



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Vatten, samhälle och klimatförändringar **Water, Society and Climate Change**

VVRN20, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED W

Date of Decision: 2023-03-27

General Information

Main field: Water Resources Engineering.

Elective for: MWLU1, V4-vr, W4-vr

Language of instruction: The course will be given in English

Aim

The objective of the course is to provide methodologies and tools for adaptation of water resources systems with respect to climate change and climate variability. The course will also provide fundamental understanding of the physical processes behind climate change and its effects on the hydrological cycle.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- Understand the global atmospheric circulation, climate variability and change
- Understand how climate change affects water resources and the society
- Be able to formulate different adaptation and mitigation measures

Competences and skills

For a passing grade the student must

- Be able to formulate the physical principles behind climate change and variability
- Explain and quantify the impacts of climate change on water resources and evaluate means by which these impacts can be reduced (adaptation)
- Be able to apply - at a professional level - her/his academic knowledge in a climate change adaptation plan of an area

Judgement and approach

For a passing grade the student must

- In quantitative terms be able to communicate the results of analyses performed to a qualified group of stakeholders.
- Be able to critically review studies and reports dealing with climate change effects on water resources

Contents

Climate of the world, global circulation patterns, climate variability, basic meteorology, rain generating processes. Downscaling in time and space. Changes in rainfall patterns, extreme events. Flooding, disaster risk reduction, sea level change and its consequences on near shore constructions, urban hydrology, impacts and mitigation. Maintaining quality drinking water in a changing climate. Problems in arid areas and developing countries

Examination details

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

Assessment: Examination is based on one project assignment and a written final examination. Marking of the assignment is based on the content of a written report and an oral presentation. The course grade is a weighted average of the two marked components.

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.

Admission

Admission requirements:

- VVR111/VVRA01 or VVR145/VVRA05 or corresponding course in Hydrology

The number of participants is limited to: No

The course overlaps following course/s: FMIN05

Reading list

- John Houghton: Global Warming, The Complete Briefing. Cambridge University Press, 2009, ISBN: 978-0-521-70916-3.

Contact and other information

Course coordinator: Hossein Hashemi, hossein.hashemi@tvrl.lth.se

Course coordinator: Amir Naghibi, amir.naghibi@tvrl.lth.se

Course homepage: <http://www.tvrl.lth.se/utbildning/courses/>