Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Environmental Economics and Management - Master´s Programme

Version 1. Is valid between autumn 2007 and spring 2010

Programme code:
NM005

Scope:
120 ECTS

Level affiliation:
2 - Second cycle

Degree
Degree of Master of Science

Responsibe faculty:
Faculty of Natural Resources and Agricultural Sciences

Appendices

- Appendix for students admitted in the autumn 2007
- Appendix for students admitted in the autumn 2008
- Appendix for students admitted in the autumn 2009

1. Decision

The Board of the Swedish University of Agricultural Sciences (SLU) decided on 12-13 June 2006 to establish the Environmental Economics and Management – Master's programme.

The programme syllabus was approved by the Faculty Board at the Faculty of Natural Resources and Agricultural Sciences in 3 May 2007, to be valid from the 2007/2008 academic year. Revised in accordance with decisions by Vice Chancellor on 24 September, 22 October, 17 December 2007 and 10 May 2010.

The Environmental Economics and Management – Master's programme, aims to a degree of Master of Science (120 credits). The programme has the following programme code: NM0005.

2. Prior knowledge and other requirements

2.1 Previous studies
Admission to the Environmental Economics and Management – Master's programme requires a first-cycle qualification comprising 180 credits and specialised studies comprising 90 credits within one of the following subjects/disciplinary domains:
- Business Administration
- Economics.

Applicants with the corresponding qualifications obtained by means of a degree from another country, or with the corresponding knowledge obtained in some other way, may also be regarded as fulfilling the specific entry requirements.

The applicant must further have a level of English equivalent to upper secondary school English B. An applicant with a first-cycle qualification from SLU comprising 180 credits automatically fulfils this requirement. Special rules apply for applicants with qualifications from one of the Nordic countries and some English-speaking countries.

Specific requirements apply for admission to the various individual courses included in the programme.

3. Intended learning outcomes

3.1 General learning outcomes
According to the Swedish Higher Education Act, Chapter 1, Section 9 (Högskolelagen 1 kap, 9 §) "Second-cycle courses and study programmes shall be based fundamentally on the knowledge acquired by students during first-cycle courses and study programmes, or its equivalent.

Second-cycle courses and study programmes shall involve the acquisition of specialist knowledge, competence and skills in relation to first-cycle courses and study programmes, and in addition to the requirements for first-cycle courses and study programmes shall:

- further develop the ability of students to integrate and make autonomous use of their knowledge
- develop the students´ ability to deal with complex phenomena, issues and situations, and
- develop the students´ potential for professional activities that demand considerable autonomy, or for research and development work. Ordinance (2006:173)."

3.2 Specific learning outcomes for a Master of Science (120 credits)
The student must achieve the following learning outcomes, in accordance with

the supplement to the Ordinance for Swedish University of Agricultural Sciences (SLU):

Knowledge and understanding
For a Master of Science (120 credits) students must
- demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge of certain areas of the field, as well as deeper insight into current research and development work; and
- demonstrate specialised methodological knowledge in the main field of study.
Competence and skills
For a Master of Science (120 credits) students must
- demonstrate an ability to critically and systematically integrate knowledge and to analyse, assess and deal with complex phenomena, issues and situations, even when limited information is available;
- demonstrate an ability to critically, independently and creatively identify and formulate issues and to plan and, using appropriate methods, carry out advanced tasks within specified time limits, so as to contribute to the development of knowledge, and to evaluate this work;
- demonstrate an ability to clearly present and discuss their conclusions and the knowledge and arguments behind them, in dialogue with different groups, orally and in writing, in both national and international contexts; and
- demonstrate the skills required to participate in research and development work or to work independently in other advanced contexts.
Judgement and approach
For a Master of Science (120 credits) students must
- demonstrate an ability to make assessments in their main field of study, taking into account relevant scientific, social and ethical aspects, and demonstrate an awareness of ethical aspects of research and development work;
- demonstrate insight into the potential and limitations of science, its role in society and people's responsibility for how it is used; and
- demonstrate an ability to identify their need of further knowledge and to take responsibility for developing their knowledge.

