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## **Annex SFB**

## Studienfachbeschreibung (subject description, SFB) for the subject Computer Science as a Master's with 1 major with the degree "Master of Science" (120 ECTS credits)

Responsible: Faculty of Mathematics and Computer Science Responsible: Institute of Computer Science Examination regulations version: 2017 Examination regulations version: 2017

Abbreviations used:	Course types: <b>E</b> = field trip, <b>K</b> = colloquium, <b>O</b> = conversatorium, <b>P</b> = placement/lab course, <b>R</b> = project, <b>S</b> = seminar, <b>T</b> = tutorial, <b>Ü</b> = exercise, <b>V</b> = lecture
	Term: <b>SS</b> = summer semester, <b>WS</b> = winter semester
	Methods of grading: <b>NUM</b> = numerical grade, <b>B/NB</b> = (not) successfully completed
	Regulations: <b>(L)ASPO</b> = general academic and examination regulations (for teaching-degree programmes), <b>FSB</b> = subject-specific provisions, <b>SFB</b> = list of modules
	Other: <b>A</b> = thesis, <b>LV</b> = course(s), <b>PL</b> = assessment(s), <b>TN</b> = participants, <b>VL</b> = prerequisite(s)
Conventions for the modules in this SFB:	Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not cre- ditable for bonus.
Information on assessment procedures:	Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the me- thod of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.
	Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.
	Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

#### In accordance with the general regulations governing the degree subject described in this module catalogue:

#### ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

### 09-Aug-2017 (2017-55)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

Every module will be described using the following form:

Abbreviation	Module title											
	ECTS		Duration	(in semesters)	Method of grading		Module level					
	Courses		To be spe	ecified in the form X	(y) with course type X	abbreviated as specified abov	ve and number of we	ekly contact hours y				
	Method of as	ssessme	ent									
	Only after su completion of		Il if applica	if applicable								
	Other prereq	uisites	if applica	if applicable								
	Participants and allocati- on of places		ocati- if applica	if applicable								
	Additional information		on if applica	if applicable								
	Referred to in	n LPO I	if applica	ble (examination re	gulations for teaching	g-degree programmes)						

Compulsory Course	es (20 ECTS cred	lits)								
10-I=SEM3-161-	Seminar 1 - Cu	rrent Top	ics in C	omputer Science						
m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		S (2)	S (2)						
	Method of asse	essment	puter	science	s) and presentation ( German and/or Eng		quent discussior	n on a topic from the field of com-		
	Additional Info	rmation		es available for stud Cl´, GE.	dents of the Master's	programme Informatik (Com	outer Science, 12	o ECTS credits): AT, SE, IT, IS, ES,		
10-I=SEM4-161-	Seminar 2 - Cu	rrent Top	ics in (	Computer Science						
m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		S (2)							
	Method of asse	essment			s) and presentation ( German and/or Eng	30 to 45 minutes) with subse ish	quent discussior	n on the topic of the seminar		
	Additional Info	rmation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, SE, IT, IS, ES, LR, HCI, GE						
10-I=PRAK-161-	Practical course - Current Topics in Computer Science									
m01	ECTS 10	Duratio	n	1 semester	Method of grading	(not) successfully completed	d Modul level	graduate		
	Courses		P (6)							
	Method of asse	essment		paper (5 to 15 pages lage of assessment:	) German and/or Eng	ish				
	Additional Info	rmation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, SE, IT, IS, ES, LR, HCI, GE							
<b>Compulsory Electiv</b>	es (70 ECTS cre	dits)								
10-l=3D-161-m01	3D Point Cloud	Process	ing							
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) + Ü (2) Module taught in: English							
	Method of asso		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus							
	Additional Info	rmation		es available for stud HCI,GE	dents of the Master's	programme Informatik (Com	outer Science, 12	o ECTS credits):		

