Title	Content	English {Full, Partial}	Year	ECTS credits	Term {Spring, Autumn}	Lecturer
Mixed Reality	multi-modal human-computer interaction (incl. voice, gesture), Processing programming language, user-centered design, prototyping, image and audio processing, human factors, augmented reality	partially	undergrad. 2	5	Spring	Professor Gerndt
Robotics	math for robotics, kinematics and dynamics, high-level control	partially	grad. 2	5	Spring	Professor Gerndt
Interdisciplinary Project	real-world computer science project	partially	undergrad. 2	5	Spring and Autumn	Professor Gerndt
Project	depending on research interest	partially			Spring and Autumn	Several
Business Information Systems	Classification of informations systems, planning tasks and solution approaches for business processes, enterprise resource planning (ERP), IT integration, IT managment	partially				Professor Gutenschwager
Development of Complex Software Systems	This course introduces Java Enterprise Edition (Java EE). Java EE is used in almost all big companies to build enterprise applications. In detail we look into JSF, EJB, CDI, JPA and REST which are all part of Java EE	partially				Professor Müller
Applications for mobile systems		partially				Professor Weimar (Professor Jensen)
Computer Architectures	processor architectures, memory hierarchies, input-output systems, programming of microcontroller	partially	2	5	Spring	N.N.
Operating Systems and Computer Networks	common computer operating systems, interconnection of computers	partially	2	5	Spring	Professor Jensen
Automata Theory	alphabets, strings, formal languages, finite automata and non-determinism, regular expressions and langiuages, kontext-free grammars and languages, Turing machines, computability, decidability	partially	2	5	Spring and Autumn	Professor Seutter
Principles of Compiler Design	lexical analysis, syntactic analysis, tables, code generation	partially	3	5	Spring	Professor Seutter
Computer Graphics	elementary geometric obejcts, transformations, homogeneous coordinates, drawing lines and curves, colour models, scene graphs, modelling 3D-objects, projections, visible surface determination, illumination and shading, interpolators, special effects	partially	3	5	Spring	Professor Klawonn
Project	depending on research interest	partially	3 - 5		Spring and Autumn	Several
German language for Computer Science	CS-specific German language	partially	1 - 5	3	Spring and Autumn	German language teacher
		partially				
Electives	subject to availability	partially	3 - 5	3 - 5		Several
Signals and Systems	Sampling and data acquisition, system modeling, selected first and second order differntial equations, input-output relationship, frequency response, digital signal processing	partially	undergrad. 2	5	Autumn	Professor Riegler/Gerndt
Computer Architectures	Architectures, hardware related programming, C programming language	partially	undergrad. 1	5	Autumn	Professor Kircher/Gerndt
Image Processing	Image acquisition, basic image processing with Matlab, 3D-vision	partially	undergrad. 2/3	5	Autumn	Professor Kircher/Gerndt
Interdisciplinary Project	real-world computer science project	partially	undergrad. 2	5	Spring and Autumn	Professor Gerndt
System Theory	game theory, systems engineering, models, architectures, dynamics and analysis of systems	partially	grad. 1	5	Autumn	Professor Schiering/Gerndt
Systemmodelling languages	Scientific Programming with Python and Matlab	partially	grad. 2	5	Autumn	Professor Gerndt
Project	depending on research interest	partially			Spring and Autumn	Several
Process Computing	embedded systems, PLC, field buses, real-time behavior, real-time OS	partially	2	5	Autumn	Professor Klages
Automata Theory	alphabets, strings, formal languages, finite automata and non-determinism, regular expressions and langiuages, kontext-free grammars and languages, Turing machines, computability, decidability	partially	2	5	Spring and Autumn	Professor Seutter
System on Chip	hardware description language (VHDL), design rules and constraints, IP modules, processor cores, HW/SW co-design, system on chip (SOC), programming and OS for integrated processors	partially	3	5	Autumn	Professor Kreyssig
Numerical Methods	floating point arithmetic, accuracy and precision of numerical computations, numerical error analysis, numerical stability and conditioning	partially	4	5	Autumn	Professor Riegler
Data Mining	CRISP-DM model, business understanding, data understanding, visualisation, data preparation, modelling, cluster analysis, deviation analysis, association rules, classification, regression, validation	partially	5	5	Autumn	Professor Klawonn
Statistical Methods	descriptive statistics, probability, random variables, probability distributions, inferential statistics, point estimation, concepts of robust statistics, concepts of Bayesian statistics, confidence intervals, hypothesis testing, linear regression	partially	5	5	Autumn	Professor Klawonn
Project	depending on research interest	partially	3 - 5		Spring and Autumn	Several
German language for Computer Science	CS-specific German language	partially	1 - 5	3	Spring and Autumn	German language teacher
Electives	subject to availability		3 - 5			Several
Comments						
English	Full: Lecture, slides and (some) text books in English language					
	Partial: Lecture in German language, Recitation hour in English language when required, slides and (some) text books, problems and exams in English language					
ECTS credits	European credit transfer system credits, 5 ECTS relate to about 50 hours of lectures plus homework (30 ECTS credits is a typical workload for one semester)					
Term	Spring term: March, 1st to end of June					
	Autumn term: ~20th of September to end of January					