

Course Description Software Engineering

Keywords: modelling, Software Engineering

Target Group:	2nd Semester SWB	Module Number:	SWB 210
Workload:	5 ECTS		150 h
Divided into:	Contact time		60 h
	Self-study		60 h
	Exam preparations		30 h
Course language:	German and English		
Module director:	Prof. Dr.-Ing. Kai Warendorf		
Valid from:	01.03.2014		

Requirements:

Knowledge of an advanced programming language

Overall Aims of the Module:

Students will acquire a thorough background in computer science and programming.

The following courses contribute to the overall aims of this module:

- Programming 1-2
- Object Oriented Systems 1 - 2
- Software Engineering

Aim of this course:

Students will understand software development, requirements analysis, as well as modelling.

Contents:

Overview of Capability Maturity Model Integration (CMMI) and process models

Project management
Configuration management
Project change management
Quality management

Requirements Engineering
System analysis
System design
System implementation
System integration
System testing

Main features of UML 2.x:

Model elements. Classes. Artefacts. Static relationships: dependency, association, generalisation, realisation. Overview of diagram types in UML. Use Case, Activity, State machine, Package, Class, Object, Component, Deployment, Sequence, Communications, Interactions overview, Timing.

Creation of a functional specification: requirements (in English)

Modelling a software system in UML

Literature:

J. Goll: Methoden des Software Engineering; Springer Vieweg 2012.

Offered:

Every semester

Submodules and Assessment:

Type of instruction/learning:	Lecture with homework/self-study
Type of assessment:	Written exam (90 minutes)
Hours per week:	3 SWS Lecture 1 SWS exercises in English
Estimated student workload:	120 hours

Learning outcomes:

Students will acquire methodological knowledge of engineer-like software engineering.

Type of instruction/learning:	Laboratory exercises
Type of assessment:	Attendance certificate
Hours per week:	1 SWS
Estimated student workload:	30 hours

Learning outcomes:

Students will be able to establish requirements (in English). They will further be able to create a functional specification and understand how a program is created.

Overall Assessment:

Written exam, non-graded attendance certificate