LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Introduktion till avancerat ingenjörsarbete
Introduction to Advanced Engineering

VTVA65, 4 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED V
Date of Decision: 2023-03-21

General Information

Main field: Technology.
Compulsory for: V1
Language of instruction: The course will be given in Swedish

Aim

The purpose of the course is to introduce and prepare the student for methods and teaching forms central for the civil engineering programme. Furthermore, the course aim to give inspiration and knowledge of the width of the programme subjects and the work tasks for civil engineers.

The course also introduce concepts and tools used for simulation, uncertainties, and risk assessment together with data management applied on civil engineering. This is done by applying programming scripts on data material.

The course aim to help develop skills in teamwork, time planning, critical thinking, information search and collection, ethical considerations, report writing and oral presentation. Furthermore, the course also aims to create an awareness regarding study strategies usable for life long learning, both during education and the work life.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- Demonstrate a fundamental general understanding regarding skills and tools for simulation and modelling used by a civil engineer.
- Demonstrate a fundamental understanding for data management and analysis with the

use of different computational tools.
- Demonstrate an understanding for the width of work assignments a civil engineer may face.
- Understand the importance and the consequences of fundamental ethical dilemmas a civil engineer may face.
- Demonstrate a fundamental understanding for the importance of study strategies and teamwork.
- Demonstrate an understanding of the importance of correct reference management.

Competences and skills
For a passing grade the student must

- Demonstrate a fundamental ability to manage data and perform data analysis, including calculations, and presentation of results, including graphical presentation using computational software.
- Be able to use software for text editing to create templates, formatting of text, and managing references.
- Be able to perform literature searches in, amongst others, library databases.
- Demonstrate the competence and skill to create a written report and oral presentation with the help of different analogue and/or digital tools.
- Demonstrate the skill to give and receive constructive feedback.

Judgement and approach
For a passing grade the student must

- Demonstrate a fundamental ability to judge how the choice of method and data management can impact on the result.
- Demonstrate a fundamental knowledge regarding common ethical dilemmas an engineer may face.
- Be able to critically review and adhere to information and the information sources.
- Be able to objectively and constructively review written and orally presented information.

Contents

Central to the course is a project assignment performed in groups relating to current issues within the different subjects of the civil engineering programme. The assignment train the student in the skills required, for instance in modelling and simulation, analysis of uncertainties and risk, and other aspects of data management. This can include data file management, using calculation software to create graphical representation of results.

The course has several different types of elements. These elements includes lectures and seminars on information gathering, critical thinking, ethical considerations, teamwork, study strategies, report writing, and oral presentation. These different areas are used in the project assignment.

An overview of the width of the subjects included in the civil engineering programme and work tasks after finished education is introduced by lectures by different teachers and external guest lecturers.

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)
Assessment: The course is examined with a project report with written peer-review, oral presentation including discussion and peer-review/opposition, compulsory moments such as lectures, seminars, and different types of theoretical tests.

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: 0123. **Name:** Introduction to Advanced Engineering.
Credits: 4. **Grading scale:** UG.
Code: 0223. **Name:** Project - Written Report.
Credits: 0. **Grading scale:** UG.
Code: 0323. **Name:** Project - Oral Presentation.
Credits: 0. **Grading scale:** UG.
Code: 0423. **Name:** Project - Opposition.
Credits: 0. **Grading scale:** UG.
Code: 0523. **Name:** Test - Ethics.
Credits: 0. **Grading scale:** UG.

Admission

The number of participants is limited to: No
The course overlaps following course/s: VTVA10

Reading list

- Instructions for exercises and assignments are available on the course webpage.
- Programledning V: Anvisningar för rapporter på V-programmet. 2015. Avaiable on the programme's website.

Contact and other information

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