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10-l=BS-161-m01	Opera	ating Systems									
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate			
	Cours	es		V (2)	+ Ü (2)						
	Meth	od of as	sessment			rox. 60 to 120 minutes).					
					If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi-						
				of on date)		s (approx. 15 minutes per candi-					
						ation for Master's students.					
						: German and/or English					
					table for bonus						
			formation	Focus	ses available for stu	dents of the Master's programme Informatik (Com	puter Science, 120	o ECTS credits): SE,ES,GE			
10-I=DM-161-m01		Mining			í						
	ECTS	5	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate			
	Cours				+ Ü (2)						
	Meth	od of as	sessment			rox. 60 to 120 minutes).					
					announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examinati f one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per can						
				date)				approx. 15 minutes per cunur			
						ation for Master's students.					
					uage of assessment table for bonus	: German and/or English					
	۸ ما ما ۵۰		formation			dente efite Mesterio nue ruene pufermentili (Cem					
10-I=DB-161-m01	Datab		Iormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT, IS, HCI, GE.							
10-1=00-101-11101	ECTS		Duratio	2	1 semester	Method of grading numerical grade	Modul level	graduate			
	Cours	5	Duratio		+ Ü (2)	Method of grading humencal grade	Modulievei	giauuate			
			sessment			rox. 60 to 120 minutes).					
	Meth	Ju ol as	sessment			irer at the beginning of the course, the written exa	mination may be i	replaced by an oral examination			
				ofon	e candidate each (a	pprox. 20 minutes) or an oral examination in grou					
	date).										
						ation for Master's students.					
					table for bonus	: German and/or English					
	Addit	ional In	formation			dents of the Master's programme Informatik (Com	puter Science, 120	o ECTS credits): SE, IS, HCI, GE.			

10-l=DB2-161-m01	Datab	ases 2							
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate
	Cours	es		V (2) +	+ Ü (2)				
		od of asse		If ann of one date). Langu credit	anguage of assessment: German and/or English reditable for bonus				
		onal Info				dents of the Master's p	programme Informatik (Compu	iter Science, 120	ECTS credits): SE, IS, HCI.
10-l=lCG-161-m01			nputer Gr	-					
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate
	Cours			V (2) -					
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus					
	Additi	onal Info	rmation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI.					
10-I=KT-161-m01		_	Complex	ity					
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate
	Cours			V (2) -					
		od of asso		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, IT, IS, ES, GE.					

10-l=KD-161-m01	Cryptography and Data Security										
	ECTS 5 Dui	ation	1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses	V (2	) + Ü (2)								
	Method of assessm	If ar of o date Sep Lan	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus								
	Additional Informat	ion Foci	uses available for s	tudents of the Master's programme Informati	ik (Computer Science, 12	o ECTS credits): AT, SE, IT, IS, GE.					
10-I=APR-161-m01	Advanced Program	ning									
	ECTS 5 Dui	ation	1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses	V (2	) + Ü (2)	·							
	Additional Informat	of o date Lan crea	If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examinatio of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi date). Language of assessment: German and/or English creditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):								
			SE,IS,LR, HCI, ES,GE								
10-I=SSS-172-m01	Security of Software Systems										
	ECTS 5 Dui	ation	1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses	Mod	V (2) + Ü (2) Module taught in: English								
	Method of assessm	If ar of o date Lan	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: English creditable for bonus								
	Additional Informat	ES.	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE, IS, LR, HCI,								

10-I=RAK-161-m01	Compu	Computer Architecture										
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	s		V (2)	+ Ü (2)							
	Methoo	l of ass	essment	lf ann of one date) Separ Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus							
	Additio	nal Infc	ormation	Focus	ses available for stu	udents of the Master's p	orogramme Informatik (	(Computer Science, 120	D ECTS credits): SE, IT, ES, LR, GE.			
10-I=RK-161-m01	Compu	ter Netv	works and	l Comn	nunication System	s						
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) ·	$(4) + \ddot{U}(2)$							
				of on date) Separ Langu credit	If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus							
				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT, ES, LR.								
10-I=WBS-161-m01	Knowledge-based Systems											
	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course			V (2) + Ü (2)								
	Methoo	l of ass	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus								
	Additio	nal Info	ormation	Focus	ses available for stu	udents of the Master's p	orogramme Informatik (	(Computer Science, 120	ECTS credits): SE, IT, IS, HCI, GE.			

