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

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*

Compendia

Kompendium och föreläsningsanteckningar 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.