



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Urban dagvattenhantering

Urban Storm Water Management

VVAN30, 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: V4-vr, W4-vr

Language of instruction: The course will be given in English

Aim

The urban water system is based on a well-functioning urban storm water management. Population growth, altered land use, climate change and knowledge on how pollutants propagate by storm water and the ambition to integrate water in the residential environment require new ways of designing sustainable urban storm water systems, regarding both flows and pollutants. So-called blue-green storm water structures interact with both the existing piped system and the overall urban infrastructure and hence both spatial distribution and design are important.

The aim of the course is to provide knowledge about storm water management in urban environments to be able to design and operate facilities for delaying and decreasing storm water flows and treating polluted storm water in urban areas.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- account for different parameters that influence urban storm water management and explain their influence

Competences and skills

For a passing grade the student must

- be able to choose, design and plan facilities for urban storm water management based on given prerequisites
- be able to use computer models for calculation of storm water flows
- demonstrate the ability to perform team work in group by a limited, in-depth project work on water treatment
- demonstrate the ability to adjust written and oral presentation of the results from a project work to an assigned targeted group

Judgement and approach

For a passing grade the student must

- by independently collecting and compiling information relevant for design, operation and planning of urban storm water facilities demonstrate an ability to analyse and evaluate different kinds of information

Contents

The course deals with the following areas of knowledge:

Survey of the urban water system

Design of storm water systems regarding hydraulics and treatment

Storm water systems (blue-green solutions relative to piped systems)

Processes for storm water management in so-called blue-green systems

Computer models on storm-water flow

Storm water in the city planning process

Examination details

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

Assessment: Written examination. Computer exercises. Project assignments with oral and written presentation. The grade is based on the final 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:** Mandatory Activities.

Credits: 2. **Grading scale:** UG. **Assessment:** Oral and written presentations. **Contents:** Computer modelling exercises, Project assignments.

Code: 0220. **Name:** Urban Storm Water Management (Examination).

Credits: 5,5. **Grading scale:** TH. **Assessment:** Written examination **Contents:** The final exam that examines urban storm water management.

Admission

Admission requirements:

- VVAF01 Water and Wastewater Technology or VVRF10 Fluid Mechanics

- VVRA01 Hydrology and Aquatic Ecology or VVRA05 Water

The number of participants is limited to: No

The course overlaps following course/s: VVA030, VVAN05

Reading list

- Lecture notes and other material.
- David Butler, Christopher Digman, Christos Makropoulos, John W. Davies: Urban Drainage. CRC Press, Taylor and Francis Group, 2018, ISBN: 978-1-4987-5058-5.

Contact and other information

Course coordinator: Salar Haghigatafshar , salar.haghigatafshar@chemeng.lth.se

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