10-I=PRJAK-162-	Project - Curr	ent Topics	in Con	nputer Science						
m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		P (4)							
	Method of as	sessment	Each Asses Langu	ject report (10 to 15 pages) and presentation of project (15 to 30 minutes) In project is offered one time only. The project will not be repeated; there will not be another project with the same topic. Sessment can, therefore, only be offered for the project offered in the respective semester. Inguage of assessment: German and/or English Sessment offered: In the semester in which the course is offered						
	Additional In			ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, SE, IT, IS, ES, R, HCI, GE.						
10-I=AA-152-m01	Advanced Au	tomation								
	ECTS 8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (4) -	+ Ü (2)						
	Method of as	sessment	writte credit	n examination (ap able for bonus	prox. 60 to 120 minute	es)				
	Additional In			ses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): ES,LR,GE						
	Referred to in	n LPO I	§ 22	I Nr. 3 b)						
10-I=AGIS-161-m01	Algorithms fo	or Geograp	hic Info	ormation Systems						
	ECTS 5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) -	+ Ü (2)						
	Method of assessment		lf ann of one date). Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus						
	Additional Information			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IS,HCI						
10-l=AG-161-m01	Computation	al Geometi	у							
	ECTS 5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) -	+ Ü (2)						
	Method of as	sessment	lf ann of one date). Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus						
	Additional In	formation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,HCI,GE						
Master's with 1 major Co	mputer Science (201	7)				JMU Würzburg • generated 19-Apr-	2025 • exam. reg. data r	record 88 079 - - H 2017	page 8 / 22	

10-I=APA-161-m01	Approximation Algorithms											
	ECTS	5	Duratio	n	1 semester	Method of grading numeric	al grade	Modul level	graduate			
	Course	S		V (2)	(2) + Ü (2)							
	Methoo	d of asso		If ann of on date) Langu credit	vritten examination (approx. 60 to 120 minutes). f announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- late). anguage of assessment: German and/or English reditable for bonus focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): NT,IT,GE							
				AT,IT,								
	Referre		-	§ 22	l Nr. 3 b)							
10-I=AUT-161-m01	Automa		· ·		1							
		5	Duratio		1 semester	Method of grading numeric	al grade	Modul level	graduate			
	Course				+ Ü (2)							
	Method of assessment			lf ann of on date) Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus							
	Additio	nal Info	rmation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, IT, ES, HCI, GE								
10-I=AVS-161-m01	Avionics Systems											
	ECTS	5	Duratio		1 semester	Method of grading numeric	al grade	Modul level	graduate			
	Course	S		V (2) ·	V (2) + Ü (2)							
				If ann of on date) Langu credit	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus							
	Additio	nal Info	rmation	Focus ES,LR		udents of the Master's program	me Informatik (Con	nputer Science, 120	o ECTS credits):			

