

Exclosure to Subject Specific Regulations from 26.11.2014
for Master-Programme Computer Science
at TUHH
Programme Director: Prof. Karl-Heinz Zimmermann
Total: 120 CP
Number of Specialisations to choose: 1



Course Scheme Master Computer Science (CSMS)

Consolidated Version
for Study Cohort: WiSe 14/15
according to Decision of Academic Senate: 26.04.2017
and Approval of Chair from: 17.05.2017
Replaces Version from: 25.06.2014
In Force on: 01.04.2016
Out of Force on: 30.09.2017

Re com. Term	Module Name (German)	Modul Name (English)	Institute	C/EC (1)	CM/OM (2)	Grade	Examination Form(3)	CP (4)	Course Name (German)	Course Name (English)	Course Form LV(5)	Language (6)	SWS (7)	Sem. LV
Core qualification Compulsory Courses: 30 LP Optional Courses: 18 LP														
1	Algebraische Statistik für computerorientierte Biologie	Algebraic Statistics for Computational Biology	E-13	EC	CM	Yes	MdIP	6						
									Algebraische Statistik für computergestützte Biologie	Algebraic Statistics for Computational Biology	UE	DE/EN	2	1
									Algebraische Statistik für computerorientierte Biologie	Algebraic Statistics for Computational Biology	VL	DE/EN	2	1
1	Algorithmische Algebra	Algorithmic Algebra	E-13	EC	CM	Yes	MdIP	6						
									Algorithmische Algebra	Algorithmic Algebra	VL	DE	3	1
									Algorithmische Algebra	Algorithmic Algebra	UE	DE	1	1
1	Effiziente Algorithmen	Efficient Algorithms	E-19	EC	CM	Yes	MdIP	6						
									Effiziente Algorithmen	Efficient Algorithms	VL	DE	2	1
									Effiziente Algorithmen	Efficient Algorithms	UE	DE	2	1
1	Numerische Mathematik II	Numerical Mathematics II	E-10	EC	CM	Yes	MdIP	6						
									Numerische Mathematik II	Numerical Mathematics II	VL	DE/EN	2	1
									Numerische Mathematik II	Numerical Mathematics II	UE	DE/EN	2	1
1	Quantitative Methoden - Statistik und Operations Research	Quantitative Methods - Statistics and Operations Research	W-4	EC	CM	Yes	KI	6						
									Quantitative Methoden - Statistik und Operations Research	Quantitative Methods - Statistics and Operations Research	VL	EN	2	1
									Quantitative Methoden - Statistik und Operations Research	Quantitative Methods - Statistics and Operations Research	POL	EN	3	1
2	Computerorientierte Algebraische Geometrie	Computational Algebraic Geometry	E-13	EC	CM	Yes	MdIP	6						
									Computerorientierte Algebraische Geometrie	Computational Algebraic Geometry	VL	DE/EN	2	2
									Computerorientierte Algebraische Geometrie	Computational Algebraic Geometry	UE	DE/EN	2	2
3	Forschungsprojekt und Seminar	Research Project and Seminar	not defined	C	CM	Yes	PA It. FSPO	18						
									Hauptseminar	Seminar	SE	DE/EN	2	3

