



## COURSE SYLLABUS

### Hållbara energisystem Sustainable Energy Systems 7.5 credits (7,5 högskolepoäng)

**Course code:** SL2546

**Main field of study:** Strategic Leadership towards Sustainability

**Disciplinary domain:** Technology

**Education level:** Second cycle

**Specialization:** AIN - Second cycle, has only first cycle course/s as entry requirements

**Subject area:** Industrial Engineering and Management

**Language of instruction:** English

**Applies from:** 2020-08-31

**Approved:** 2020-03-01

#### 1. Decision

This course is established by Dean 2019-11-28. The course syllabus is approved by Head of Department of Strategic Sustainable Development 2020-03-01 and applies from 2020-08-31.

#### 2. Entry requirements

Admission to the course requires taken a university education of at least 120 credits. Taken a basic course in Strategic Sustainable Development of at least 6 credits. English 6.

#### 3. Objective and content

##### 3.1 Objective

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

##### 3.2 Content

The course starts with an overview on how energy systems relate to strategic sustainable development. This is followed by more in-depth studies on energy supply and energy use in various sectors of society. The course ends with planning for economically, ecologically and socially sustainable development of energy systems.

#### 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:

- Describe in an overall way global sustainability challenges, policies and objectives that affect the development potential of the energy sector.
- Describe in an overall way the earth's energy balance and the current energy use in society.
- Explain in an overall way systems for extraction and storage of energy.
- Explain in an overall way the role of energy efficiency in the transition to sustainable energy systems.
- Account for some climate compensation measures, such as carbon capture.

##### 4.2 Competence and skills

On completion of the course, the student will be able to:

- Conduct an overall analysis of energy- and material flows from an economic, ecological and social sustainability perspective.
- Plan in an overall way for economically, ecologically and socially sustainable development of energy systems.

##### 4.3 Judgement and approach

On completion of the course, the student will be able to:

- Argue in general terms regarding advantages and disadvantages of different energy systems.
- Discuss how different societal sectors can contribute to strategic sustainable development of energy systems.

## 5. Learning activities

The teaching takes place on distance through lectures and supervision. Projects supervised by teachers give students opportunity to apply theoretical knowledge in practice, as well as practicing on presentation and report writing.

## 6. Assessment and grading

Modes of examinations of the course

Code	Module	Credits	Grade
2010	Oral examination	1 credits	GU
2020	Take-home examination	3.5 credits	AF
2030	Written assignment	1 credits	GU
2040	Oral presentation	1 credits	AF
2050	Written report	1 credits	AF

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail.

The final grade for the entire course is set with the grades A Excellent, B Very Good, C Good, D Satisfactory, and E Sufficient. The final grade is generated by weighting the separate grades from examination modules graded with A-F. Completion of grades FX/UX is offered within 6 weeks from the date of examination.

The course-PM for each course revision should include 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

Peak, Stephen (ed.), 2018. Renewable Energy – Power for a Sustainable Future. 4th ed. Oxford University Press. ISBN 978-0-19-253777-5.

Supplementary materials are provided.