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## **Annex SFB**

## Studienfachbeschreibung (subject description, SFB) for the subject Mathematics 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 Mathematics Examination regulations version: 2024 Examination regulations version: 2024

Abbreviations used:	Course types: $\mathbf{E}$ = field trip, $\mathbf{K}$ = colloquium, $\mathbf{O}$ = conversatorium, $\mathbf{P}$ = placement/lab course, $\mathbf{R}$ = project, $\mathbf{S}$ = seminar, $\mathbf{T}$ = tutorial, $\ddot{\mathbf{U}}$ = exercise, $\mathbf{V}$ = 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)):

### 31-Jan-2024 (2024-18)

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	be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y						
	Method of as	ssessm	ent							
	Only after su completion of		Il if applica	ble						
	Other prereq	uisites	if applica	ıble						
	Participants on of places		ocati- if applica	ble						
	Additional in	formati	on if applica	ıble						
	Referred to in	n LPO I	if applica	ble (examination re	gulations for teaching	g-degree programmes)				

<b>Compulsory Electi</b>	ves (90 E	CTS cre	dits)									
Subfield Mathema	atics (30-	Bo ECTS	credits)									
10-M=AAAN-161-	Applied Analysis											
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (2) ıle taught in: Germ	an and/or English						
	Methoo	l of ass	essment	minu Asses Lang	tes) or c) oral exam ssment offered: In t	ination in groups (gro	ups of 2, 15 minutes p		f one candidate each (approx. 20 emester			
10-M=AAL-	Topics	in Alge	ora									
G-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				+ Ü (2) Ile taught in: Germ	an and/or English						
				minu Asses Lang	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=ADG-	Differe	ntial Ge	· · ·									
M-161-m01	ECTS 10 Duratio				1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: German and/or English								
	Methoo	thod of assessment a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate examinutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus										
10-M=AFT-	Comple	ex Analy	vsis									
H-161-m01	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: German and/or English								
	Method of assessment			minu Asses Langi	Module taught in: German and/or English a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							

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10-M=AGMS-161-	Geome	etric Stru	uctures			,					
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es	_		+ Ü (2) le taught in: Germa	an and/or English					
	Metho	d of ass	essment	minut Asses Langu	es) or c) oral exam sment offered: In t	ination in groups (gro	utes, usually chosen) or b ups of 2, 15 minutes per c the course is offered and	andidate)	<sup>r</sup> one candidate each (approx. 20 emester		
10-M=AIST-161-	Indust	rial Stat	istics 1								
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es		V (4) - Modu	⊦ Ü (2) le taught in: Germa	an and/or English					
	Metho	d of ass	essment	minut Asses Langu	es) or c) oral exam sment offered: In t	ination in groups (gro	utes, usually chosen) or b ups of 2, 15 minutes per c the course is offered and	andidate)	one candidate each (approx. 20 emester		
10-M=ALTH-161-	Lie The	eory									
m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es		1 12	⊦ Ü (2) le taught in: Germa	an and/or English					
	Metho	d of ass	essment	minut Asses Langu	es) or c) oral exam sment offered: In t	ination in groups (gro	utes, usually chosen) or b ups of 2, 15 minutes per c the course is offered and	andidate)	one candidate each (approx. 20 emester		
10-M=ANG-	Numer	ic of Lar	ge Systei	ms of E	quations						
G-161-m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			V (4) + Ü (2) Module taught in: German and/or English							
	Metho	d of ass	essment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						

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10-M=AOP-	Basics in O	ptimization									
T-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			+ Ü (2) Ile taught in: Germa	n and/or English						
	Method of a	assessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=ARTH-242-	Mathemati	Mathematical Control Theory									
m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			+ Ü (2) le taught in: Germa	n and/or English						
	Method of assessmenta) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus										
10-M=ASM-		Models of R	isk Ma	nagement							
R-161-m01	ECTS 10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (4) + Ü (2) Module taught in: German and/or English								
	Method of a	assessment	minut Asses Langu	es) or c) oral exami sment offered: In th	nation in groups (gro	utes, usually chosen) or b) ups of 2, 15 minutes per can the course is offered and ir	ndidate)	one candidate each (approx. 20 emester			
10-M=AST-	Stochastica	al Processes									
P-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (4) + Ü (2) Module taught in: German and/or English								
	Method of a	assessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							

