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 09 (HT - Autumn term; VT - Spring term).

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

Programme objectives

In the modern economy, innovation is crucial for value creation, growth and employment innovation processes that take place at the level of enterprise, region and nation. Innovation 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 others on the study of the complex process from a new idea to a successful market introduction of a new product or a new process.

Knowledge and understanding

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 new markets, and sometimes just to satisfy the 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’s Programme aims to provide students with the analytical tools derived from modern theories of economics. 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 course familiar with applied techniques for analysing, measuring and predicting specialisation, trade flows and price patterns in the context of global economy with dynamic competitive advantage and increasing return.

Skills and abilities

The student should acquire a qualified training in understanding and solving complex problems in modern economics and in producing decision support for policy decisions 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 which correspond to 120 higher education level: three semesters of course work (90 credits) and one semester (30 credits) of 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.

Eligibility and selection

The basic eligibility for a master’s programme at KTH is a completed Bachelor's degree, equivalent to a Swedish Bachelor's degree (180 credits), from a university recognised by government or accredited by a recognised organisation. In addition, applicant must provide a 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. 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 accepted.

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 credits in economics and/or mathematics and/or statistics. The students are required a good knowledge of English, equivalent to Eng B.

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 below: (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 Christmas, after the regular examination period of study period 4 (end of May) and before the start of a new academic year (August)

The programme starts with four compulsory courses that should provide fundamental tools for studying economics of innovation and conducting research projects. The first term also includes a non-compulsory course in mathematics. During the second term four compulsory courses will deepen the theoretical and empirical understanding of economics of innovation and growth. A compulsory course in research methodology will be provided currently during terms 1-3.

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.

The programme covers 120 credits, including 52.5 credits in compulsory courses, 37.5 credits in eligible courses and a compulsory Degree Project corresponding to 30 credits.

All courses, including compulsory courses, must be selected via www.studera.nu. Read more about how to do this by carefully studying the information on the following link: http://www.kth.se/student/programkurser?programme=me

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 Master’s 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.

To be able to participate in the studies the student must enroll 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 enrollment, the student has submitted their intention of studying and participating in the programme. After that is it 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 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 Economics of Innovation and Growth to exchange semester one, two or three for studies abroad.

**Degree project**

The Degree Project (30 credits) is compulsory in order to apply for a Master Degree at KTH. Students attending the Master’s Programme in Economics of Innovation can choose between the Degree Project listed in Appendix 1. The prerequisite for starting the degree project is completed courses corresponding to 60 credits. 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. 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.
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 2009

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>AH2001</td>
<td>Microeconomics</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2002</td>
<td>Econometrics</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2003</td>
<td>Macroeconomics</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2004</td>
<td>Industrial Dynamics</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2005</td>
<td>Financial Economics</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2006</td>
<td>Economic Geography</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2007</td>
<td>International Economics</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2014</td>
<td>Theory and Methodology of Science</td>
<td>7.5 hp</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>AH2009</td>
<td>Mathematics for Economic Analysis</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2015</td>
<td>Managerial Economics</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>AH2020</td>
<td>Macroeconomics for Business</td>
<td>7.5 hp</td>
<td>Second cycle</td>
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</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>AH200X</td>
<td>Degree Project in the Economics of Innovation and Growth, Second Cycle</td>
<td>30.0 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>AH2011</td>
<td>Economics of Innovation</td>
<td>7.5 hp</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>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>AH2015</td>
<td>Managerial Economics</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>
</tbody>
</table>
Appendix 2: Specialisations

Master's Programme, Economics of Innovation and Growth, 120 credits (TEINM), Programme syllabus for studies starting in autumn 2009

This programme has no specialisations.