



INSTITUTIONEN FÖR TILLÄMPAD INFORMATIONSTEKNOLOGI

TIA109 Information Visualization, 7,5 högskolepoäng

Information Visualization, 7.5 higher education credits

Avancerad nivå / Second Cycle

Fastställande

Kursplanen är fastställd av IT-fakultetsnämnden 2010-12-21 och senast reviderad 2017-06-16 av Institutionen för data- och informationsteknik. Den reviderade kursplanen gäller från och med 2017-08-20, höstterminen 2007.

Utbildningsområde: Naturvetenskapligt 100 %

Ansvarig institution: Institutionen för tillämpad informationsteknologi

Inplacering

The course is offered as a single subject course.

Kursen kan ingå i följande program: 1) Datavetenskapligt program (N1COS), 2) Computer Science, Master's Programme (N2COS), 3) Applied Data Science masterprogram (N2ADS) och 4) Game Design & Technology masterprogram (N2GDT)

Huvudområde

Computer Science-Interaction Design

Interaktionsdesign

Fördjupning

A1F, Avancerad nivå, har kurs/er på avancerad nivå som förkunskapskrav

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Förkunskapskrav

To be eligible for the course the student must have a Bachelor degree of 180 credits. Additionally, the course (TIG095) Human Computer Interaction 7.5 credits, or the equivalent is required. In addition, students need to have successfully completed a course in Graphical Interfaces (TIA106) 7.5 credits at an advanced level.

To be eligible for this course as a programme student in Science Bachelors Programme N1COS, the student must have passed at least 90 credits in programme courses and the

additional courses (TIG095) Human Computer Interaction 7.5 credits and Graphical Interfaces (TIA106) 7.5 credits at advanced level.

Lärandemål

The course aims to give an understanding in how information can be presented to provide efficient and effective knowledge transfer, as well as how to design interactive systems that allow users to easily adapt these presentations depending on task and context.

After completion of the course the student should be able to

Knowledge and understanding

- realize the difference between well-known information visualization techniques, including the pros and cons they have in respect to types of data, functionality, adaptability, and scalability,
- describe how the cognitive and perceptive abilities of humans affect the possibilities of information visualization.

Skills and abilities

- create concepts for information visualizations taking into consideration specific data sets, users, technical platforms, and use context,
- iteratively develop visualizations from early non-functional sketches through mock-ups to functional prototype making use of user feedback.

Judgement and approach

- compare different interactive visualization techniques to evaluate their feasibility for both generic and specific use,
- analyze and provide creative criticism on specific solutions to visualize information.

Innehåll

The course provides an overview on how to design and analyze computer applications, based on knowledge of the human sensory and cognitive system. Screen based as well as other types of interactive interfaces, such as auditory and haptic ones, are discussed as means to efficiently and intelligibly present information. Not only actual applications are covered, but also the development of methods to pre-process data and the creation of interfaces so users can personalize the information presentations available so it suits their needs.

Former för undervisning

The course consists of a series of lectures, one exercise and a project.

The course is structured into several different modules, each consisting of reading material taken from academic research within one area of visualization and exercises or projects within these area. The exercises and projects are done in groups with the exception of the final individual assignment. Areas covered include specific techniques with information visualization, e.g. data visualization, scientific visualization and virtual reality.

Undervisningsspråk: engelska

Former för bedömning

The course is examined by means of three modules:

- Group Work: Exercise 1.5 credits (fail/pass)
- Design Project 2.0 credits (fail/pass)
- Written Examination 4.0 credits (fail/pass/pass with distinction)

A student who has failed a test twice has the right to change examiners, if it is possible. A written application should be sent to the Department.

Betyg

På kursen ges något av betygen Väl godkänd (VG), Godkänd (G) och Underkänd (U). The grading scale comprises Fail (U), Pass (G), Pass with Distinction (VG).

To receive a passing grade for the whole course, a student must have a passing mark on the written exam, and both the exercise, and the project. To pass with distinction, a student must have passed with distinction the written exam and have a passing mark on both the exercise, and the project.

Kursvärdering

After completion of the course the students are to be given the possibility of participating in course anonymously. Continuous evaluation will be used, including three meetings between teacher(s) and student representatives. Additionally, the course will be evaluated with a course questionnaire, and discussed with the student representatives.

Övrigt