Exclosure to Subject Specific Regulations from 25.07.2018
for Master-Programme Computer Science
at TUHH
Programme Director: Prof. Karl-Heinz Zimmermann
Total: 120 CP
Number of Specilisations to choose: 1

TUHH
Hamburg University of Technology

Course Scheme Master Computer Science (CSMS)

Consolidated Version
for Study Cohort: WiSe19/20
en_head_sda
and Approval of Chair from: 24.04.2019
In Force on: 01.10.2019
Out of Force on: 30.09.2022

Information regarding the lectures are available in the TUHH modul manuals as well as in the course catalogue.

	Module							Exami nation			Course Work		
	Re com. Term	Module Name (German / English)	Language	Module Responsability	Institute	C/EC (1)	CM/ OM (2)	CP (4)	Grade	Exami nation Form(3)	Compulsory	Course Work Type	Bonus (in %)
Core qualification Compulsory Courses: 30 LP Optional Courses: 0 LP													
	3	Forschungsprojekt und Seminar / Research Project and Seminar	DE / EN	Prof. Zimmermann	SD-E	C	CM	18	Y	STA			
	1-3	Betrieb & Management / Business & Management	DE / EN	Prof. Meyer	W-1	C	OM	6	Selection out of seperatly published Catalogue				
	1-3	Nichttechnische Ergänzungskurse im Master / Nontechnical Elective Complementary Courses for Master	DE / EN	Richter	0-TUHH	C	OM	6	Selection out of seperatly published Catalogue				
Specialisation Computer and Software Engineering Compulsory Courses: 0 LP Optional Courses: 60 LP													
	1	Algorithmische Algebra / Algorithmic Algebra	DE	Dr. Batra	E-19	EC	CM	6	Y	MP			
	1	Effiziente Algorithmen / Efficient Algorithms	DE	Prof. Rump	E-19	EC	CM	6	Y	KL			
	1	Kommunikationsnetze / Communication Networks	EN	Prof. Timm-Giel	E-4	EC	CM	6	Y	RE			
	1	Softwareverifikation / Software Verification	EN	Prof. Schupp	E-16	EC	CM	6	Y	KL	Y	ÜA	15
	1	Technischer Ergänzungskurs I für CSMS (laut FSPO) / Technical Complementary Course I for CSMS (according to Subject Specific Regulations)		Prof. Zimmermann	E-13	EC	OM	6	according to Subject Specific Regulations				
	1	Verteilte Algorithmen / Distributed Algorithms	DE / EN	Prof. Turau	E-17	EC	CM	6	Y	MP			
	2	Anwendungssicherheit / Application Security	EN	Prof. Gollmann	E-15	EC	CM	6	Y	KL			
	2	Compiler für Eingebettete Systeme / Compilers for Embedded Systems	DE / EN	Prof. Falk	E-13	EC	CM	6	Y	MP			
	2	Computer-Grafik / Computer Graphics	EN	Prof. Knopp	E-5	EC	CM	6	Y	KL			
	2	Drahtlose Sensornetze / Wireless Sensor Networks	EN	Prof. Renner	E-EXK2	EC	CM	6	Y	MP			
	2	Entwurf von Dependable Systems / Design of Dependable Systems	DE / EN	Prof. Fey	E-13	EC	CM	6	Y	MP	N	ÜA	0
	2	Kurven, Kryptosysteme und Quanten-Computing / Curves, Cryptosystems and Quantum Computing	DE / EN	Prof. Zimmermann	E-13	EC	CM	6	Y	MP			

	Module							Examination			Course Work		
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	2	Modellprüfung - Beweiser und Algorithmen / Model Checking - Proof Engines and Algorithms	DE / EN	Prof. Fey	E-13	EC	CM	6	Y	MP			
	2	Numerische Mathematik II / Numerical Mathematics II	DE / EN	Prof. Le Borne	E-10	EC	CM	6	Y	MP			
	2	Randomisierte Algorithmen und Zufällige Graphen / Randomised Algorithms and Random Graphs	DE / EN	Prof. Taraz	E-10	EC	CM	6	Y	MP			
	2	Simulation von Kommunikationsnetzen / Simulation of Communication Networks	EN	Prof. Timm-Giel	E-4	EC	CM	6	Y	MP			
	2	Software für Eingebettete Systeme / Software for Embedded Systems	DE / EN	Prof. Turau	E-17	EC	CM	6	Y	KL			
	2	Softwaretesten / Software Testing	EN	Prof. Schupp	E-16	EC	CM	6	Y	FFA			
	2	Technischer Ergänzungskurs II für CSMS (laut FSPO) / Technical Complementary Course II for CSMS (according to Subject Specific Regulations)		Prof. Zimmermann	E-13	EC	OM	6	according to Subject Specific Regulations				
	3	Echtzeitsysteme / Real-Time Systems	EN	Prof. Falk	E-13	EC	CM	6	Y	MP			
	3	Fortgeschrittener Entwurf von Chip-Systemen (Praktikum) / Advanced System-on-Chip Design (Lab)	DE / EN	Prof. Falk	E-13	EC	CM	6	N	FFA			
	3	Software-Sicherheit / Software Security	EN	Prof. Gollmann	E-15	EC	CM	6	Y	KL			
	3	Softwareanalyse / Software Analysis	EN	Prof. Schupp	E-16	EC	CM	6	Y	FFA			
	3	Traffic Engineering / Traffic Engineering	EN	Prof. Timm-Giel	E-4	EC	CM	6	Y	MP			
	3	Wissenschaftliches Rechnen und Genauigkeit / Scientific Computing and Accuracy	DE	Prof. Rump	E-19	EC	CM	6	Y	MP			
Specialisation Intelligence Engineering Compulsory Courses: 0 LP Optional Courses: 60 LP													
	1	Digitale Bildanalyse / Digital Image Analysis	EN	Prof. Grigat	E-2	EC	CM	6	Y	KL			
	1	Digitale Nachrichtenübertragung / Digital Communications	DE / EN	Prof. Bauch	E-8	EC	CM	6	Y	KL	Y	SA	0
	1	Digitale Signalverarbeitung und Digitale Filter / Digital Signal Processing and Digital Filters	EN	Prof. Bauch	E-8	EC	CM	6	Y	KL			
	1	Intelligente Autonome Agenten und kognitive Robotik / Intelligent Autonomous Agents and Cognitive Robotics	EN	Marrone	E-16	EC	CM	6	Y	KL			
	1	Intelligente Systeme in der Medizin / Intelligent Systems in Medicine	EN	Prof. Schlaefer	E-1	EC	CM	6	Y	KL	Y	SA	10
											Y	RE	10
	1	Mathematische Bildverarbeitung / Mathematical Image Processing	DE / EN	Prof. Lindner	E-10	EC	CM	6	Y	MP			
	1	Prozessautomatisierungstechnik / Industrial Process Automation	EN	Prof. Schlaefer	E-1	EC	CM	6	Y	KL	N	ÜA	10
	1	Robotik / Robotics	EN	Prof. Weltin	M-24	EC	CM	6	Y	KL			
	1	Soft-Computing - Einführung in Maschinenlernen / Soft Computing - Introduction to Machine Learning	DE / EN	Prof. Zimmermann	E-13	EC	CM	6	Y	MP			