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10-M=A-	Topolo	gy									
TOP-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading r	umerical grade	Modul level	graduate		
	Course	S			+ Ü (2) ıle taught in: Gerr	nan and/or English		·			
	Methoo	d of ass	sessment	minu Asse Lang	tes) or c) oral exa ssment offered: Ir	(approx. 90 to 120 minut mination in groups (group the semester in which th nt: German or English	s of 2, 15 minutes per	candidate)	<sup>F</sup> one candidate each (approx. 20 emester		
10-M=AVS-	Insura	nce Ma	thematics	1							
M-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading r	umerical grade	Modul level	graduate		
	Course	S			+ Ü (2) ıle taught in: Gerr	nan and/or English		·			
	Methoo	d of ass	sessment	minu Asse Lang	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=AZ-	Time Series Analysis										
RA-212-m01	ECTS	10	Duratio	n	1 semester	Method of grading r	umerical grade	Modul level	graduate		
	Course	S		V (4) + Ü (2) Module taught in: German and/or English							
	Methoo	d of ass	sessment								
10-M=AZTH-161-	Numbe	r Theo	ry								
m01	ECTS 10 Duratio			n	1 semester	Method of grading r	umerical grade	Modul level	graduate		
	Courses			V (4) + Ü (2) Module taught in: German and/or English							
	Method of assessment			minu Asse Lang	tes) or c) oral exa ssment offered: Ir	(approx. 90 to 120 minut mination in groups (group the semester in which th nt: German or English	s of 2, 15 minutes per	candidate)	<sup>F</sup> one candidate each (approx. 20 emester		

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10-M=AGP-	Giovanr	ni Prod	i Lecture (	(Maste	er)					
Cin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses	5			+ Ü (1) ıle taught in: Engl	ish	·	·	_	
	Method	of ass	essment	minu Asses Lang	tes) or c) oral exa	nination in groups (gro the semester in which	oups of 2, approx. 10 mi		one candidate each (approx. 15 emester	
10-M=VA-	Selecte	d Topio	cs in Anal	ysis						
NA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses	5			+ Ü (2) ıle taught in: Gern	nan and/or English		·		
	Method	of ass	essment	minu Asses Langi	tes) or c) oral exa ssment offered: In	nination in groups (gro	oups of 2, 15 minutes pe		f one candidate each (approx. 20 emester	
10-M=VAT-	Algebra	ic Top	ology							
P-161-m01	ECTS 10 Duratio								graduate	
	Courses			V (4) + Ü (2) Module taught in: German and/or English						
	Method of assessment									
10-M=VFN-	Selecte	d Topio	cs in Finar	ncial N	lathematics					
M-161-m01	ECTS 10 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			V (4) + Ü (2) Module taught in: German and/or English						
	Method of assessment			minu Asses Langi	tes) or c) oral exa ssment offered: In	nination in groups (gro	oups of 2, 15 minutes pe		f one candidate each (approx. 20 emester	

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10-M=VGDS-161-	Groups and	their Repre	sentati	ons							
m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: German and/or English							
	Method of a	ssessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=V-	Geometrical	Mechanics	;								
GEM-161-m01	ECTS 10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			+ Ü (2) le taught in: Germ	an and/or English						
	Method of a	ssessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=VIST-161-	Industrial Statistics 2										
m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (4) + Ü (2) Module taught in: German and/or English								
	Method of a	ssessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 2 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus								
10-M=V-	Field Arithm	etics									
KAR-161-m01	ECTS 10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			+ Ü (2) le taught in: Germ	an and/or English						
	Method of a	ssessment	minut Asses Langu	Module taught in: German and/or English a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							

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10-M=VN-	Numer	ic of Pa	rtial Diffe	rential	Equations						
PE-161-m01	ECTS 10 Duration			n	1 semester	Method of grading numerical grade	Modul	level	graduate		
	Course	S			+ Ü (2) ıle taught in: Geri	man and/or English					
	Metho	d of ass	sessment	minu Asse Lang	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=VOP-	Selecte	ed Topi	cs in Opti	mizati	on						
T-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading numerical grade	Modul	level	graduate		
	Course	S			+ Ü (2) ıle taught in: Geri	man and/or English	, and the second s				
	Metho	d of ass	sessment	minu Asse Lang	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=V-	Mathematical Statistics										
STA-212-m01	ECTS	10	Duratio	n	1 semester	Method of grading numerical grade	Modul	level	graduate		
	Courses			V (4) + Ü (2) Module taught in: German and/or English							
	Metho	d of ass	sessment	<ul> <li>a) written examination (approx. 90 to 120 minutes, usually chosen) or</li> <li>b) oral examination of one candidate each (approx. 20 minutes) or</li> <li>c) oral examination in groups (groups of 2, 15 minutes per candidate)</li> <li>Assessment offered: In the semester in which the course is offered and in the subsequent semester</li> <li>Language of assessment: German or English</li> <li>creditable for bonus</li> </ul>							
10-M=VVS-	Insura	nce Ma	thematics	2							
M-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading numerical grade	Modul	level	graduate		
	Course	Courses			V (4) + Ü (2) Module taught in: German and/or English						
	Metho	d of ass	sessment	minu Asse: Lang	tes) or c) oral exa ssment offered: Ir	(approx. 90 to 120 minutes, usually choser mination in groups (groups of 2, 15 minutes n the semester in which the course is offered ent: German or English	per candidate)				

