to wait until Year2 to take AH2102, due to the excessive workload.
Year 2

Mandatory courses (7.5 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK2038</td>
<td>Theory and Methodology of Science with Applications (Social Science)</td>
<td>7.5</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>AG2421</td>
<td>A GIS Project</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH201X</td>
<td>Degree Project in Traffic and Transport Planning, Second Cycle</td>
<td>30.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2026</td>
<td>Railway Traffic - Market and Planning, Basic Course</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH202X</td>
<td>Degree Project in Railway Operation, Second Cycle</td>
<td>30.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2102</td>
<td>Logistics and Transportation</td>
<td>7.5</td>
<td>Second cycle</td>
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<tr>
<td>AH213X</td>
<td>Degree Project in Logistics, Second Cycle</td>
<td>30.0</td>
<td>Second cycle</td>
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<tr>
<td>AH2174</td>
<td>Traffic Simulation Modelling and Applications</td>
<td>7.5</td>
<td>Second cycle</td>
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<tr>
<td>AH220X</td>
<td>Degree Project in Transport- and Location Analysis, Second Cycle</td>
<td>30.0</td>
<td>Second cycle</td>
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<tr>
<td>AH221X</td>
<td>Degree Project in Systems Analysis and Economics, Second Cycle</td>
<td>30.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2305</td>
<td>Spatial and Transport Economics</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>
Appendix 2: Specialisations

Master's Programme, Transport Systems, 120 credits (TTSYM), Programme syllabus for studies starting in autumn 2011

This programme has no specialisations.