10-HCI=M-	Multimodal User Interfaces												
MUI-161-m01	ECTS	5	Duration	า	1 semester Method of grading numerical grade Modul level graduate								
	Courses	;		V (2)	+ Ü (2)		<u>.</u>	•	,				
	Method	ofass	essment			results (approx. 40 m							
						nt: German and/or Eng	glish						
	Addition	nalinfa	ormation		creditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI,GE.								
	Referred					udents of the Master	s programme informati	ik (Computer Science, 12					
10-I=BER-161-m01	Comput			9 22 1	ll Nr. 3 b)								
10-I=DER-101-III01		5	Duration		1 semester	Mothod of grading	g numerical grade	Modul level	graduate				
	Courses	-	Duration		+ Ü (2)			Modulilevel	gladuate				
			essment			prox. 60 to 120 minu	tac)		_				
	Methou	01 0550	essment					ten examination may be	replaced by an oral examination				
				ofone	e candidate each (				s (approx. 15 minutes per candi-				
					date). Language of assessment: German and/or English								
					table for bonus		3050						
	Additior	nal Info	rmation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):								
					AT,SE,IT,IS,GE								
07-BI-161-m01	Bioinfor	Bioinformatics											
	ECTS	5	Duration	1	1 semester	Method of grading	g numerical grade	Modul level	undergraduate				
	Courses	;		V (2)	+ Ü (2)								
	Method	of asse	essment	written examination (approx. 60 to 120 minutes).									
					If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi-								
					of one candidate each (approx. 20 minutes) of an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date).								
				Langu	Language of assessment: German and/or English								
				credit	table for bonus								
10-I=CB-161-m01			truction				· · · · ·						
		5	Duration		1 semester	Method of grading	g numerical grade	Modul level	graduate				
	Courses	-		<u>``</u>	+ Ü (2)				_				
	Method	of asse	essment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination								
				date).	of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English								
	۸ ما دا : ۱:	nol luf-	wm at:		table for bonus	udanta aftha Mastar	a nya aya mara lafa	ik (Computor Coieras	o FCTC avadita)				
	Addition	ial info	ormation	Focus SE,IT,		udents of the Master'	s programme informati	ik (Computer Science, 12	o ECIS credits):				
				52,17,	10,02								

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10-I=DDB-172-m01	<b>Deductive Dat</b>	abases									
	ECTS 5	Duration	n	1 semester	Method of grading numerical grade		Modul level	graduate			
	Courses		V (2) +	- Ü (2)							
	Method of ass	essment									
			If ann	ounced by the lectur	rer at the beginning of the course, the wr	ritten examin	ation may be I	replaced by an oral examination			
			of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date).								
				Language of assessment: German and/or English							
				creditable for bonus							
	Additional Info	ormation	Focus	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, SE, IT, IS.							
10-I=LP-172-m01	Logic Program	nming									
	ECTS 5	Duration	n	1 semester	Method of grading numerical grade		Modul level	graduate			
	Courses		V (2) +	- Ü (2)							
	Method of ass	essment			ox. 60 to 120 minutes).	• •					
			If ann	ounced by the lectur	rer at the beginning of the course, the wr pprox. 20 minutes) or an oral examination	ritten examin	ation may be i	replaced by an oral examination			
			date).	canuluale each (ap	prox. 20 minutes) of an oral examination	in in groups o		s (approx. 15 minutes per canul-			
			Langu	Language of assessment: German and/or English							
				creditable for bonus							
	Additional Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, SE, IT, IS.								
10-I=EL-161-m01		E-Learning									
	ECTS 5	Duration		1 semester	Method of grading numerical grade		Modul level	graduate			
	Courses	_		V (2) + Ü (2)							
	Method of ass	essment									
			If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi-								
			date).								
			Language of assessment: German and/or English creditable for bonus								
	Additional Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):								
			SE,IT,IS,HCI,GE								
10-I=HCI-161-m01	Introduction in	nto Humar	n-Computer Interaction								
	ECTS 5	Duration		1 semester	Method of grading numerical grade		Modul level	graduate			
	Courses		V (3) +								
	Method of ass	essment			sults (approx. 30 minutes)						
				age of assessment: able for bonus	German and/or English						
	Additional Info	ormation			lents of the Master's programme Informa	atik (Compute	er Science, 120	o ECTS credits): HCI.			

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10-I=ES-161-m01	Embed	ded Sys	stems		-							
ļ	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S		V (4) ·	+ Ü (2)							
	Methoo	d of ass	essment	If ann of one date). Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus							
		1		AT,SE	E,ES,LR,GE	udents of the Master's	programme Informatik	(Computer Science, 120	c ECTS credits):			
10-I=PA-161-m01		is and <b>D</b>	Design of	Progra	ıms							
	ECTS	5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S		V (2) ·	2) + Ü (2)							
	Method of assessment			If announced by the lecturer at the beginning of the course, the written examination r of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 car date). Language of assessment: German and/or English creditable for bonus					s (approx. 15 minutes per candi-			
	Additio	onal Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IS,ES,GE								
10-I=IR-161-m01	Inform	ation Re	etrieval									
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (2) + Ü (2)								
	Methoo	d of ass	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus								
	Additio	onal Info	ormation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,IS,HCI,GE							

