



## Sustainable Development Hållbar utveckling

7.5 credits

**Ladok Code:** A354TG

**Version:** 2.0

**Established by:** Committee for Education in Technology 2026-03-12

**Valid from:** Autumn 2026

**Education Cycle:** First cycle

**Main Field of Study (Progressive Specialisation):** The course does not have a main area (GXX)

**Disciplinary Domain:** Technology 90%, Social sciences 10%

**Prerequisites:** Meets the requirements for admission to undergraduate level programs

**Subject Area:** Environmental Science

**Grading Scale:** Fail (U) or Pass (G)

### Content

The course deals with sustainable development from an engineering perspective and focuses on how technical solutions can contribute to long-term sustainable social development. The students gain an introduction to key concepts and perspectives, including ecosystem resilience, global, regional and local challenges, and how the engineering profession influences and is influenced by ecological, economic and social sustainability aspects.

The course highlights the challenges and opportunities that exist within different engineering fields to develop more sustainable systems and processes. It also shows how resources and ecosystems can be managed effectively, using technological development and engineering knowledge.

Sustainable development is based on the integration of environmental, economic and social dimensions, and the course introduces tools and perspectives that are used to analyze and understand sustainability problems. Through subject-relevant examples and case studies, students are given insights into how sustainability challenges can be handled in their future professional roles.

The course also addresses how legislation, technological innovations, economic policy tools and societal transformations interact in the pursuit of more sustainable development, with particular emphasis on engineering applications. Through a combination of theoretical elements and practical applications, students develop an engineering understanding of sustainability, for both advanced academic study and their future professional careers.

### Learning Outcomes

Upon completion of the course, the student should be able to:

#### Knowledge and Understanding

- 1.1 describe sustainable development and its ecological, social, and economic dimensions,
- 1.2 describe the effects of global, regional, and local environmental threats related to the growing human population,
- 1.3 describe how the engineering profession influences and is influenced by sustainability challenges,
- 1.4 explain how technological solutions, policy tools, and local, national, and international frameworks can contribute to sustainable societal development,
- 1.5 provide an overview of methods used to evaluate technical systems from a sustainability perspective.

#### Skills and abilities

- 2.1 identify sustainability challenges within technical systems relevant to their own field of engineering,
- 2.2 communicate and discuss sustainability issues in an engineering and scientific manner, both in writing and orally,
- 2.3 describe and compare methods and strategies for developing sustainable engineering solutions within their field.

#### Evaluation ability and approach

- 3.1 reflect on the role of technology in society and its impact on the environment, economy, and social justice,

- 3.2 reflect on the long-term sustainability and ethical implications of different engineering solutions,  
3.3 reflect on potential trade-offs between environmental, economic, and social dimensions.

### **Forms of Teaching**

The course includes

- Lectures,
- Seminars,
- Supervision

The language of instruction is English.

### **Forms of Examination**

The course will be examined through the following examination elements:

#### *Exam*

Learning outcomes:

Credits: 2

Grading scale: Fail (U) or Pass (G)

#### *Seminar I*

Learning outcomes:

Credits: 1

Grading scale: Fail (U) or Pass (G)

#### *Seminar II*

Learning outcomes:

Credits: 2

Grading scale: Fail (U) or Pass (G)

#### *Written report*

Learning outcomes:

Credits: 2

Grading scale: Fail (U) or Pass (G)

#### *Oral presentation*

Learning outcomes:

Credits: 0.5

Grading scale: Fail (U) or Pass (G)

If the student has received a decision/recommendation regarding special pedagogical support from the University of Borås due to disability or special needs, the examiner has the right to make accommodations when it comes to examination. The examiner must, based on the objectives of the course syllabus, determine whether the examination can be adapted in accordance with the decision/recommendation.

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

### **Literature and Other Teaching Materials**

-Sustainable Development for Engineers: A Handbook and Resource Guide  
Karel Mulder, latest version

-Sustainable development in practice: case studies for engineers and scientists  
Azapagic, Adisa; Perdan, Slobodan, latest version

-Distributed material via HB's learning platform.

### **Student Influence and Evaluation**

The course is evaluated in accordance with current guidelines for course evaluations at the University of Borås in which students' views are to be gathered. The course evaluation report is published and returned to participating and prospective students in accordance with the above-mentioned guidelines, and will be taken into consideration in the future development of courses and education programmes. Course coordinators are responsible for ensuring that the evaluations are conducted as described above.

**Miscellaneous**

This syllabus is a translation from the Swedish original.

The course is part of the following programmes: Energy Engineering (180 credits), Chemical Engineering in Applied Biotechnology (180 credits), and Civil Engineering (180 credits).

The course can also be taken as an elective by programme students as well as by incoming exchange students.