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1-3	Betrieb & Management	Business & Management	W-1	C	OM			6	Selection out of Catalogue					
1-3	Nichttechnische Ergänzungskurse im Master	Nontechnical Elective Complementary Courses for Master	0-TUHH	C	OM			6	Selection out of Catalogue					
Specialisation Computer and Software Engineering Compulsory Courses: 0 LP Optional Courses: 42 LP Number of Focuses to choose: 1														
1	Kommunikationsnetze I - Analyse und Struktur	Communication Networks I - Analysis and Structure	E-4	EC	CM	Yes	Ko	6						
									Analyse und Struktur von Kommunikationsnetzen	Analysis and Structure of Communication Networks	VL	EN	2	1
									Ausgewählte Themen der Kommunikationsnetze	Selected Topics of Communication Networks	POL	EN	2	1
									Übung Kommunikationsnetze	Communication Networks Exercise	POL	EN	1	1
1	Softwareverifikation	Software Verification	E-16	EC	CM	Yes	KI	6						
									Softwareverifikation	Software Verification	VL	EN	2	1
									Softwareverifikation	Software Verification	UE	EN	2	1
1	Verteilte Algorithmen	Distributed Algorithms	E-17	EC	CM	Yes	MdIP	6						
									Verteilte Algorithmen	Distributed Algorithms	VL	DE/EN	2	1
									Verteilte Algorithmen	Distributed Algorithms	HÜ	DE/EN	2	1
2	Computer-Grafik und Animation	Computer Graphics and Animation	E-13	EC	CM	Yes	PA	6						
									Computer-Grafik und Animation	Computer Graphics and Animation	VL	EN	2	2
									Computer-Grafik und Animation	Computer Graphics and Animation	PS	EN	2	2
2	Eingebettete Systeme	Embedded Systems	E-13	EC	CM	Yes	KI	6						
									Eingebettete Systeme	Embedded Systems	VL	DE/EN	2	2
									Eingebettete Systeme	Embedded Systems	UE	DE/EN	2	2
2	Hochleistungsrechnen	High-Performance Computing	M-8	EC	CM	Yes	KI	6						
									Grundlagen des Hochleistungsrechnens	Fundamentals of High-Performance Computing	VL	DE/EN	2	2
									Grundlagen des Hochleistungsrechnens	Fundamentals of High-Performance Computing	POL	DE/EN	2	2
2	Informationstheorie und Codierung	Information Theory and Coding	E-8	EC	CM	Yes	KI	6						
									Informationstheorie und Codierung	Information Theory and Coding	VL	DE/EN	3	2
									Informationstheorie und Codierung	Information Theory and Coding	HÜ	DE/EN	1	2
2	Kommunikationsnetze II - Simulation und Modellierung	Communication Networks II - Simulation and Modeling	E-4	EC	CM	Yes	Ko	6						
									Simulation und Modellierung von Kommunikationsnetze	Simulation and Modelling of Communication Networks	POL	EN	5	2
2	Netzwerk-Sicherheit	Network Security	E-15	EC	CM	Yes	KI	6						
									Netzwerk-Sicherheit	Network Security	VL	EN	3	2
									Netzwerk-Sicherheit	Network Security	UE	EN	2	2

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2	Software für eingebettete Systeme	Software for Embedded Systems	E-17	EC	CM	Yes	KI	6						
									Software für eingebettete Systeme	Software for Embedded Systems	VL	DE/EN	2	2
									Software für eingebettete Systeme	Software for Embedded Systems	UE	DE/EN	3	2
2	Softwareanalyse	Software Analysis	E-16	EC	CM	Yes	KI	6						
									Softwareanalyse	Software Analysis	VL	EN	2	2
									Softwareanalyse	Software Analysis	UE	EN	2	2
3	CMOS-Nanoelektronik mit Praktikum	CMOS Nanoelectronics with Practice	E-9	EC	CM	Yes	KI	6						
									CMOS-Nanoelektronik	CMOS Nanoelectronics	VL	EN	2	3
									CMOS-Nanoelektronik	CMOS Nanoelectronics	UE	EN	1	3
									CMOS-Nanoelektronik	CMOS Nanoelectronics	PR	EN	2	3
3	Fortgeschrittener Entwurf von Chip-Systemen (Praktikum)	Advanced System on Chip Design (Lab)	E-13	EC	CM	No	PA	6						
									Fortgeschrittener Entwurf von Chip-Systemen	Advanced System on Chip Design	POL	DE/EN	3	3
3	Software-Sicherheit	Software Security	E-15	EC	CM	Yes	KI	6						
									Software-Sicherheit	Software Security	VL	EN	2	3
									Software-Sicherheit	Software Security	UE	EN	2	3
3	The Computational Web	The Computational Web	E-13	EC	CM	Yes	PA	6						
									The Computational Web	The Computational Web	VL	EN	2	3
									The Computational Web	The Computational Web	PS	EN	2	3
3	Traffic Engineering	Traffic Engineering	E-4	EC	CM	Yes	MdIP	6						
									Seminar Traffic Engineering	Seminar Traffic Engineering	SE	EN	2	3
									Traffic Engineering	Traffic Engineering	VL	EN	2	3
									Traffic Engineering Übung	Traffic Engineering Exercises	UE	EN	1	3
Specialisation Intelligence Engineering Compulsory Courses: 0 LP Optional Courses: 42 LP Number of Focuses to choose: 1														
1	Digitale Bildanalyse	Digital Image Analysis	E-2	EC	CM	Yes	KI	6						
									Digitale Bildanalyse	Digital Image Analysis	VL	EN	4	1
1	Intelligente Autonome Agenten und kognitive Robotik	Intelligent Autonomous Agents and Cognitive Robotics	E-16	EC	CM	Yes	KI	6						
									Intelligente Autonome Agenten und kognitive Robotik	Intelligent Autonomous Agents and Cognitive Robotics	VL	EN	2	1
									Intelligente Autonome Agenten und kognitive Robotik	Intelligent Autonomous Agents and Cognitive Robotics	UE	EN	2	1
1	Mathematische Bildverarbeitung	Mathematical Image Processing	E-10	EC	CM	Yes	MdIP	6						
									Mathematische Bildverarbeitung	Mathematical Image Processing	VL	DE/EN	3	1
									Mathematische Bildverarbeitung	Mathematical Image Processing	UE	DE/EN	1	1
1	Theorie und Entwurf regelungstechnischer Systeme	Control Systems Theory and Design	E-14	EC	CM	Yes	KI	6						