10-HCl=3DUI-161-	3D User Interfa	aces									
m01	ECTS 5	Duratio	1 I	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (2) +	· Ü (2)							
	Method of asso	essment	presentation of project results (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus								
	Additional Info	rmation	Focus	uses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI,GE.							
	Referred to in L	PO I	§ 22	Nr. 3 b)							
10-l=KT2-161-m01	Computational	Complex	ity II								
	ECTS 5	Duration	1 I	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (2) +	· Ü (2)							
	Method of asso	essment	lf anno of one date). Langu	ounced by the lectu candidate each (a		of the course, the written exa r an oral examination in grou					
	Additional Info	rmation	Focus	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, SE, IT, ES							
10-l=Kl1-161-m01	Artificial Intell	igence 1									
	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (2) + Ü (2)								
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examinati of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per cand date). Language of assessment: German and/or English creditable for bonus								
	Additional Info	rmation	Focus AT,SE,		dents of the Master's	programme Informatik (Con	nputer Science, 12	o ECTS credits):			
10-l=Kl2-161-m01	Artificial Intell	igence 2									
	ECTS 5	Duration	1 I	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (2) +	· Ü (2)							
	Method of asso	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus								
	Additional Info	ormation		es available for stu IS,HCI,GE	dents of the Master's	programme Informatik (Con	nputer Science, 12	o ECTS credits):			
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10-I=LVS-161-m01	Perforr	nance E	valuation	of Dis	tributed Systems							
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S		V (4) ·	+ Ü (2)							
	Methoo	d of ass	essment	lf ann of one date) Langu	vritten examination (approx. 60 to 120 minutes). f announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). .anguage of assessment: German and/or English creditable for bonus							
	Additional Information			Focus AT,IT,		Idents of the Master's	programme Informatik (	(Computer Science, 120	o ECTS credits):			
10-I=ML-161-m01	Mather	matical	Logic									
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S		V (2) ·	2) + Ü (2)							
				If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minute date). Language of assessment: German and/or English creditable for bonus					s (approx. 15 minutes per candi-			
	Additional Information			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IS,ES								
10-l=Ml-161-m01	Medica	Medical Informatics										
	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (2) + Ü (2)								
	Methoo	d of ass	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus								
	Additio	onal Info	ormation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,IS,HCI,GE							

10-I=PEB-161-m01	Perforn	nance E	ngineerin	g & Be	enchmarking of Com	puter Systems					
	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S	_	V (2)	+ Ü (2)				_		
	Methoo	l of ass	essment	lf ann of on date) Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus						
	Additio	nal Info	rmation		ses available for stud ES,HCI,GE	lents of the Master's	programme Informati	k (Computer Science, 120	o ECTS credits):		
10-I=PM-161-m01	Profess	sional P	roject Ma	nagen	nent						
	ECTS 5 Duration			า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		V (2)					•		
				of on date) Langu credit	If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus						
	other p	other prerequisites			Simultaneous completion of module 10-I=PRJ is recommended.						
	Additional Information			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE, IT, IS, ES, LR, HCI.							
10-I=RAM-161-m01	Compu	ter Aritl	nmetic								
	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	s		V (2) + Ü (2)							
	Methoo	d of ass	essment	lf ann of on date) Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus						
	Additio	nal Info	rmation	Focus AT,ES	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):						

