Programme syllabus

Master's Programme, Economics of Innovation and Growth, 120 credits
Masterprogram, innovations- och tillväxtekonomi
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

The information is valid for students who started the program academic year 2011/2012. Later decisions may affect year 2 in the program. Please look at www.kth.se/studies?l=en_UK for further information.

Innovation is a prime factor behind value creation, economic prosperity and employment growth. These processes take place at the level of enterprise, region and nation and will lead to new businesses as well as to increased competitiveness of the existing ones. The growing awareness of the importance of innovation among knowledge-based firms, financial markets and policymakers has created demand for a programme which integrates aspects of technology, economy, financing and other related areas.

Knowledge and understanding

The programme is focused on the economic aspects of the innovation process, i.e. on the process of commercializing inventions. Innovations are created in a process of trying to solve production problems, to learn from experience, to find new and better ways of doing things, to profit from opening up of new markets, and sometimes just to satisfy curiosity. The intensity and direction of innovation activities are conditioned by laws, institutions, customs and regulations that affect their incentive and their ability to appropriate rents from newly created technologies. The Master Programme aims to provide students with the analytical tools derived from modern economic theories. They include developing, specialization, diversification and dissemination of ideas and knowledge, innovation activities, international competition, trade and growth. Another objective is to make the participants in the program familiar with applied techniques for analysing, measuring and predicting specialisation, trade flows and price patterns in the context of a global economy with dynamic competitive advantages and increasing returns.

Skills and abilities
The student should acquire a qualified training in understanding and solving complex problems in modern economics and in producing solid foundations for policy decision by knowledge-based firms, financial markets and policymakers.

**Ability to make judgements and adopt a standpoint**

The student should acquire an analytical view of thinking and a critical understanding of the relationship between innovation and growth and of its methodological and scientific issues.

**Extent and content of the programme**

The duration of the programme is two years and corresponds to 120 ECTS points – three semesters of course work (90 ECTS points) and one semester of Degree project (30 ECTS points). The education is at the advanced level. The literature and all other course material are in English, which also is the teaching language.

**Eligibility and selection**

The basic requirement for admission to a Master’s program at advanced level is a national university degree at basic level (first cycle) of at least 180 hp or an equivalent international degree. ”

**Specific admission requirements**

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,
3. the degree does not qualify for admission to equivalent Master level in the country where the degree is awarded.

According to the specific eligibility requirements for Economics of Innovation and Growth, the Bachelor’s degree should be in economics, mathematics, statistics or engineering and include at least 30 ECTS points (or equivalent) in economics and/or mathematics and/or 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 selection process for Economics of Innovation is based on a total evaluation of the following selection criteria: university, GPA and course work related to the programme (economics, mathematics, statistics).

**Implementation of the education**

**Structure of the education**
The Academic year in Sweden consists of an autumn and a spring term. More information on the structure of the academic year, semesters and other study periods can be found by using the link: http://www.kth.se/studies/calendar?l=en.

The academic year covers 40 weeks, starting in September divided into two terms, which each consists of two study periods (KTH-Handbook 2, Flap 4.2). Each study period concludes with a regular examination period of at least one week. In addition, three re-exam periods are scheduled – after New Year (January), after the regular examination period of study period 4 (June) and before the start of a new academic year (August).

The programme starts with four compulsory courses that provide fundamental tools for studying economics of innovation and conducting research projects. The first term also includes a non-compulsory course in mathematics. The second term comprises one compulsory and three non-compulsory courses that will deepen the theoretical and empirical understanding of economics of innovation and growth. In addition to these courses, a compulsory course in research methodology will be provided in close proximity to the master thesis work.

The remaining courses required can be chosen from the conditionally elective courses. The course in mathematics can also be added to the list of elective courses. The final term is devoted to the writing of a compulsory Degree Project.

Courses

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

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The programme covers 120 ECTS points, including 45 ECTS points in compulsory courses, 45 ECTS points in eligible courses and a compulsory Degree Project corresponding to 30 ECTS points.

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.

All courses, including the Degree Project, are graded on a scale from A to F. A-E are passing grades with A being the highest grade. The grades pass (P) and fail (F) are used for certain tasks, like project assignments.

Conditions for participation in the programme

To be enrolled in the programme, you must be duly accepted into the programme with a valid admission letter issued by KTH Central Admissions Office.

With the enrolment, the student has submitted their intention of studying and participating in the programme. After that it is possible for the student to:

- register for courses,
- register for the term,

- get the academic record.

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 ECTS points from study year 1 must be completed by the exam period in August. Students who 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 students at the Economics of Innovation and Growth to exchange semester one, two or three for studies abroad.

**Degree project**

The Degree Project (30 ECTS points) is compulsory in order to apply for a Master Degree at KTH. The prerequisite for starting the degree project is completed courses corresponding to 60 ECTS points. The Degree project is graded on a scale A-F, where A-E are passing grades with A as the highest grade.

**Degree**

Students who have successfully completed the programme will be awarded a "Degree of Master of Science (two years)" with a specialisation in Economics of Innovation and Growth. The student must apply for the degree certificate. All courses should be completed and reported before application. Documents to hand in to the Master administrator are: 1) The application form; 2) Attested photocopy of the previous university degree.

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

Master's Programme, Economics of Innovation and Growth, 120 credits (TEINM), 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 Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH2001</td>
<td>Microeconomics</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2002</td>
<td>Econometrics</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2003</td>
<td>Macroeconomics</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2004</td>
<td>Industrial Dynamics</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2011</td>
<td>Economics of Innovation</td>
<td>7.5 hp  Second cycle</td>
</tr>
</tbody>
</table>

Optional courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH2006</td>
<td>Economic Geography</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2007</td>
<td>International Economics</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2008</td>
<td>Public Economics</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2009</td>
<td>Mathematics for Economic Analysis</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2015</td>
<td>Managerial Economics</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AH2020</td>
<td>Macroeconomics for Business</td>
<td>7.5 hp  Second cycle</td>
</tr>
<tr>
<td>AI2901</td>
<td>Corporate Finance and Markets I</td>
<td>7.5 hp  Second cycle</td>
</tr>
</tbody>
</table>

Year 2

Mandatory courses (7.5 Credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits Edu. level</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Course code</td>
<td>Course name</td>
<td>Credits</td>
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</tr>
<tr>
<td>AH2014</td>
<td>Theory and Methodology of Science</td>
<td>7.5 hp</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>AH2010</td>
<td>Econometrics II</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2012</td>
<td>Industrial Organization</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2013</td>
<td>Microeconomics II</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2018</td>
<td>Management and Strategy</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2019</td>
<td>Innovation and Entrepreneurship</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>ME2701</td>
<td>Corporate Finance and Markets II</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

**Supplementary information**

At least 3 of the conditionally elective courses must be taken.
Appendix 2: Specialisations

Master's Programme, Economics of Innovation and Growth, 120 credits (TEINM), Programme syllabus for studies starting in autumn 2011

This programme has no specialisations.