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10-M=V-	Discret	Discrete Mathematics										
DIM-161-m01	ECTS 5 Duration				1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (1) ule taught in: Gerr	nan and/or English		·				
	Method	d of ass	essment	minu Asse Lang	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=VD-	Dynam	ical Sys	stems									
SY-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (1) ule taught in: Gerr	nan and/or English		·				
	Methoo	d of ass	essment	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus								
ıo-M=V-	Aspects of Geometry											
GEO-161-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	Courses			V (3) + Ü (1) Module taught in: German and/or English							
	Method of assessment											
lo-M=V-	Mathe	matical	Continuu	m Me	chanics							
KOM-161-m01	ECTS			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	Courses			V (3) + Ü (1) Module taught in: German and/or English							
	Methoo	d of ass	essment	minu Asse Lang	tes) or c) oral exa ssment offered: Ir	mination in groups (gro	utes, usually chosen) or oups of 2, approx. 10 mi the course is offered a	nutes per candidate)	one candidate each (approx. 15 emester			

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10-M=VMB-	Mat	hema	tical Ima	aging							
V-161-m01	ECTS	5 5	D	uration	ı	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Coui	rses			V (3) + Modu	⊦ Ü (1) le taught in: Germ	an and/or English				
	Method of assessment				a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=VMPH-161-	Sele	cted <sup>-</sup>	Topics i	n Math	ematio	al Physics					
m01	ECTS	5 10	D D	uratior	ı	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Coui	rses			V (4) + Modu	⊦ Ü (2) le taught in: Germ	an and/or English				
	Method of assessment				a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=V-	Selected Topics in Mathematical Control Theory										
TRT-242-m01	ECTS	5 10	D D	uratior		1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses				V (4) + Ü (2) Module taught in: German and/or English						
	Method of assessment			sment	<ul> <li>a) written examination (approx. 90 to 120 minutes, usually chosen) or</li> <li>b) oral examination of one candidate each (approx. 20 minutes) or</li> <li>c) oral examination in groups (groups of 2, 15 minutes per candidate)</li> <li>Assessment offered: In the semester in which the course is offered and in the subsequent semester</li> <li>Language of assessment: German or English</li> <li>creditable for bonus</li> </ul>					emester	
10-M=VI-			roblems	1							
PR-222-m01	ECTS	5 5	D	uration		1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses				V (3) + Ü (1) Module taught in: German and/or English						
	Method of assessment				minut Asses Langu	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus					

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10-M=VMT-	Module	Module Theory										
H-161-m01	ECTS 5 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (3) + Ü (1) Module taught in: German and/or English							
	Methoo	d of ass	essment	minu Asse Lang	tes) or c) oral exa ssment offered: Ir	mination in groups (gro	utes, usually chosen) or oups of 2, approx. 10 mir the course is offered an	nutes per candidate)	one candidate each (approx. 15 emester			
10-M=V-	Non-lin	near Ana	alysis									
NAN-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (1) Jle taught in: Gerr	nan and/or English						
	Methoo	d of ass	essment	minu Asse Lang	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 19 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=VOST-161-	Optimal Control											
m01	ECTS 5 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (3) + Ü (1) Module taught in: German and/or English								
	Method of assessment			a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (appr minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus								
10-M=VV-	Networ	rked Sys	stems									
SY-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (3) + Ü (1) Module taught in: German and/or English								
	Methoo	d of ass	essment	minu Asse Lang	tes) or c) oral exa ssment offered: Ir	mination in groups (gro	utes, usually chosen) or oups of 2, approx. 10 mir the course is offered an	nutes per candidate)	one candidate each (approx. 15 emester			

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10-M=VK-	Complex Ge	ometry								
GE-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			V (4) + Ü (2) Module taught in: German and/or English						
	Method of as	ssessment	minu Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=VPD-	Partial Diffe	rential Equa	tions	of Mathematical Ph	nysics					
P-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			+ Ü (2) ıle taught in: Germa	an and/or English					
	Method of as	ssessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=V-	Pseudo Riemannian and Riemannian Geometry									
PRG-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (4) + Ü (2) Module taught in: German and/or English							
	Method of as	ssessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=AF-	Functional A	nalysis								
AN-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			+ Ü (2) ıle taught in: Germa	an and/or English					
	Method of as	ssessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						