3.3 Detailed learning outcomes for Environmental Economics and Management – Master's programme

Within the general objectives of a Master of Science (120 hp), SLU has specified the following learning outcomes for Environmental Economics and Management – Master's programme

Knowledge and understanding
For a Master of Science (120 credits) degree students must
- demonstrate broader understanding of environmental problems and knowledge about how these can be analysed at company level as well as society level,
- demonstrate understanding for how consideration of factors that are difficult to measure can be taken in economic analysis and decision-making,
- demonstrate knowledge about environmental legislation and environmental and quality certification,

Specialisation in Business Administration
- demonstrate understanding of strategic leadership and ethical dimensions with respect to customers, market and communications,
- demonstrate understanding of entrepreneurship and operational development,
- demonstrate understanding for the environmental work carried out within companies and organisations and how it is impacted by market forces,

Specialisation in Economics
- demonstrate understanding of how different quantitative methods can be used to analyse environmental policy problems,
- demonstrate understanding of how micro-economic methods can be used to analyse enviro-economic problems and design environmental policy control methods,
- demonstrate understanding of macro-economic analysis of the environment and growth,
- demonstrate knowledge about the potential labour market,
- demonstrate significant in-depth knowledge about business administration or economics,
- demonstrate knowledge about relevant and current economic research that provides opportunities for successfully carrying out studies at research level,
- demonstrate well-developed ability to understand and account for progress in the development of methods for taking into consideration, directing and measuring environmental aspects within various operations.

Competence and skills
For a Master of Science (120 credits) students must
- demonstrate ability to collect, analyse and summarise information and maintain a critically scrutinising attitude which entails the ability to question given prerequisites, methods and approaches,
- demonstrate a well-developed ability to describe and analyse environment-related problems within both economics and management,
- demonstrate an attitude that entails considering complex problems from a systems perspective,

- demonstrate ability in collecting, ordering and critically interpreting and presenting reports.

Specialisation in Business Administration
- demonstrate ability to independently and critically identify and formulate questions relating to management with a sustainability goal,
- demonstrate ability to use financial control in decision-making,
- demonstrate ability to implement business administration tools in the environmental work of organisations,
- demonstrate ability to use production economics models and tools to analyse environmental problems within companies and organisations.

Specialisation in Economics
- demonstrate ability to independently and critically identify questions relating to environmental problems and choose a suitable economic methods for analysing these,
- demonstrate ability to use quantitative tools to propose economically efficient solutions to environmental problems,
- demonstrate ability to use econometric and other quantitative methods to quantify the effects of environmental policy,
- demonstrate ability to evaluate his/her work,
- demonstrate ability to speak and write about environmental economics and company management to various target groups,
- demonstrate ability to account for and discuss his/her conclusions and the knowledge and arguments that these are based on,
- demonstrate such skills as are required to participate in research and development work or to work independently with other advanced activities.

Judgement and approach
For a Master of Science (120 credits) students must
- demonstrate ability to make assessments with consideration for relevant scientific, environmental, ethical and social aspects,
- demonstrate understanding of the interplay between economics, society and the environment within the framework for sustainable development,
- value integration of different perspectives in a system analysis in order to find different possible solutions to problems,
- demonstrate insight into the opportunities and limitations of science, and its role in humankind´s sustainable use of biological natural resources,
- demonstrate insight into and express an attitude based on factual criticism, tolerance, realism, prudence and insight into people´s responsibility for how science is used,

- demonstrate ability to participate in discussions relating to sustainable use of the biological natural resources,
- demonstrate ability to value his/her own competence in relation to the labour market and take responsibility for developing his/her competence.

4. Possibilities for further study

A student who has completed Environmental Economics and Management – Master's programme with a Master of Science (120 credits) meets the special entry requirements for admission to further studies at the third-cycle level at SLU.

