



Faculty of Health, Science and Technology
Environmental and Energy Systems

Syllabus

Soil and water, Environmental technology III

Course Code:	EMGB23
Course Title:	Soil and water, Environmental technology III <i>Mark och vatten, Miljöteknik III</i>
Credits:	5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

Major Field of Study:
MEI (Environmental and Energy Systems)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2023-09-11, and is valid from the Spring semester 2024 at Karlstad University.

Prerequisites

Registered for Sustainable Development for Engineering, 7.5 ECTS credits, and Environmental Technology I, Air and Flue Gas Treatment, 7.5 ECTS credits, or equivalent

Learning Outcomes

General aims:

Upon completion of the course, students should understand the principles for water purification and soil remediation; be able to read, comprehend, and summarise scientific literature in the field; and give an account of and understand various transport processes and separation methods.

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

- Explain the health effects and environmental impact of a few toxic substances,
- Discuss probable dispersal routes in nature when pollutants are emitted,

- Give an account of the procedure of soil analysis and site assessment,
- Suggest and give arguments for various different soil remediation methods,
- Give an account of the formation of surface water and groundwater, and the impact of geology on that process and on water quality, and
- Give an an account of purification methods for drinking water.

Content

The course covers sources of pollution, the dispersal of pollutants in soil and water, purification techniques for drinking water, and soil remediation.

Instruction is in the form of lectures, laboratory sessions, and project assignments.

Reading List

See separate document.

Examination

Assessment is based on a written exam and oral and written reports on laboratory work and project assignments.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades

One of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), or U (Fail) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.