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10-M=VAD-	Applied Diffe	rential Geo	ometry	1						
G-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			+ Ü (2) ıle taught in: Germa	an and/or English					
	Method of as	sessment	minu Asse: Lang	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus						
10-M=VG-	Giovanni Pro	di Lecture 🤅	Select	ed Topics (Master)						
PSin-152-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			+ Ü (2) Jle taught in: Englis	h					
	Method of as	sessment	minu Asse: Lang	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus						
10-M=VG-	Giovanni Pro	di Lecture /	Advanced Topics (Master)							
PAin-152-mo1	ECTS 10	Duratio								
	Courses		V (4) + Ü (2) Module taught in: English							
	Method of as	sessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 2 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus							
10-	Giovanni Pro	di Lecture /	Moder	n Topics (Master)						
M=VGPMin-152- mo1	ECTS 10 Duratio			1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (4) + Ü (2) Module taught in: English							
	Method of as	sessment	minu Asse: Lang	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus						

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10-M=MP1-161-	Analys	is and G	eometry	of Clas	of Classical Systems							
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	es	-	V (4) + Modu	- Ü (2) le taught in: Germa	in and/or English						
	Metho	d of asse	essment	minut Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German or English creditable for bonus							
10-M=MP2-161-	Algebr	llgebra and Dynamics of Quantum Systems										
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course			V (4) + Modu	- Ü (2) le taught in: Germa	n and/or English						
	Method of assessment			minut Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German or English creditable for bonus							
10-M=VGFT-192-	Geometric Complex Analysis											
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: German and/or English								
	Metho	d of asse	essment	minut Langu Asses	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus							
10-M=V-	Select	ed Topic	s in Num	erical a	nd Applied Mathe	matics						
NAM-192-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: German and/or English								
	Method of assessment			a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus								

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10-M=V-	Crypto	graphy	/Coding T	heory	eory						
KRY-192-m01	ECTS	10	Duratio	n	1 semester Method of grading numerical grade Modul level graduate						
	Course	S			+ Ü (2) ıle taught in: Germa	in and/or English					
	Metho	d of ass	essment	minu Langi Asses	tes) or c) oral exam Lage of assessment	ination in groups (gro : German and/or Eng	ups of 2, 15 minutes per lish	candidate)	one candidate each (approx. 20 and in the subsequent semester		
10-M=V-	Compu	iter Alg	ebra								
CAL-192-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	:S			+ Ü (2) ıle taught in: Germa	in and/or English					
	Metho		essment	minu Langi Asses	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semeste creditable for bonus						
10-M=VAZ-	Algorit	hmic N	umber The	eory							
T-192-m01	ECTS	ECTS 10 Duratio									
	Course	Courses			V (4) + Ü (2) Module taught in: German and/or English						
	Metho	d of ass	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent sem creditable for bonus							
10-M=VA-	Algebr	aic Geo	metry								
GE-192-m01	ECTS 10 Duratio		1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (4) + Ü (2) Module taught in: German and/or English							
	Method of assessment			minu Langi Asses	tes) or c) oral exam uage of assessment	ination in groups (gro : German and/or Eng	ups of 2, 15 minutes per lish	candidate)	one candidate each (approx. 20 and in the subsequent semester		

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10-M=AAZ-	Analyt	ic Numb	per Theory	,						
T-222-m01	ECTS	10	Duratio	n	1 semester Method of grading numerical grade Modul level graduate					
	Course	S			+ Ü (2) Ile taught in: Gern	nan and/or English				
	Metho	d of ass	essment	b) ora c) ora Asses Langi	al examination of ا ا examination in ا ssment offered: In	(approx. 90 to 120 minu one candidate each (app groups (groups of 2, 15 m the semester in which t nt: German or English	rox. 20 minutes) or inutes per candidate)	)	emester	
10-M=VIP2-222-	Inverse	e Proble	ems 2							
m01	ECTS	5	Duratio	n 1 semester Method of grading numerical grade M				Modul level	undergraduate	
	Course	S			+ Ü (1) Ile taught in: Gern	nan and/or English				
	Metho	d of ass	essment	b) ora c) ora Asses Langi	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus					
10-M=VAFT-222-	Selecte	ed Topi	cs in Com	plex A	nalysis					
m01	ECTS 5 Duratio							Modul level	graduate	
	Course	S		V (3) + Ü (1) Module taught in: German and/or English						
	Method of assessment b) oral examination (approx. 60 to 90 minutes, us b) oral examination of one candidate each (approx. 1 c) oral examination in groups (groups of 2, approx. 10 Assessment offered: In the semester in which the con Language of assessment: German or English creditable for bonus							andidate)	emester	
10-M=AAM-	Selecte	ed Topi	cs in Math	emati	cal Logic					
L-242-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level		
	Courses			V (3) + Ü (1) Module taught in: German and/or English						
	Method of assessment			a) written examination (approx. 60 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English creditable for bonus						