	Module							Examination			Course Work		
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	1	Technischer Ergänzungskurs I für CSMS (laut FSPO) / Technical Complementary Course I for CSMS (according to Subject Specific Regulations)		Prof. Zimmermann	E-13	EC	OM	6	according to Subject Specific Regulations				
	1	Theorie und Entwurf regelungstechnischer Systeme / Control Systems Theory and Design	EN	Prof. Werner	E-14	EC	CM	6	Y	KL			
	1	Wissenschaftliches Rechnen und Genauigkeit / Scientific Computing and Accuracy	DE	Prof. Rump	E-19	EC	CM	6	Y	MP			
	2	Angewandte Humanoide Robotik / Applied Humanoid Robotics	DE / EN	Göttsch	E-14	EC	CM	6	N	SA			
	2	Diskrete Differentialgeometrie / Discrete Differential Geometry	DE / EN	Prof. Zimmermann	E-13	EC	CM	6	Y	MP			
	2	Informationstheorie und Codierung / Information Theory and Coding	DE / EN	Prof. Bauch	E-8	EC	CM	6	Y	KL			
	2	Maschinelles Lernen und Data Mining / Machine Learning and Data Mining	EN	NN	E-16	EC	CM	6	Y	KL			
	2	Mustererkennung und Datenkompression / Pattern Recognition and Data Compression	EN	Prof. Grigat	E-2	EC	CM	6	Y	KL			
	2	Numerische Mathematik II / Numerical Mathematics II	DE / EN	Prof. Le Borne	E-10	EC	CM	6	Y	MP			
	2	Optimale und robuste Regelung / Optimal and Robust Control	EN	Prof. Werner	E-14	EC	CM	6	Y	MP			
	2	Robotik und Navigation in der Medizin / Robotics and Navigation in Medicine	EN	Prof. Schlaefer	E-1	EC	CM	6	Y	KL	Y	SA	10
											Y	RE	10
	2	Technischer Ergänzungskurs II für CSMS (laut FSPO) / Technical Complementary Course II for CSMS (according to Subject Specific Regulations)		Prof. Zimmermann	E-13	EC	OM	6	according to Subject Specific Regulations				
	3	3D Computer Vision / 3D Computer Vision	EN	Prof. Grigat	E-2	EC	CM	6	Y	KL			
	3	Ausgewählte Themen der Regelungstechnik / Advanced Topics in Control	EN	Prof. Werner	E-14	EC	CM	6	Y	MP			
	3	Digitale Audiosignalverarbeitung / Digital Audio Signal Processing	EN	Prof. Zölzer	E-8	EC	CM	6	Y	KL			
	3	Mathematik neuronaler Netzwerke / Mathematics of Neural Networks	DE / EN	Dr. Zemke	E-10	EC	CM	6	Y	MP			
	3	Numerische Verfahren in der medizinischen Bildgebung / Numerical Methods for Medical Imaging	DE	Prof. Knopp	E-5	EC	CM	6	Y	KL			
Thesis	Compulsory Courses: 30 LP Optional Courses: 0 LP												
	4	Masterarbeit / Master Thesis		Professoren der TUHH	0-TUHH	C	CM	30	Y	AB			

Explanation:

[1]C=Compulsory, EC=Elective Compulsory
[2]CM=Compulsory Defined Module, OM=Optional Defined Module
[3]KL=Written exam, SA=Written elaboration, FFA=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, STA=Study work, ÜA=Excercises, AB=Thesis
[4]CP=Credit Points
[5]VL=Lecture, SE=Seminar, UE=Recitation Section (small), PBL=Project-/problem-based Learning, PR=Practical Course, PS=Project Seminar, PK=Projection Course, HÜ=Recitation Section (large)
[6]DE=German, EN=English, DE/EN=German and English
[7]SWS=Contact hours