FJP3310 Advanced Enterprise Modeling: Holistic Systems & Software Modeling 8.0 credits

Avancerad företagsmodellering: holistisk system- & mjukvarumodellering

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for FJP3310 valid from Autumn 2018

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After the course the participants should be able to:

- Compare, choose and motivate the usage of appropriate modeling and analysis methods for evaluation of systems and software issues.
- Model and analyze system and software issues on a holistic level such as cyber security, agility, interoperability, IT-Governance, IT business value, and more general architecture aspects.
- Present and discuss modeling and analysis results in a scientific manner.

Course contents

Previously, business operations of most large enterprises were supported by a number of isolated IT systems performing miscellaneous and specific tasks, from real-time process control to administrative functionality such as payroll and billing. In order to better achieve business goals, these systems have in recent years been extended, and more importantly, integrated into a company-wide system in its own right, the enterprise IT system. Due to its history, this system is composed of a considerable number of heterogeneous components interacting by means of equally diverse connectors. To enable rational evolution and design, where the business's requirements are transformed into technically and economically beneficial IT systems, holistic enterprise architecture models of the system are a necessity.

The purpose of this course is to develop students' understanding of and ability for using enterprise architecture models to describe and design cost-effective IT system portfolios that also provides a good support to the businesses that are using them.

The course consists of, and is examined by, one main project.

The course contains the following knowledge modules:

- The complexity of enterprises and the challenge for enterprise architecture.
- Basic enterprise architecture modeling.
- Enterprise architecture analysis.

Disposition

This is a seminar course within the area of holistic systems and software modeling (enterprise modeling / enterprise architecture). Where each seminar will focus on one architecture modeling and analysis approach, e.g. one seminar on quantitative holistic threat modeling and another seminar on complexity analysis using design structure matrices.

The participants will do a project assignment where they use the results and methods from research within an industrial context. One of the approaches studied in the seminar series should be chosen as the focus of the project.

Course literature

Marc Lankhorst et al., Enterprise Architecture at Work: Modelling, Communication and Analysis, 2ndedition, Springer, 2009.

And various papers on the topic decided together with the students during the course depending on what research fields that should be addressed.

Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

- Active seminar attendance at minimum 75% of the seminars
- Approved project assignment
- Approved oral presentation of project
- Approved written project report

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.