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10-M=A-	Harmonic Ana	lysis									
HAN-242-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level				
	Courses			+ Ü (2) lle taught in: Germaı	n and/or English						
	Method of ass	sessment	b) ora c) ora Asses Langu	a) written examination (approx. 60 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English creditable for bonus							
Subfield Research	n Groups and Seminars (10-60 ECTS credits)										
10-M=GAL-	Research in G	roups - Al	gebra								
G-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		Modu	+ S (2) lle taught in: Germai	n and/or English						
	Method of ass		Asses Langu	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=G-	Research in Groups - Discrete Mathematics										
DIM-161-m01	ECTS 10 Duratio			1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		V (2) + S (2) Module taught in: German and/or English								
	Method of ass	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=GD-	Research in G	roups - Dy	/namic	al Systems and Con	trol Theory						
SC-242-m01	ECTS 10	Duratio						graduate			
	Courses		V (2) + S (2) Module taught in: German and/or English								
	Method of ass		talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=G-			omplex Analysis								
COA-161-m01	ECTS 10 Duratio			1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: German and/or English							
	Method of ass	sessment	Asses	50 to 120 minutes) sment offered: In th lage of assessment:		the course is offered and in th	ie subsequent se	emester			

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10-M=GGM-	Resear	rch in G	in Groups - Geometry and Topology								
T-161-m01	ECTS 10 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	25			+ S (2) ule taught in: German	n and/or English					
	Metho	d of ass	essment	Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English						
10-M=GM-	Resear	rch in G	roups - Ma	athem	atics in Context						
CX-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es			+ S (2) Jle taught in: German	n and/or English					
	Metho	d of ass	essment	Asse	60 to 120 minutes) ssment offered: In th uage of assessment:		the course is offered and in	the subsequent se	emester		
10-M=GM-	Resear	r <mark>ch in G</mark> i	roups - Ma	athem	atics in the Sciences	5					
SC-161-m01	ECTS 10 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: German and/or English							
	Method of assessment		Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=G-	Resear	rch in G	roups - M	easure and Integral							
MAI-161-m01	ECTS 10 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: German and/or English							
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=GN-	Resear	r <mark>ch in</mark> Gi	roups - Νι	umerical Mathematics and Applied Analysis							
MA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es			V (2) + S (2) Module taught in: German and/or English						
	Method of assessment			Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English						

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10-M=GROC-161-	Resear	Research in Groups - Robotics, Optimization and Control Theory											
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				V (2) + S (2) Module taught in: German and/or English								
	Method of assessment			Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GT-	Resear	rch in Gr	oups - Tii	me Sei	ries Analysis								
SA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	es			V (2) + S (2) Module taught in: German and/or English								
	Metho	d of ass	essment	Asse	alk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester anguage of assessment: German or English								
10-M=G-	Resear	rch in Gr	oups - St	atistic									
STA-161-m01	ECTS 10 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses				+ S (2) Ile taught in: German	n and/or English							
	Method of assessment			Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GNTH-161-	Resear	rch in Gr	oups - Nu	ımber	nber Theory								
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + S (2) Module taught in: German and/or English									
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English									
10-M=GD-	Resear	rch in Gr	oups - Di	fferential Geometry									
GE-161-m01	ECTS 10 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses			V (2) + S (2) Module taught in: German and/or English									
	Metho	d of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English									

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10-M=GDF-	Resea	Research in Groups - Deformation Quantization											
Q-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	es			V (2) + S (2) Module taught in: German and/or English								
	Metho	d of ass	essment	Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GN-	Resea	rch in G	roups - No	on-line	n-linear Analysis								
LA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	es			V (2) + S (2) Module taught in: German and/or English								
	Metho	d of ass	essment	Asse	alk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GO- PA-161-m01	Resea	Research in Groups - Operator Algebras											
	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ S (2) ule taught in: Germa	n and/or English							
	Method of assessment			Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=SAD-	Seminar in Applied Differential Geometry												
G-161-m01	ECTS 5 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses			S (2) Module taught in: German and/or English									
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English									
10-M=SAL-	Semin	ar in Alg	gebra										
G-161-m01	ECTS 5 Duratio			1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses			S (2) Module taught in: German and/or English									
	Metho	d of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English									

