Blekinge Institute of Technology
Department of Strategic Sustainable Development

Revision: 1
Reg.no: BTH-4.1.14-0155-2023

COURSE SYLLABUS

Strategisk hållbar utveckling av energi- och transportsystem

Strategic sustainable development of energy and transport systems

12.5 credits (12,5 högskolepoäng)

Course code: SL2562
Main field of study: Strategic Leadership towards Sustainability
Disciplinary domain: Technology
Education level: Second cycle
Specialization: A1N - Second cycle, has only first cycle course/s as entry requirements

Language of instruction: English
Applies from: 2023-08-28
Approved: 2023-03-01

1. Decision

This course is established by Dean 2023-01-13. The course syllabus is approved by Head of Department of Strategic Sustainable Development 2023-03-01 and applies from 2023-08-28.

2. Entry requirements

Admission to the course requires 120 credits and a taken course including at least 2.5 credits about the Framework for Strategic Sustainable Development (FSSD). English 6.

3. Objective and content

3.1 Objective

The course aims to develop the student's knowledge and understanding of current energy and transport systems, their sustainability consequences, and how they can be transformed strategically to sustainability.

3.2 Content

A variety of topics that affects strategic sustainable development of energy and transport systems will be covered. This includes sustainability effects of different energy and transport systems, including entire life cycles, as well as planning, management, and integration of systems and sectors to support strategic sustainable development of society at large.

4. Learning outcomes

The following learning outcomes are examined in the course:

4.1 Knowledge and understanding

On completion of the course, the student will be able to:
• demonstrate an understanding of the interrelationship between the energy systems, (including transport, built environment, industry, and lifestyle choices, etc.) and global sustainability challenges.
• describe in a general way the earth's energy balance, current energy use in society, energy generation systems and energy storages, and how these can inform the strategic sustainable development of energy and transport systems.

4.2 Competence and skills

On completion of the course, the student will be able to:
• analyze sustainability effects of different solutions, objectives, plans, policies, and practices for energy and transport systems by applying a strategic sustainable development approach.
• create and communicate overall plans for strategic sustainable development of energy and transport systems by using a participatory procedure where students (A) create a vision for sustainable energy- and transport system, (B) analyze current reality in relation to the vision, (C) identify and create solutions that could potentially help to reach the vision, and (D) prioritize among the solutions from (C) and create a plan to reach the vision.

4.3 Judgement and approach

On completion of the course, the student will be able to:
• synthesize in general terms about advantages and disadvantages of different solutions for strategic sustainable development of energy and transport systems.

• synthesize how different societal actors (e.g., governments, businesses/industries, and citizens) can accelerate sustainability transitions within energy and transport systems.

5. Learning activities

The teaching takes place through both live and recorded lectures, interactive sessions, and supervision. Projects supervised by teachers give students an opportunity to apply theoretical knowledge in practice, as well as practicing on presentation, opposition, debating, and report writing.

6. Assessment and grading

Modes of examinations of the course

Code	Module	Credits	Grade
2310	Presentation	2 credits	GU
2320	Public Discussion and Examination	1 credits	GU
2330	Report	1.5 credits	GU
2340	Written assignments	4 credits	GU
2350	Oral examination	4 credits	GU

The course will be graded G Pass, UX Fail, supplementation required, U Fail.

The information before a course occasion states the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

An examiner can, after consulting the Disability Advisor at BTH, decide on a customized examination form for a student with a long-term disability to be provided with an examination equivalent to one given to a student who is not disabled.

7. Course evaluation

The course evaluation should be carried out in line with BTH:s course evaluation template and process.

8. Restrictions regarding degree

The course can form part of a degree but not together with another course the content of which completely or partly corresponds with the contents of this course.

9. Course literature and other materials of instruction

Ngo, C., Natowitz, J., 2016. Our Energy Future: Resources, Alternatives and the Environment EBOOK ISBN 9781119213376.
Schiller, P.L., Kenworthy, J.R., 2017. An Introduction to Sustainable Transportation: Policy, Planning and Implementation, 2nd ed. EBOOK ISBN 9781317289159.
Supplementary materials are provided.