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10-l=R01-152-m01	Robotics 1												
	ECTS	8	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) +	/ (4) + Ü (2)								
	Method of assessment			written examination (approx. 60 to 90 minutes) creditable for bonus									
	Additic	onal Info	rmation		ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): S,ES,LR,HCI								
	Referre	d to in L	PO I	§ 22	§ 22 II Nr. 3 b)								
10-I=R02-152-m01	Roboti	CS 2	1										
	ECTS	8	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) +	- Ü (2)				-				
	Method of assessment				n examination (ap able for bonus	prox. 60 to 90 minutes	)						
	Additional Information			Focus	es available for st	udents of the Master's	programme Informati	k (Computer Science, 120	o ECTS credits): IT, ES, LR				
	Referre	d to in L	PO I	§ 22 II Nr. 3 b)									
10-l=ST-161-m01	Discret	e Event	Simulatio	on									
	ECTS	8	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) + Ü (2)									
	Method of assessment			If ann of one date). Langu	ounced by the lect candidate each (		f the course, the writt an oral examination i		replaced by an oral examination s (approx. 15 minutes per candi-				
	Additic	onal Info	rmation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,IS,ES,GE									
10-HCI=RIS-161-	Real-Ti	me Inte	ractive Sy	/stems	stems								
m01	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (2) +	- Ü (2)				_				
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus									

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10-I=SAR-161-m01	Softwa	Software Architecture												
	ECTS	5	Duratior	ו	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	s		V (2) -	$V(2) + \ddot{U}(2)$									
	Method	l of asse	essment	written examination (approx. 60 to 120 minutes).										
				of one date). Langu	announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination f one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- ate). anguage of assessment: German and/or English reditable for bonus									
	Additio	nal Info	ormation	Focus SE,IT,		dents of the Master's	programme Informati	k (Computer Science, 120	e ECTS credits):					
	Referre	d to in L	PO I	§ 22	l Nr. 3 b)									
10-l=SSD-152-m01	Spacec	raft Sys	stem Desi	gn										
	ECTS	8	Duratior		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course			V (4) -										
	Method of assessment			written examination (approx. 60 to 120 minutes) creditable for bonus										
	Additional Information			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): ES, LR										
	Referred to in LPO I			§ 22    Nr. 3 b)										
	Machine Learning (for User Interfaces)													
LUI-161-m01	ECTS 5 Duratio		Duratior		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course			V (2) + Ü (2)										
	Method of assessment		essment	presentation of project results (approx. 40 minutes) Language of assessment: German and/or English creditable for bonus										
	Additio	nal Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI,GE.										
	Referre	d to in L	POI	§ 22	l Nr. 3 b)									
10-I=PI-172-m01	Probab	ilistic Ir	nference											
	ECTS	5	Duratior	า	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	s		V (2) -	⊦Ü (2)									
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus										
	Additional Information			Focus	es available for stud	dents of the Master's	programme Informati	k (Computer Science, 120	ECTS credits): AT, IT, IS, HCI.					

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10-l=VG-161-m01	Visuali	Visualization of Graphs												
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses	S		V (2)	+ Ü (2)									
	Method	l of asso	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus										
	Additio	nal Info	ormation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,HCI,GE									
	Referre	ed to in L	LPO I	§ 22	ll Nr. 3 b)									
10-I=RSE-172-m01		System	s Design											
	ECTS	10	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses	S		R (6)										
				project report (10 to 15 pages) and presentation of project (15 to 30 minutes) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered (The project will not be repeated; there will not be another project with the same topic. Assessment can, therefore, only be offered for the project offered in the respective semester.) Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): LR.										
10-I=EPB-172-m01					es and Orbital Stations									
10 1 21 2 1/2 1101		10	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses	S	<u> </u>	R (6)										
			essment	project report (10 to 15 pages) and presentation of project (15 to 30 minutes) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered (The project will not be repeated; there will not be another project with the same topic. Assessment can, therefore, only be offered for the project offered in the respective semester.)										
			_	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): LR.										
10-I=PRT-172-m01		1		et Engineering and Payloads										
		10	Duratio			Method of grading (not) successfully co	ompleted Modul level	graduate						
	Courses	-		P (6)										
	Method	d of asse	essment			pages) and presentation of results (15 to 3 t: German and/or English	;o minutes)							
	Additio	nal Info	rmation	Focus	ses available for stu	udents of the Master's programme Informat	tik (Computer Science, 12	o ECTS credits): LR.						