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10-M=SD-	Semina	Seminar in Dynamical Systems and Control Theory												
SC-242-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	S	_	S (2) Modu	S (2) Module taught in: German and/or English									
	Methoo	d of ass	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English									
10-M=S-	Semina	ar in Coi	mplex An	alysis										
COA-161-m01	ECTS 5 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	S		S (2) Modu										
	Methoo	d of ass	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English									
10-M=S- FIM-161-m01	Semina	ar in Fin	ancial an	Insurance Mathematics										
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	S		S (2) Modu	lle taught in: Germai	n and/or English								
	Method of assessment			Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English									
10-M=S-	Seminar in Geometry and Topology													
GTO-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses			S (2) Module taught in: German and/or English										
	Methoo	d of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English										
10-M=SGP-		ni Prod	i Seminar	(Master)										
Cin-152-m01	ECTS 5 Duratio			1 semester	Method of grading	numerical grade	Modul level	graduate						
	Course	S		S (2) Module taught in: English										
	Methoo	d of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English										

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10-M=SID-	Interdisciplinary Seminar											
C-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5	-	S (2) Modu	S (2) Module taught in: German and/or English							
	Method	l of ass	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=SM-	Semina	r Math	ematics i	n the S	the Sciences							
SC-161-m01	ECTS 5 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5		S (2) Modu								
	Method	l of ass	essment	Asses	alk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=SN- MA-161-m01	Seminar in Numerical Mathematics and Applied Analysis											
	ECTS 5 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			S (2) Modu	lle taught in: Germa	n and/or English						
	Method of assessment			Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=SOP-	Seminar in Optimization											
T-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			S (2) Module taught in: German and/or English								
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=S-	Semina	r in Sta	tistics									
STA-161-m01	ECTS 5 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	5		S (2) Module taught in: German and/or English								
	Method	l of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								

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10-M=SN-	Semina	Seminar in Non-linear Analysis											
LA-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	es		S (2) Modi									
	Metho	d of ass	essment	Asse	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=SA-	Semin	ar Appli	ed Mathe	matic	5								
MA-192-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		S (2) Modi	S (2) Module taught in: German and/or English								
	Metho	d of ass	essment	Lang	alk (approx. 60 to 120 minutes) anguage of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester								
10-M=GLIE-192-	Resear	Research in Groups - Lie Theory											
m01	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	!S			+ S (2) ule taught in: Germa	n and/or English							
	Method of assessment			Lang	talk (approx. 60 to 120 minutes) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester								
10-M=GAD-	Research in Groups - Applied Differential Geometry												
G-192-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + S (2) Module taught in: German and/or English									
	Metho	d of ass	essment	talk (approx. 60 to 120 minutes) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester									
10-M=G-	Resear	rch in Gi	roups - M	athematical Physics									
MAP-192-m01	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (2) + S (2) Module taught in: German and/or English									
	Metho	d of ass	essment	talk (approx. 60 to 120 minutes) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester									

10-M=GHST-222-	Resear	Research in Groups - Higher Structures										
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	:S			V (2) + S (2) Module taught in: German and/or English							
	Metho	d of ass	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=G-	Resear	rch in G	roups - Fu	nction	al Analysis							
FAN-222-m01	ECTS 10 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S			V (2) + S (2) Module taught in: German and/or English							
	Metho	d of ass	sessment	Asses	alk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Anguage of assessment: German or English							
10-M=GIN- P-222-m01	Resear	rch in G	roups - In	verse F	erse Problems							
	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				+ S (2) Ile taught in: Germa	in and/or English						
	Method of assessment			Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=GM-	Research in Groups - Mathematical Logic											
LO-242-mo1	ECTS 10 Duratio		Duratio	n	1 semester	Method of grading	numerical grade	Modul level				
	Courses			V (2) + S (2) Module taught in: German and/or English								
	Metho	d of ass	sessment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=SM-	Semin	ar Math	ematical	Logic								
LO-242-m01	ECTS 5 Duratio		n	1 semester	Method of grading	numerical grade	Modul level					
	Courses			S (2) Module taught in: German and/or English								
	Metho	d of ass	sessment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								

