

Digital Strategies for Social Science Research

Digitala strategier för samhällsvetenskaplig forskning
7.5 credits

Single subject course

771A26

Valid from: 2019 Spring semester

Determined by	Main field of study	
The Quality Board at the Faculty of Arts and Sciences	Computational Social Science	
Date determined	Course level	Progressive specialisation
2017-10-20	Second cycle	A1F
Revised by	Disciplinary domain	
	Technology	
Revision date	Subject group	
	Other Subjects within Social Science	
Offered first time	Offered for the last time	
Spring semester 2019		
Department	Replaced by	
Institutionen för ekonomisk och industriell utveckling		

Entry requirements

- 180 ECTS credits passed including 90 ECTS credits in one of the following subject areas: social- and natural sciences, engineering, statistics, or mathematics
- 15 ECTS credits in statistics, computer science, mathematics, or equivalent at advanced level
- English corresponding to the level of English in Swedish upper secondary education (Engelska 6)
Exemption from Swedish

Intended learning outcomes

After completion of the course, the student should on an advanced level be able to:

- design a strategy to locate digital data relevant to social science research questions, while understanding potential merits and limits of these data;
- identify and evaluate ethical issues related to the use of digital data sources;
- collect, store and format digital data using appropriate software and programming tools;
- explore and analyze digital data with various statistical and computational techniques, from descriptive statistics to machine learning;
- compare classic statistical and machine learning tools for constructing social scientific measures based on digital data.

Course content

This course introduces the theories and practices of digital social sciences. The course considers the respective relevance of various digital data sources (sensors, surveys, internet-based media platforms, etc.) for social scientific purposes. In hands-on computer labs, the functioning and structure of the World Wide Web and its mark-up languages are examined. Programming tools for extracting information from these structure, especially the manipulation of text and text files, are introduced. Finally, training in the use of common statistical and computational tools to explore and analyze data (descriptive statistics, dimensionality reduction, clustering) is provided, including a comparison between classic statistical methods and machine learning.

Teaching and working methods

The teaching consists of lectures, readings, seminars, and interactive computer labs. Homework and independent studies are a necessary complement to the course.

Language of instruction: English

Examination

The course is examined through written assignments, active participation on seminars, computer labs, and a final written individual assignment. Detailed information about the examination can be found in the course's study guide.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

ECTS, EC

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is carried out in such a way that both men's and women's experience and knowledge is made visible and developed.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.