Faculty of Science

MVES13, Environmental Science: A Circular and Biobased Society, 15 credits

Miljövetenskap: Ett cirkulärt och biobaserat samhälle, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2020-07-03 to be valid from 2020-07-03, spring semester 2021.

General Information

The course is an elective second-cycle course for a degree of Master of Science in Environmental Science, Environment Health Science or Applied Climate Strategy.

Language of instruction: Swedish

Main field of studies	*Depth of study relative to the degree requirements*
Environmental Science	A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

The general aim of the course is that the student should acquire knowledge and skills to understand, study and analyse a circular and biobased society. focus is on measures for decreased emission of greenhouse gases and sustainable use of resources, material and land. The course deepens the students' understanding of the flow of terrestrial resources, nationally and globally, and the natural and social processes that control these. The course gives an advanced understanding of aims, strategies and tools that control the development towards a circular biobased society at the local, national and global level. The course includes studies of different methods for analysis and practical development towards a circular biobased society.

Knowledge and understanding

On completion of the course the student shall be able to:

- explain the relationship between a circular biobased society and community

planning, with a focus on sustainable use of resources, material and land
- compare different societal actors' potential to steer towards a circular biobased society with focus on sustainable land and resource utilisation.
- describe opportunities and limitations regarding a circular biobased society, with the aim to develop long-term sustainability at the local, regional, national and global level
- give an account of methods to evaluate environmental, social and economic effects of circular biobased solutions

Competence and skills
On completion of the course the student shall be able to:

- critically and systematically integrate knowledge to understand opportunities and limitations with a circular biobased society
- independently identify relevant issues, and plan and carry out assignments with relevant methods within given time frames, that could contribute to knowledge development about a circular biobased society
- analyse complex relationships with limited information to study specific issues
- evaluate her/his work about a circular biobased society in relation to selected method and previous knowledge
- communicate, orally and in writing, the conclusions with different relevant actors in the area of circular biobased society
- show skills needed to participate in research or practical activities about issues related to a circular biobased society

Judgement and approach
On completion of the course the student shall be able to:

- identify relevant ethical questions regarding a circular biobased society, and critically reflect on ethical aspects of such questions at a local, regional, national and global level
- show an understanding of opportunities and limitations of science to develop and design a circular biobased society
- identify her/his own need of additional knowledge to understand a circular biobased society, and take responsibility for her/his knowledge development

Course content

The course consists of three parts:

Module 1: Circular biobased society in theory and practice 6 credits
This module gives a general overview about a circular biobased society in practice and theory.The module is divided into a take-home examination 3 credits, and written assignments 3 credits.

Module 2: Circular activities and sectors 4 credits
This module deepens the understanding about a circular biobased society and how its effects can be examined based on experiences from different activities and sectors e.g. accommodation, energy, industry and agriculture.The module consists of a literature review 4 credits.

Module 3: Project work 5 credits
The module consists of advanced studies through a project work in groups with a specific problem area where acquired knowledge is applied.The module consists of

both theoretical and practical parts.These parts are tightly linked to ongoing research and internship in industry and at societal actors.The module is divided into project work 4 credits, and take-home examination 1 credit

Course design

The teaching consists of lectures, group assignments, field trips and project work. Participation in group assignments, field trips and project work and associated parts is compulsory.

Assessment

Examination takes place in writing through an individual take-home examination, group assignments, and an individual literature review. Group assignments and individual work also include oral examinations.

For students who have not passed the regular examination, an additional examination in close connection to this is offered.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.
Grades awarded on module 1 are Failed, Passed and Passed with distinction for take-home examination I (3 credits), and Failed and Passed for the written assignments (3 credits)
Grades awarded on module 2 are Failed, Passed and Passed with distinction for the literature review (4 credits)
Grades awarded on module 3 are Failed, Passed and Passed with distinction for take-home examination II (1 credit), and Failed and Passed for the project work (4 credits)

To pass the entire course, approved take-home examinations, approved written assignments, approved literature review and approved project work are required.

The final grade is determined by the combined assessment of the take-home examinations, literature review, written assignments and project work.

Entry requirements

To be admitted to the course, 90 credits in scientific studies are required, including knowledge equivalent to MVES01 Environmental Science: Environmental Management, Sustainability and Business Value Creation 15 credits, and MVES02 Environmental Science: Governance for a Sustainable Economy 15 credits.

Further information

The course may not be included in a degree together with MVES03 Environmental Science: A Circular and Biobased Society 15 credits, or MVEN27 Environmental Science: Planning with Climate in Focus 15 credits.

Subcourses in MVES13, Environmental Science: A Circular and Biobased Society

Applies from V21

2101 Home exam I, 3,0 hp
Grading scale: Fail, Pass, Pass with distinction
2102 Assignment, 3,0 hp
Grading scale: Fail, Pass
2103 Litterature survey, 4,0 hp
Grading scale: Fail, Pass, Pass with distinction
2104 Home exam II, 1,0 hp
Grading scale: Fail, Pass, Pass with distinction
2105 Project, 4,0 hp
Grading scale: Fail, Pass