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									Theorie und Entwurf regelungstechnischer Systeme	Control Systems Theory and Design	VL	EN	2	1
									Theorie und Entwurf regelungstechnischer Systeme	Control Systems Theory and Design	UE	EN	2	1
2	Maschinelles Lernen und Data Mining	Machine Learning and Data Mining	E-16	EC	CM	Yes	KI	6						
									Maschinelles Lernen und Data Mining	Machine Learning and Data Mining	VL	EN	2	2
									Maschinelles Lernen und Data Mining	Machine Learning and Data Mining	UE	EN	2	2
2	Mustererkennung und Datenkompression	Pattern Recognition and Data Compression	E-2	EC	CM	Yes	KI	6						
									Mustererkennung und Datenkompression	Pattern Recognition and Data Compression	VL	EN	4	2
2	Nichtlineare Optimierung	Nonlinear Optimization	E-19	EC	CM	Yes	MdIP	6						
									Nichtlineare Optimierung	Nonlinear Optimization	VL	DE	3	2
									Nichtlineare Optimierung	Nonlinear Optimization	UE	DE	1	2
2	Numerische und Seminumische Programmierung	Numerical and Seminumerical Programming	E-19	EC	CM	Yes	MdIP	6						
									Numerische und Seminumische Programmierung	Numerical and Seminumerical Programming	VL	DE	2	2
									Numerische und Seminumische Programmierung	Numerical and Seminumerical Programming	UE	DE	2	2
2	Operations Research	Operations Research	W-4	EC	CM	Yes	HA	6						
									Operations Research	Operations Research	VL	DE	2	2
									Operations Research - Seminar	Operations Research - Seminar	SE	DE	2	2
2	Robotik und Navigation in der Medizin	Robotics and Navigation in Medicine	E-1	EC	CM	Yes	KI	6						
									Robotik und Navigation in der Medizin	Robotics and Navigation in Medicine	VL	EN	2	2
									Robotik und Navigation in der Medizin	Robotics and Navigation in Medicine	UE	EN	1	2
									Robotik und Navigation in der Medizin	Robotics and Navigation in Medicine	PS	EN	2	2
3	3D Computer Vision	3D Computer Vision	E-2	EC	CM	Yes	KI	6						
									3D Computer Vision	3D Computer Vision	VL	EN	2	3
									3D Computer Vision	3D Computer Vision	UE	EN	2	3
3	Angewandte Bioinformatik	Applied Bioinformatics	V-1	EC	CM	Yes	KI	6						
									Angewandte Bioinformatik	Applied Bioinformatics	VL	EN	3	3
									Angewandte Bioinformatik	Applied Bioinformatics	UE	EN	3	3
3	Intelligente Systeme in der Medizin	Intelligent Systems in Medicine	E-1	EC	CM	Yes	KI	6						
									Intelligente Systeme in der Medizin	Intelligent Systems in Medicine	VL	EN	2	3
									Intelligente Systeme in der Medizin	Intelligent Systems in Medicine	UE	EN	1	3
									Intelligente Systeme in der Medizin	Intelligent Systems in Medicine	PS	EN	2	3
3	Numerische Verfahren in der medizinischen Bildgebung	Numerical Methods for Medical Imaging	E-1	EC	CM	Yes	KI	6						

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									Numerische Verfahren in der medizinischen Bildgebung	Numerical Methods for Medical Imaging	VL	DE	2	3
									Numerische Verfahren in der medizinischen Bildgebung	Numerical Methods for Medical Imaging	UE	DE	2	3
Thesis Compulsory Courses: 30 LP Optional Courses: 0 LP														
4	Masterarbeit	Master Thesis	not defined	C	CM	Yes	lt. FSPO	30						

Explanation:

¹C=Compulsory, EC=Elective Compulsory

²CM=Compulsory Defined Module, OM=Optional Defined Module

³KI=Written exam, SA=Written elaboration, Re=Presentation, MdlP=Oral exam, Kl=Written exam, MdlP=Oral exam, Ko=Colloquium, HA=Homework, PA=Project, HA=Homework, PA=Project, PA lt. FSPO=Project (accord. to Subject Specific Regulations), lt. FSPO=according to Subject Specific Regulations

⁴CP=Credit Points

⁵VL=Lecture, SE=Seminar, UE=Recitation Section (small), POL=Problem-based Learning, PR=Laboratory Course, PS=Project Seminar, HÜ=Recitation Section (large)

⁶DE=German, EN=English, DE/EN=German and English

⁷SWS=Contact hours