Which third-cycle subject areas that are available at the Faculty of Natural Resources and Agricultural Sciences is specified in an appendix to the programme syllabus approved by the study programmes board.

Master of Science (60 credits)
The programme also allows for the awarding of a Master of Science (60 credits) after one year of studies, including an independent project comprising 15 credits. Master of Science (60 credits) corresponds to the general entry requirements for further studies at the third-cycle level at SLU.

5. Content and outline

5.1 Courses
Courses included in the Environmental Economics and Management – Master's programme are approved by the study programmes board. They are presented in an appendix to the programme syllabus which also contains descriptions of the programme structure (framework timetable). The intended learning outcomes and course content are presented in the course syllabus for each course. For the independent project (degree project) there are special instructions, which are approved by the study programmes board.

5.2 Outline
Environmental Economics and Management – Master´s programme offers education within the principal areas of business administration and economics. As a base for specialist studies within business administration or economics, the students are offered basic knowledge in the principal areas of economics and business administration, but also in ethics, statistics, agricultural history and scientific methods in order to acquire a broad skills base. Already the first semester entails a choice for students. The choice is between the two main areas Economics or Business Administration.

Specialisation in Business Administration

The first year is based on application of business administration knowledge in environment-related contexts. Courses provide insight into problem areas and theoretical frameworks and builds up in-depth understanding of environmental management, marketing, production economics, organisation theory, accounting and ethics.

The second and concluding year includes application and further development of knowledge within investment and finance as well as company management, and a one semester (30 credits) Master´s degree project. There is also room for a total of 10 credits from optional courses in the programme, in which students can broaden their knowledge.

The programme offers in-depth courses that are partly general in character, and several courses that are more directly aimed at theory and implementation within the problem areas of environmental and natural resource management and the forestry industry chain. Some courses specialise in the area agricultural and food production, but also provide valuable understanding of natural resource management in an agricultural context.

In studies within the main area of business administration, natural resource issues are analysed from the perspective and values of companies. In this conjunction, cost-effective adaptation to customer preferences and society´s legal requirements are significant study objects. The teaching also emphasises how individual companies and sectors at their own initiative, or in response to political intervention, can affect the prerequisites for sustainable development by developing profitable and more environmentally adapted products and processes. Business administration includes courses in environmental strategies, investment and financing theory, production economics, company management, financial and environmental control, marketing and organisation and leadership.

Specialisation in Economics
The economics content of the course has been developed and is carried out in cooperation with Uppsala University, and the courses take place alternately at the University of Agricultural Sciences and Uppsala University. The first year provides a base in quantitative methods, micro-economic theory, statistics, econometrics and environmental policy. Theoretical frameworks are presented and used in exercises and problem-solving.

The second and concluding year includes application and further development of knowledge acquired during the first year. Applications within sustainable development, together with a number of elective courses, offers insights into problem areas

which can become the subject of a Master´s degree project (30 credits) during the concluding semester.

In studies within the main area of Economics, the natural resource issues are analysed at an aggregated social level. The opportunities and limitations of a market economy in terms of environmental and natural resource management is a starting point. Various forms of market failures and political failures are studied, as well as the methods that exist for evaluating and correcting them. Cost-effective control tools are studies, where environmental goals are assumed to be achieved in competition with other welfare goals. The concepts of sustainable development and the relationship between economic growth and environmental quality are analysed. Economics includes elements such as in-depth micro-economic theory, investment and financing theory, production economics, economic growth and the environment, environmental policy control tools, global food supply, industrial organisation and environmental evaluation.

In addition to courses in economics, there are also opportunities to broaden and supplement the economic perspectives on management of natural resources, such as ethics, agricultural history, environmental communications, environmental protection, processing technology, the structure and economics of the processing chain, and also developing countries studies.

