

SYLLABUS

Data Visualization 7.5 credits D7055E

Visualisering av data

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2023-02-15**

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Visualisering av data

Second cycle, D7055E

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	U G VG	Systemvetenskap	Informatics/Computer and Systems Sciences

Main field of study

Information Systems Sciences

Entry requirements

In order to meet the general entry requirements for the course, you must have accomplished a minimum of 180 ECTS of university studies, out of which 60 ECTS in the areas of computer or system science. The studies shall have included Introductory Programming (for example D0009E Introduction to Programming or D0007N Objectoriented programming) and Fundamentals of Databases (for example D0004N Database Systems I or D0018E Database technology).

Knowledge in English equivalent to English 6.

More information about the English language requirements [<http://www.ltu.se/edu/bli-student/Application-process/English-language-requirements-1.109316?l=en>]

Selection

The selection is based on 30-285 credits

Course Aim

The aim of the course for the student is to develop their knowledge and skills in data visualization. After completing the course, the student should be able to:

1. Explain and use data visualization concepts
2. Describe the data visualization techniques
3. Explain how data visualization techniques are used to represent data in organizations
4. Evaluate the use of certain data visualization
5. Analyze and reflect on the results obtained via specific data visualization

Contents

The Data Visualization course is aimed at providing knowledge to the students with regards to how to represent data, visually. The course will enable students to connect to various datasets and sources while preparing for the visualization. Various topics and techniques will be explained in the course such as: use of colors, data-ink ratio, storytelling with graphs, and the taxonomy of data visualization methods. In a nutshell, the course aims to discuss the know-how to represent the data visually so as the visualization is appropriate, interactive, annotated, and using the right colors and graphical techniques.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures, lab hands-on, assignments, case studies and/or project work. During the course, the students work with individual tasks and/or group assignments for analysing, selecting and implementing different data visualization techniques. Some assignments or case studies in the course might contain work in contact with or about the industry. The student uses different methods and techniques, and it is important to choose the right method, technique or computer support for each task. Before and after the tasks are solved, there are lectures to present and discuss different solutions.

Teaching is in English and on the Internet for distance students or on campus for students living here. IT support: Learning management system, e-mail and phone. The learning management system is used for delivering course material, information and submissions. Knowledge is shared and created within the course through virtual meetings with teachers and other students for discussions, supervision, teamwork and seminars. For students on campus, there will be meetings on campus.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. The course is examined as follows:

- Written individual tasks and group tasks relating to the course aims 3-5, 6hp (U, G, VG)
- Individual written exam relating to 1-2 of the course aims, 1.5hp (U, G, VG)

For a student to get VG in the whole course, a VG grade must be accomplished in the individual tasks and group tasks and in the individual written exam.

For the G grade, a student should achieve the grade G in the individual tasks and group tasks, as well as in the individual written exam.

Grades are given according to the scale: U, G, VG.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Remarks

Technical Requirements: access to computer with administrative rights, web camera, microphone and Internet connection.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0005	Individual tasks and group tasks	U G VG	6	Mandatory	A21	
0006	Written exam	U G VG	1.5	Mandatory	A21	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Robert Brännström 2023-02-15

Syllabus established

by Jonny Johansson, HUL SRT 2020-02-21