Linnæus University

Dnr: LNU-2023/2634

# Course syllabus

Faculty of Technology

Department of Built Environment and Energy Technology

1ZT902 Hållbar utveckling, 5 högskolepoäng
1ZT902 Sustainable Development, 5 credits

**Main field of study**
Bioenergy Technology, Environmental Engineering

**Subject Group**
Energy Technology

**Level of classification**
First Level

**Progression**
G1N

**Date of Ratification**
Approved 2021-05-24
Revised 2023-08-28 by Faculty of Technology. Literature list is revised.
The course syllabus is valid from spring semester 2024

**Prerequisites**
General entry requirements + Mathematics 4/Mathematics D.

## Objectives

After completing the course, the student should be able to:

- A.1 explain the meaning of the concept of sustainable development from both ecological, social and economic aspects, as well as from a global, local and individual perspective
- A.2 account for some links between drivers of resource use and the planet's ability to support human needs
- A.3 discuss and reason about ethical aspects, risk management and responsibility issues, as well as about various sustainability issues with different groups
- A.4 conduct critical reasoning and reflect on the engineer's role in a sustainable society, current legislation and their own responsibility within their own professional role for sustainable development, taking into account ecological, social and economic aspects.
- A.5 to comprehensively propose and justify strategies and measures, nationally and internationally, for various opportunities to analyze and reduce sustainable development problems based on a systems analytical perspective

## Content

The following points are covered:

- The meaning of sustainable development: ecological, social and economic prerequisites, aspects, definitions, concepts, quantification methods and practical application.
- The role of technology and engineering, historical perspectives and strategies to support sustainable development.
- Global perspectives on Sustainable Development.
- Based on selected problems, discuss various aspects and solutions for sustainable development.
- Ethics and the influence of one's own lifestyle and international perspectives.
- Consumption patterns, product footprints (LCA), resource utilization, transport and waste.
- Environmental pollution, lifestyle and cultural perspectives on global health
- Agenda 2030
- Economic and legal instruments and tools (environmental code, emission rights, environmental impact statement, ISO 14,000, EMAS, etc.).

## Type of Instruction

Teaching is conducted in the form of lectures, project work and seminars. Completion of some seminars is mandatory.

## Examination

The examination of the course is divided as follows:

| Code | Designation | Grade | Credits |
|---|---|---|---|
| 2201 | Project work, reflection, opposition | U/G | 1,00 |
| 2202 | Written exam | AF | 4,00 |

The course is assessed with the grades A, B, C, D, E, Fx or F.

In order to pass the student must receive grade G on Project work, reflection, opposition and at least grade E on the written exam. The final grade is determined from the written exam.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

**Objectives achievement**

The examination elements are linked to the course objectives in the following ways:

| **Goal** | 2201 | 2202 |
|---|---|---|
| A.1 | | ☑ |

| | | |
|---|---|---|
| A.2 | ☑ | ☑ |
| A.3 | ☑ | ☑ |
| A.4 | ☑ | ☑ |
| A.5 | | ☑ |

## Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

## Credit Overlap

The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course: 1ZT006 Environmental Technology  Sustainable Development, 5 credits and 1ZT001 Environmental Technology  Sustainable Development, 5 credits

## Other

To follow the course, the student needs to have access to a computer and a digital connection, especially those who choose to follow the course on-line. Examples from different engineering fields are used to highlight different aspects of the engineer's role.

## Required Reading and Additional Study Material

Ammenberg Jonas, Hjelm Olof. Miljöteknik För en hållbar utveckling. Second edition. 2023, Studentlitteratur. ISBN: 9789144159355. 256 pages

Current articles from scientific journals, reports, industry magazines and books available via the Internet, reference is given on the course website. (200 p)

**Referenslitteratur**

Jahja Rosman, Yelistratova Anna. Vägvalen för hållbar utveckling. 2021, Studentlitteratur. ISBN: 9789144144870. 194 pages