



## HÖGSKOLAN I GÄVLE

### Sustainability Science and Systems Theory 7.5 cr

*Miljövetenskap och systemteori 7,5 hp*

Set by Faculty of Engineering and Sustainable Development

**Version**

**Set at**

**Valid from**

4/22/20

**HT2021**

<b>Level</b>	A1N
<b>Education level</b>	Second cycle
<b>Course identifier</b>	MIA006
<b>Credits</b>	7.5 cr
<b>Main field of study</b>	Sustainability Science
<b>Subject group</b>	Environmental Science
<b>Disciplinary domain</b>	Social sciences 40.0 % Technology 40.0 % Natural sciences 20.0 %

**Learning outcomes**

After completion of the course the student shall be able to

1. describe the history of the global ecological crisis and the global and local political agenda of sustainable development
2. discuss the multi-, inter-, and transdisciplinary challenges within sustainability science
3. describe technological and social challenges and potential pathways in the transition to a climate neutral and sustainable society
4. articulate reasons for and solutions to upholding natural resources, social goals and biodiversity within planetary boundaries for a safe operating space for humanity on Earth
5. describe and discuss systems theory, technological systems and change in complex adaptive systems, and the relevance for sustainable development.

**Course content**

The course contains views and perspectives on the ecological crisis and its social pressures, the history of policies for sustainable development and the history of sustainability science with its paradigms, frameworks, and research programs. The course also covers sustainability problems, technological and social solutions with regard to various levels of analysis. It covers ontological perspectives on and central concepts and theories in sustainability science, systems analysis and decision processes, related to sustainable development and resilience

	thinking.
<b>Teaching</b>	Lectures and seminars
<b>Prerequisites</b>	At least 180 credits first-cycle degree comprising at least 60 credits in sustainability science, environmental engineering, technology, psychology, industrial design, business administration, natural resource management, leadership, organization and governance, or other relevant main area.  In addition, knowledge of English is required corresponding to what is required basic eligibility for Swedish university education at undergraduate level.
<b>Examination</b>	Written examination, written individual assignment and seminars  Module 0010 Written home examination 3 cr, examines learning outcomes 2-5, grades A-F Module 0020 Assignment 3 cr, examines learning outcome 1, grades Pass, Fail Module 0030 Seminars 1.5 cr, examines learning outcomes 2, 4-5, grades Pass, Fail
<b>Grade</b>	A, B, C, D, E, Fx, F
<b>Other regulations</b>	Degree Criteria for the final grade will be handed out by the course responsible och examiner latest at the beginning of the course.
<b>Sustainable environment</b>	The majority of the course content deals with sustainable development..
<b>Module</b>	
	0010 Written home examination 3 cr Grade: AF
	0020 Written assignment 3 cr Grade: UG
	0030 Seminars 1.5 cr Grade: UG