



Utbildningsplan

Masterprogram, hållbar miljöteknik och infrastruktur

Master's Programme, Environmental Engineering and Sustainable Infrastructure, 120 credits

120,0 högskolepoäng

Gäller för antagna till utbildningen fr o m HT10.

Utbildningens mål

The information is valid for students who started the program academic year 2010/2011. Later decisions may affect year 2 in the program. Please look at www.kth.se/studies?l=en_UK for further information.

Kunskap och förståelse

The Master's Programme in Environmental Engineering and Sustainable Infrastructure (EESI) will provide students with a qualified basis for analysis and resolution of environmental problems from a technical, environmental and managerial point of view. The problems treated are related to water and land use, natural hazards and climate change, pollution and contamination issues and sustainable infrastructure remediation and treatment solutions and methods. Courses emphasize the environmental management aspect of natural resources, physical infrastructure and housing. The scope of EESI is international and multicultural.

Färdigheter och förmågor

The student will be exposed to advanced methods and techniques to identify, describe, quantify and solve environmental problems with an engineering approach. The methods and techniques of urban and regional development, which are covered, are those that incorporate the demands of environmental protection, and sustainability of development agendas at local and global levels. After completing the programme the student should have strong skills of communication, be able to provide leadership in their area of work based on the fact that they have an understanding of how different professions work and perceive issues.

Värderingsförmåga och förhållningssätt

Students will increase their understanding of the functioning of the ecosystems, learn how to assess local and global environmental impacts of human activities, and investigate how to modify them via physical, bio-chemical and policy interventions.

Utbildningens omfattning och innehåll

The duration of the programme is two years which correspond to 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.

The curriculum reflects the interdisciplinary nature of the programme that provides students with a profound knowledge on sustainable development strategies through a meeting between natural and social science.

The programme offers two specialization tracks, Environmental Engineering and Sustainable Infrastructure. The two tracks represent two separate professional competences where the former focuses attention on the analytical tools for environmental management pertaining to natural sciences. Sustainable Infrastructure gives emphasis to analytical and

conceptual frameworks for sustainable development on a local, national and global level. In practice these two professional specializations are interconnected as Sustainable Infrastructure refers to the societal context of sustainability strategies while Environmental Engineering relates to the professional expertise that provides scientific knowledge for these sustainability strategies. By merging these professional competences into one programme, graduates acquire a comprehensive understanding of the interaction between societal and natural processes that affect environment, the actors involved, and the social, economic and environmental determinants that contribute to the development of a sustainable society.

Behörighet och urval

General admission requirements

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

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

The specific admission requirement for the Master's programme Environmental Engineering and Sustainable Infrastructure is a Bachelor degree in the field of architecture, civil engineering or social science relevant to the scope of the programme. The students are required a good knowledge of English, equivalent to Eng B.

The selection process for the programme is based on a total evaluation of the following selection criteria: GPA, course work related to the programme, thesis proposal, motivation letter, working experiences and references.

Utbildningens genomförande

Utbildningens upplägg

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.

The first term starts with a common introduction for both specialization tracks, consisting of two courses, Environment Impact Assessment and Political Economy for Planners. These courses should provide the fundamental understanding and concepts of the societal need and demand for an integrated and sustainable approach to environmental problems.

In the second period primary courses are offered which provide basic knowledge for the specializations. The third and fourth period the first year comprise courses that provide students with deeper knowledge and skills in the specialization tracks. Some of the courses are elective for both specializations.

The second year two compulsory project courses are offered, one for the student with the specialisation in Environmental Engineering and one with for the specialisation in Sustainable Infrastructure. These courses will synthesize and apply the knowledge achieved in the two first semesters by studying a selected problem complex in project form. The project courses will be supported by a compulsory course in Philosophy of Science and Methodology and courses associated to each project theme.

The final term is devoted to the writing of a compulsory Degree Project. A maximum of two conditionally elective courses may be selected from other relevant master's programme courses available at KTH after application to the vice dean of education.

Kurser

Utbildningen sker i kursform. Kurslistor finns i [bilaga 1](#).

The programme is course-based, and multitude pedagogic forms are applied, ranging from lectures, seminars, individual assignments, group works to integrated projects. Within the programme three courses (22,5 hp) are offered that are mandatory for all students and that provide a common expertise for students in both specializations. In addition a sequence of core courses (60hp) is offered which allows students to acquire professional skills in their specialization.

Betygssystem

För kurser på KTH används en sjugradig målrelaterad betygsskala A-F som slutbetyg för kurser på grundnivå och avancerad nivå. A-E är godkända betyg med A som högsta betyg. Betygen godkänd (P) och underkänd (F) används som slutbetyg då särskilda skäl föreligger.

Villkor för deltagande i utbildningen

Students who have been admitted to the programme have to attend the registration meeting in order to enroll for the programme. If a student is not able to attend the registration meeting for reasons beyond his/her control he/she should register not later than two weeks after the start of the courses. The second period in year 1 offer (conditionally) elective courses and the course selection lead to one of the two specialisations due to prerequisites in later courses. Information will be supplied during period 1 about the contents of the courses. Students should inform the Master administrator on their choice before a defined date. After registration in the programme students will be registered for term 1 and 2.

For registration in term 3 students should have completed at least 45hp. For registration in term 4 students should have completed at least 67,5 hp of the compulsory courses.