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Subfield Learning a	Subfield Learning and Teaching (0-10 ECTS credits)										
10-M=EL-	Learnin	ng by Te	aching 1								
T1-192-m01	ECTS 5 Duration			n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Course	S		Ü (2)	•						
	Method of assessment			Assessment of tutoring activities by supervising lecturers or exercise supervisors (1 to 2 teaching units) Language of assessment: German							
	Additio	nal Info	rmation	Appli	cation and selection	with the teaching co	ordinator for mathematics				
10-M=EL-	Learnin	ig by Te	aching 2								
T2-192-m01	ECTS	5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Course	S		Ü (2)	) (2)						
	Methoo	d of asse	essment		Assessment of tutoring activities by supervising lecturers or exercise supervisors (1 to 2 teaching units) Language of assessment: German						
	Additio	nal Info	rmation	Application and selection with the teaching coordinator for mathematics							
Subfield Optional Application Subject and/or Intership (o-30 ECTS credits)											
Application Subject Biology											
07-MS2BI-152-m01	BI-152-mo1 Bioinformatics										
	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			V (2) + S (1) Module taught in: German and/or English							
	Method of assessment			a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English							
07-MS2BIF1-152-	Bioinfo	rmatics	F1								
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			P (14) + S (1) Module taught in: German and/or English							
	Method of assessment			<ul> <li>a) written examination (30 to 60 minutes, including multiple choice questions) or</li> <li>b) log (15 to 30 pages) or</li> <li>c) oral examination of one candidate each (30 to 60 minutes) or</li> <li>d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or</li> <li>e) presentation (20 to 45 minutes)</li> <li>Language of assessment: German and/or English</li> </ul>							

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07-MS2BIF2-152-	Bioinformatics F2										
m01	ECTS	15	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Cours	es			P (29) + S (1) Module taught in: German and/or English						
	Metho	od of ass	essment	b) log c) ora d) ora e) pre	a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English						
07-MBI-B-152-m01	Bioinf	ormatics	B								
	ECTS	5	Duration	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Cours	es		V (2) Modu	le taught in: Germa	In and/or English					
	Metho	d of ass	essment	c) ora d) ora	l examination of on I examination in gro	e candidate each (30	dates (30 to 60 minutes)	is) or			
07-MS3S-152-m01	Syste	ms Biolo	gy				-				
	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cours	es		V (2) - Modu	+ S (1) le taught in: Germa	in and/or English					
	Metho	d of ass	essment	a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English							
07-MS3SYF1-152-	Syste	ms Biolo	gy F1								
m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cours	es		P (14) + S (1) Module taught in: German and/or English							
	Method of assessment			b) log c) ora d) ora e) pre	a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English						

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mo1       ECTS       15       Duration       1 semester       Method of grading       (not) successfully completed       Modul level       graduate         Courses       P (29) + S (1) Module taught in: German and/or English       Module taught in: German and/or English       Module taught in: German and/or English       Module taught in: German and/or English								
	P (29) + S (1) Module taught in: German and/or English							
Method of assessment a) written examination (30 to 60 minutes, including multiple choice questions) or								
b) log (15 to 30 pages) or								
	c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or							
e) presentation (20 to 45 minutes)	e) presentation (20 to 45 minutes)							
Language of assessment: German and/or English								
07-MS-B-152-mo1 Systems Biology B								
ECTS       5       Duration       1 semester       Method of grading       (not) successfully completed       Modul level       graduate								
Courses V (2) Module taught in: German and/or English								
Method of assessmenta) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English	d) oral examination in groups of up to 3 candidates (30 to 60 minutes)							
Application Subject Chemie								
08-PCM1a-161- Laser Spectroscopy								
mo1     ECTS     5     Duration     1 semester     Method of grading     numerical grade     Modul level     graduate								
CoursesS (2) + Ü (1)Module taught in: German or English	Module taught in: German or English							
Method of assessment a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minute Language of assessment: German and/or English	Language of assessment: German and/or English							
08-PCM1b-161- Advanced Physical Chemistry (Lab)								
mo1     ECTS     5     Duration     1 semester     Method of grading     (not) successfully completed     Modul level     graduate								
Courses P (4) Module taught in: German or English								
and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English								
Additional Information Additional information on module duration: block taught lab course with approx. 20 working days.	Additional information on module duration: block taught lab course with approx. 20 working days.							
08-PCM2-161-m01 Statistical Mechanics and Reaction Dynamics								
ECTS     5     Duration     1 semester     Method of grading     numerical grade     Modul level     graduate								
Courses S (2) + Ü (1) Module taught in: German or English								
Method of assessment a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) prox. 30 minutes) Language of assessment: German and/or English	s) or c) talk (ap-							
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08-PCM3-161-m01	Nanosca	Nanoscale Materials										
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5			S (2) + Ü (1)							
					le taught in: Germa							
	Method	ofasse	essment			pprox. 90 minutes) o	r b) oral examination of one ca	indidate each (a	pprox. 20 minutes) or c) talk (ap-			
					prox. 30 minutes) Language of assessment: German and/or English							
					able for bonus	, 0						
08-PCM4-161-m01	Ultrafas	st spect	roscopy	and qu	antum-control							
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5		S (2) · Modu	+ Ü (1) Ile taught in: Germa	n or English						
	Method	ofasse	essment			pprox. 90 minutes) o	r b) oral examination of one ca	indidate each (a	pprox. 20 minutes) or c) talk (ap-			
					30 minutes)		• •					
				-		German and/or Eng						
	other pr						3-PCM1b recommended.					
08-PCM5-161-m01				<u> </u>	olecular Assemblies		numerical grade	Modulloval	araduata			
				1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			S (2) + Ü (1) Module taught in: German or English								
	Method	ofasse	essment		a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (ap							
					prox. 30 minutes) Language of assessment: German and/or English							
08-PCM6-161-m01	Physica	l Chem	istry (Adv	_	_							
	<u> </u>	5	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	5	J	P (4)								
				Module taught in: German or English								
	Method	ofasse	essment	presentation (approx. 20 minutes) Language of assessment: German and/or English								
	Additior	nal Info	rmation	Addit	ional information or	n module duration: bl	ock taught lab course with app	prox. 20 working	g days.			
08-TCM2-161-m01	Basics a	and App	olications	of Qu	antum Chemistry							
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	;	•	S (2) ·	+ Ü (2)							
	Method of assessment			a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English								