Independent project (degree project)
The Degree of Master of Science includes an independent project (Master´s degree project), worth at least 30 credits in the main subject. The purpose of the Master´s degree project is for the student to demonstrate his/her ability to plan an investigation, use the knowledge gained from the courses and apply this knowledge in a problem area that is of relevance to the in-depth subject the student has chosen. In conclusion, the results of the investigation shall also be accounted for. The student thus has the opportunity, under the guidance of a supervisor, to use the knowledge acquired during the study period in an independent and scientific manner.

6. Examination

Each course includes one or several tests. The semesters U, 3, 4 or 5 are used for grading the courses, unless there is an exemption decision. Grading criteria are described in an appendix to each syllabus.

Grades are determined by an examiner appointed by SLU. General rules and guidelines for assessment and grading can be found in the "Internal rules for grading and examination rights" and in "Regulations for education in first and second cycle at the Swedish University of Agricultural Sciences (SLU)".

7. Degree

7.1 Degree awarded after completion of the study programme (120 credits)
A Master of Science (120 credits) in Business and Economics with main subject Business Administration as described in the programme syllabus for Environmental Economics and Management – Masters's programme, is awarded to students who complete the course requirements (pass courses) of 120 credits according to the following:

- at least 30 credits for courses with specialised study in business administration (second cycle A1N, A1F/D)
- at least 30 credits for an independent project (degree project / second cycle A2E/E) in business administration
- a maximum of 15 credits may be for courses passed during the first cycle.

Course requirements further includes:
- 60 credits programme courses according to the approved study plan
- an independent project within business administration according to the approved study plan and instructions for the programme.

In addition the student must have a Degree of Bachelor or professional qualification of at least 180 credits with specialisation Business Administration.

A student who fulfils the requirements for a Master of Science (120 credits) will, upon request, receive a degree certificate. The degree certificate will state that the student has been awarded a Master of Science in Business and Economics (120 credits) with a major in Business Administration.

The degree certificate will also state that the requirements have been fulfilled according to the programme syllabus for Environmental Economics and Management – Master's programme. Detailed course requirements are shown in the study plan, which is approved by the study programme board and presented in an appendix to the programme syllabus.

Master of Science (120 credits) in Business and Economics with main subject Economics as described in the programme syllabus for Environmental Economics and Managment – Masters's programme, is awarded to students who complete the course requirements (pass courses) of 120 credits according to the following:

- at least 30 credits for courses with specialised study in economics (second cycle A1N, A1F/D)
- at least 30 credits for an independent project (degree project / second cycle

A2E/E) in economics
- a maximum of 15 credits may be for courses passed during the first cycle.

Course requirements further include:
- 60 credits programme courses according to the approved study plan
- an independent project within economics according to the approved study plan and instructions for the programme.

In addition the student must have a Degree of Bachelor or professional qualification of at least 180 credits with specialisation Economics.

A student who fulfils the requirements for a Master of Science (120 credits) will, upon request, receive a degree certificate. The degree certificate will state that the student has been awarded a Master of Science in Business and Economics (120 credits) with a major in Economics.

The degree certificate will also state that the requirements have been fulfilled according to the programme syllabus for Environmental Economics and Management – Master's programme. Detailed course requirements are shown in the study plan, which is approved by the study programme board and presented in an appendix to the programme syllabus.

7.2 Other degrees the student may be awarded after completion of the study programme
The courses included in Environmental Economics and Management – Master's programme also allow for the awarding of the following degrees on condition that SLU's demands for general qualifications are fulfilled:

- Master of Science (60 credits) with Business Administration as the main field
- Master of Science (60 credits) with Economics as the main field.
- Master of Science (120 credits) with Business Administration as the main field
- Master of Science (120 credits) with Economics as the main field.

8. Miscellaneous

8.1 Credit transfer
Credits for courses from another higher education institution, in Sweden or abroad, may be transferred and recognised in the degree. Credits may be deducted if there is significant overlap between the courses passed at SLU and the external courses the student wishes to include in the degree. Credit transfer cannot be done if there

is a considerable difference between the courses.

Credit transfer requests are considered on an individual basis. Once transfer has been approved, equivalent knowledge and skills acquired professionally may also be recognised.