Through signing the attendance list during the first week of the course, students will be registered for the course. If a student for reasons beyond his/her control is not able to attend during the first week he/she has to contact the course administrator.

Tillgodoräknanden

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 Built Environment upon application by the student.

Utlandsstudier

The programme offers no opportunities for studies abroad except for the Master's Degree project where the student can choose to carry out a study at an organization outside Sweden. However, the School of Architecture and the Built Environment has no resources to provide support so the student should make such arrangements.

Examensarbete

The Degree project comprises 30hp and provides students with the opportunity to investigate a problem in depth under the supervision of experienced practitioners and researchers.

For registration of the degree project students should have completed at least 67,5 hp of the compulsory courses.

If a student intends to carry out a Degree project within another field of studies, he/she should apply for exemption from the vice dean of education. The Degree project is graded on a scale A-F, where A-E are passing grades with A as the highest grade. The prerequisite for starting the degree project is completed courses corresponding to 60 credits.

Examen

Students who have fulfilled all course requirements in the Master's programme (120 ECTS) will be awarded a "Teknologie masterexamen", translated into English as "Degree of Master of Science (two years)". An application for the degree certificate should be submitted to the Master administrator, together with a copy of a student union card,

copy of receipts or a certificate from the student union office, and an attested photocopy of the previous university degree (B.Sc. or a B. Eng, or equivalent). The degree certificate will be mailed to the student's permanent address by registered mail.

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

[Bilaga 1 - Kurslista](#)

[Bilaga 2 - Inriktningsbeskrivningar](#)



Bilaga 1: Kurslista

Masterprogram, hållbar miljöteknik och infrastruktur (TEESM), Utbildningsplan för kull HT2010

Gemensamma kurser

Årskurs 1

Årskurs 2

Hållbara infrastrukturer (HI)

Årskurs 1

Obligatoriska kurser (15,0 hp)

Kurskod	Kursnamn	hp	Utb. nivå
AE2501	Miljökonsekvensbeskrivning	7,5	Avancerad nivå
AG2142	Political Economy for Environmental Planners	7,5	Avancerad nivå

Villkorligt valfria kurser

Kurskod	Kursnamn	hp	Utb. nivå
AE2101	Environmental Dynamics/Chemical Processes	7,5	Avancerad nivå
AE2301	Water and Waste Handling	7,5	Avancerad nivå
AE2402	Miljögeologi	7,5	Avancerad nivå
AE2502	Naturresursförvaltning	7,5	Avancerad nivå
AE2503	Miljödata	7,5	Avancerad nivå
AG2141	Urban Infrastructure	7,5	Avancerad nivå
AG2143	Sustainable Rural and Urban Development	7,5	Avancerad nivå
AG2147	Sustainable Urbanism and Green Metropolitan City Regions	7,5	Avancerad nivå
AG2501	Human Settlements and Housing	7,5	Avancerad nivå
AI2509	Management of Land and Water	7,5	Avancerad nivå

Årskurs 2

Obligatoriska kurser (30,0 hp)

Kurskod	Kursnamn	hp	Utb. nivå
AG2145	Project Sustainable Infrastructure	15,0	Avancerad nivå
AG2803	Ecosystem Support and Environmental Justice	7,5	Avancerad nivå
AK2036	Vetenskapsteori och vetenskaplig metodik med tillämpningar (naturvetenskap)	7,5	Avancerad nivå

Miljöteknik (MT)

Årskurs 1

Obligatoriska kurser (30,0 hp)

Kurskod	Kursnamn	hp	Utb. nivå
AE2101	Environmental Dynamics/Chemical Processes	7,5	Avancerad nivå
AE2201	Miljödynamik/fysikaliska processer	7,5	Avancerad nivå
AE2501	Miljökonsekvensbeskrivning	7,5	Avancerad nivå
AG2142	Political Economy for Environmental Planners	7,5	Avancerad nivå

Villkorligt valfria kurser

Kurskod	Kursnamn	hp	Utb. nivå
AE2104	Miljömätning och monitoring	7,5	Avancerad nivå
AE2301	Water and Waste Handling	7,5	Avancerad nivå
AE2402	Miljögeologi	7,5	Avancerad nivå
AE2502	Naturresursförvaltning	7,5	Avancerad nivå
AE2503	Miljödata	7,5	Avancerad nivå
AI2509	Management of Land and Water	7,5	Avancerad nivå

Årskurs 2

Obligatoriska kurser (30,0 hp)

Kurskod	Kursnamn	hp	Utb. nivå
AE2001	Projekt i miljöteknik	15,0	Avancerad nivå
AE2102	Quantitative Hydrogeology	7,5	Avancerad nivå
AK2036	Vetenskapsteori och vetenskaplig metodik med tillämpningar (naturvetenskap)	7,5	Avancerad nivå



Bilaga 2: Inriktningar

Masterprogram, hållbar miljöteknik och infrastruktur (TEESM), Utbildningsplan för kull HT2010

Hållbara infrastrukturer (HI)

Emphasise the analytical and conceptual frameworks for sustainable development on local, national and global level. It refers to the societal context of sustainable strategies.

Miljöteknik (MT)

Focuses attention on analytical tools for environmental management pertaining to natural sciences.

Information about compulsory courses for each specialisation is found in the Excel sheet “Course overview” at the link: <http://www.kth.se/studies/master/programmes/abe/2.1572?l=en>