DIT875   Research Methods for Data Science, 7.5 credits

Forskningsmetoder för Data Science, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Computer Science and Engineering on 2017-12-19 to be valid from 2018-08-19, autumn semester of 2018.

Field of education: Science 100%
Department: Department of Computer Science and Engineering

Position in the educational system

The course is offered within the Applied Data Science Master's Programme.

The course can be part of the following programme: 1) Applied Data Science Master's Programme (N2ADS)

Main field of studies	*Specialization*
Data Science	A1F, Second cycle, has second-cycle course/s as entry requirements

Entry requirements

To be eligible to the course, the student should have a Bachelor's degree, and have successfully completed 15 credits of courses within the subject Data Science.

Applicants must prove knowledge of English: English 6/English B or the equivalent level of an internationally recognized test, for example TOEFL, IELTS.

Learning outcomes

After completion of the course the student should be able to:

Knowledge and understanding

- extract and summarize the current knowledge about a specific topic in data science from original articles
- clearly describe the scientific or technical problems treated within a specific topic in data science
- identify the essential points of an article

Competence and skills
- retreive information that is required to understand a topic not treated in the primary sources
- write well organized and well formulated text with proper scientific argumentation
- explain and communicate a topic to readers that are not necessarily experts in the domain
- plan a research project, such as a master's thesis, based on problem analysis and with a clearly shaped goal, and predict its feasibility

Judgement and approach
- review scientific sources critically
- analyze and evaluate the reasons for the choice of a solution method
- identify possible ethical and societal consequences of a method, design or system
- evaluate possible decisions, based on general ethical values
- apply ethical principles in scientific writing, including proper citation and use of statistical statements

Course content
The following topics are covered in the course:

- technical writing in data science, being practiced on a topic of free choice and on a research proposal
- structuring a scientific text
- communicating a topic to different audiences
- theories on ethics, with examples from data science
- identification and analysis of ethical and societal issues in data science
- ethics and good practice in research and publishing

Form of teaching
Introductory lectures on scientific writing and ethics, several writing exercises and supervision.

Language of instruction: English

Assessment

The course is examined by a written thesis proposal, normally carried out in pairs, and individual written assignments.

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

In cases where a course has been discontinued or has undergone major changes, the student shall normally be guaranteed at least three examination occasions (including the ordinary examination) during a period of at least one year from the last time the course was given.

Grades

The grading scale comprises: Pass (G) and Fail (U).

Course evaluation

The course is evaluated through meetings both during and after the course between teachers and student representatives. Further, an anonymous questionnaire is used to ensure written information. The outcome of the evaluations serves to improve the course by indicating which parts could be added, improved, changed or removed.

Additional information

Course literature to be announced the latest 8 weeks prior to the start of the course.