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10-I=AKA-161-m01	Selected Topics in Algorithms												
	ECTS 5 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (2) ·	+ Ü (2)								
	Methoo	d of ass	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus									
	Additio	onal Info	ormation	Focus AT	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT								
10-I=AKT-161-m01	Selecte	ed Topio	cs in Theo	ry									
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (2) ·	+ Ü (2)								
	method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus									
	Additio	onal Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT									
10-I=AK-	Selected Topics in Software Engineering												
SE-161-m01	ECTS	5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (2) + Ü (2)									
	Methoo	d of ass	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus									
	Additio	nal Info	ormation	Focus	es available for stu	dents of the Master's	programme Informatik	(Computer Science, 120	ECTS credits): SE.				

10-I=A- KITS-172-m01	Selected Topics in IT Security													
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	5			+ Ü (2) Ile taught in: Englis	h								
	Method	of asse		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: English creditable for bonus										
	Addition	nal Info		Focus ES.	ses available for stu	Idents of the Master's	programme Informa	tik (Computer Science, 12	o ECTS credits): SE, IS, LR, HCI,					
10-I=AKIT-161-m01	Selecte	d Topic	s in Inter	net Te	chnologies									
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	-		V (2) + Ü (2)										
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus										
	Addition	nal Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT.										
10-I=AKIS-161-m01	Selecte	d Topic	s in Intel	ligent	Systems									
	ECTS	5	Duration	<u>n</u>	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	-		V (2) ·										
	Method	of asse	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus										
				creat	able for bonus									

10-I=A-	Select	Selected Topics in Embedded Systems												
KES-161-m01	ECTS 5 Duration		n	1 semester	Method of grading	numerical grade	Modul level	graduate						
	Course	es	•	V (2)	+ Ü (2)			8						
			essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus										
			ormation	Focus	es available for stud	dents of the Master's	programme Informatik (Com	puter Science, 12	o ECTS credits): ES.					
10-I=STM-162-m01	NLP a	nd Text M	Aining											
	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	es		V (2) ·	+ Ü (2)									
	metho		essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English										
	Additi	onal Info	rmation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, IT, HCI.										
	Referr	ed to in l	PO I	§ 22 II Nr. 3 b)										
10-I=AKL-	Selected Topics in Aerospace Engineering													
R-161-m01	ECTS 5 Duratio		Duratio	<u>n</u>	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	es		V (2) + Ü (2)										
				written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Separate written examination for Master's students. Language of assessment: German and/or English creditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): LR.										
	Additi	onatinto	mation	rocus	ses available for stud	uents of the master's	programme informatik (COM	puter Science, 120	U ECTS Credits): LK.					

10-I=AKH-	Selecte	Selected Topics in HCI												
Cl-161-m01	ECTS	5	Duratior	۱	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	5			+ Ü (2) se type: alternative	ly S (2) or R (2) instead	l of Ü (2)	•						
	Method of assessment			written examination (60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus										
	Additio	nal Infc	ormation	Focus	ses available for stu	udents of the Master's	programme Informatik (Compu	uter Science, 12	o ECTS credits): HCI.					
10-I=AKII-161-m01	Selecte	d Topic	s in Comp	outer S	Science									
	ECTS	5	Duratior	l	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	5		V (2)	+ Ü (2)									
				If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus										
Thesis (30 ECTS cro	edits)													
10-I-MA-161-m01	Master's Thesis Computer Science													
	ECTS	25	Duratior	n 1 semester		Method of grading numerical grade Me		Modul level	graduate					
	Courses	5		No courses assigned to module										
	Method	ofass	essment	Master's thesis (50 to 100 pages) Language of assessment: German and/or English										
	Additio	nal Infc	ormation	Time to complete: 6 months										
10-I-MA-MK-162-	Concluc	ding Co	lloquium	Computer Science										
m01	ECTS	5	Duratior		1 semester	Method of grading	(not) successfully completed	Modul level	graduate					
	Courses	-		K (o)	-									
	Method	ofass	essment		final colloquium (approx. 60 minutes) Language of assessment: German and/or English									