

Hydrology and Hydraulics

Programme course

4 credits

Hydrologi och hydraulik

TNBI28

Valid from: 2017 Spring semester

Determined by

Board of Studies for Mechanical Engineering
and Design

Date determined

2017-01-25

Main field of study

Civil Engineering

Course level

First cycle

Advancement level

G2X

Course offered for

- Civil Engineering, B Sc in Engineering

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

Structural Mechanics and Strength of Materials

Intended learning outcomes

After completing the course the student should be able to calculate and analyse thrusts against gates, floating stability of bodies, flow in pipes and pumps and water regulations. This means that the student can:

- Calculate hydrostatic hydraulic thrusts on surfaces.
- Calculate and analyse the stability of floating bodies.
- Define and apply the fluid flow concept.
- Describe and apply the energy equation for dimensioning of water pipes.
- Describe and apply the hydrologic circle for analyse of water regulations.
- Calculate and evaluate the behaviour of gates.
- Analyse the influence of water inside a floating body.

- Analyse a pipeline system with pumps.

Course content

Hydraulic thrusts on surfaces. Stability of floating bodies. Fluid flow concept. Energy equation including pumps for dimensioning of water pipes. Hydraulic circle for analyse of water regulations.

Teaching and working methods

Teaching is done in lectures and laboratory work.

Examination

LAB1	Laboratory works	U, G	1.5 credits
TEN1	Written examination	U, 3, 4, 5	2.5 credits

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Water supply and wastewater technology.

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Adriana Serban

Examiner

Igor Zozoulenko

Course website and other links

Education components

Preliminary scheduled hours: 40 h

Recommended self-study hours: 67 h

Course literature

Additional literature

Books

Steffen Häggström, (2009) *Hydraulik för samhällsbyggnad*

Compendiums

Kompendium och föreläsninganteckningar i hydrologi Steffen Häggström,
Exempelsamling i VA-teknik och hydraulik

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.