



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Dricksvattenproduktion och avloppsvattenrening

Water and Wastewater Treatment

VVAN25, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED B/K

Date of Decision: 2023-04-18

General Information

Main field: Water Resources Engineering.

Compulsory for: MWLU1

Elective for: K4-p, V4-vr, W4-p, W4-vr

Language of instruction: The course will be given in English

Aim

Drinking water production plants and wastewater treatment plants are essential parts of the urban water infrastructure and have a large influence on the hydrological cycle. To protect the environment and the environmental services the ecosystems provide, water needs to be handled in an environmentally sustainable way. In the global perspective SDG 6 "Water and sanitation" targets the need to ensure availability and sustainable management of water and sanitation for all.

The aim of the course is to provide knowledge about water and wastewater treatment to be able to design and operate municipal facilities for production of drinking water and treatment of wastewater in the urban area.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

account for different parameters and how they influence municipal drinking water production and wastewater treatment

Competences and skills

For a passing grade the student must

based on given pre-requisites be able to choose and design processes for municipal drinking water production and wastewater treatment (including sludge treatment)

show the ability to perform team work in group by a limited, in-depth project work on water treatment

show the ability to adjust written and oral presentation of the results from a project work to an assigned target group

Judgement and approach

For a passing grade the student must

by collecting and compiling information relevant for design calculations and operation of municipal drinking water production plants and municipal wastewater treatment plants demonstrate an ability to analyse and evaluate different kinds of information

Contents

Survey of water resources, water consumption and water quality

Treatment processes for potable water

Wastewater systems

Physical, chemical and biological treatment processes

Sludge treatment

Small-scale wastewater management

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Written examination. Project assignment including oral and written presentation and participation in laboratory assignment. The grade is based on the written examination.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0120. **Name:** Water and Wastewater Treatment.

Credits: 5,5. **Grading scale:** TH. **Assessment:** Written examination **Contents:** Examination of drinking water production, wastewater treatment and sludge management

Code: 0220. **Name:** Mandatory Activities.

Credits: 2. **Grading scale:** UG. **Assessment:** Project assignment with oral and written presentation and participation in laboratory assignment **Contents:** Project assignment and laboratory assignment

Admission

Admission requirements:

- KETF01 Transport Phenomena, Basic Course or VVAF01 Water and Wastewater Technology or VVRF10 Fluid Mechanics
- KETF01 Transport Phenomena, Basic Course or VVRA01 Hydrology and Aquatic

Ecology or VVRA05 Water

The number of participants is limited to: No

The course overlaps following course/s: VVAN05, VVA030

Reading list

- Mackenzie L. Davies: Water and Wastewater Engineering, Design Principles and Practice. McGraw Hill, 2019, ISBN: 9781260132274. Other material is added through the course web.

Contact and other information

Course coordinator: Åsa Davidsson, asa.davidsson@chemeng.lth.se

Course homepage: <https://www.ple.lth.se/en/>