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08-TCM3-161-m01	01 Numerical Methods and Programming										
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		S (2)	+ Ü (2)	· · · · · · · · · · · · · · · · · · ·					
	Metho	d of ass	essment						each (20 to 30 minutes) or c) oral		
						up to 3 candidates (a	pprox. 15 minutes per candida	ate) or d) log (ap	prox. 20 pages) or e) presentation		
				(approx. 30 minutes) Language of assessment: German and/or English							
08-TCM4-161-m01	Quanti	um Dyna	mice	Langu			1311				
		5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	-	Duration		+ Ü (2)		numencai giade	Modulilevei	giaduate		
			essment			noray on to 190 min	itac) or b) oral examination of	ono condidato (	each (20 to 30 minutes) or c) oral		
	Metho	u 01 ass	essment						prox. 20 pages) or e) presentation		
				(appr	ox. 30 minutes)	, ,					
				-	anguage of assessment: German and/or English						
08-TCM1-161-m01		ed Topic			Chemistry						
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		S (2) + Ü (2)							
	Method of assessment			a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation							
					ox. 30 minutes)	up to 3 candidates (a	ipprox. 15 minutes per candida	ate) or d) log (ap	prox. 20 pages) or e) presentation		
						German and/or Engl	ish				
08-TCAP1-161-m01	Theore	tical Ch	emistry -	-	t course quantum cl						
	ECTS	5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Course	S	<u> </u>	Ρ(5)							
	Metho	d of ass	essment	presentation (approx. 30 minutes)							
				Language of assessment: German and/or English							
							ock taught lab course with app	prox. 20 working	g days.		
08-TCAP2-161-m01	Theore	tical Ch	emistry -	Projec	t course quantum dy						
	ECTS	5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Course	S		P (5)	7.						
	Metho	d of ass	essment		ntation (approx. 30						
				-		German and/or Engl					
	Additional Information			Additional information on module duration: block taught lab course with approx. 20 working days.							

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10-I=SEM3-232-				Computer Science and Aerospace Computer Science Seminar 1 - Current Topics in Computer Science													
mo1	ECTS 5 Duration				1 semester	Method of grading	numerical grade	Modul level	graduate								
	Course	-	120.000	S (2) Modi													
	Methoo	d of ass	essment	puter	science	ges) and presentation nt: German and/or Eng		subsequent discussion	on a topic from the field of com-								
	Additio	onal Info	ormation		ses available for st ,GE,SEC,IN	udents of the Master's	programme Informatik	(Computer Science, 12)	o ECTS credits): AT,SE,IT,KI,ES,L-								
10-I=APR-212-m01	Advanc	ed Pro	gramming	5													
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate								
	Course	S		V (2)	+ Ü (2)		·	·	<u>,                                    </u>								
	Additional Information			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). creditable for bonus Language of assessment: German and/or English Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,													
				ES,GE,SEC													
10-LU-		1	Nobile Sy		-		1										
RI=AMS-232-m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate								
	Course	S			V (4) + Ü (2) Module taught in: German and/or English												
	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, KI, ES, LR, GE												

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10-I=A-	Algor	Algorithms for Geographic Information Systems										
GIS-232-m01	ECTS	5	Duratio	1	1 semester	Method of grading numerical gra	ade	Modul level	graduate			
	Cours	es		V (2) ·	+ Ü (2)			•				
			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								
					es available for stu	dents of the Master's programme In	ıformatik (Compu	ter Science, 120	ECTS credits): AT,KI,HCI,LR,IN			
10-I=AG-232-m01	· ·	utationa	l Geometi	-								
	ECTS	5	Duratio		1 semester	Method of grading numerical gra	ade	Modul level	graduate			
	Cours			V (2) ·								
			ormation	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 Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):								
	nuun		mation	AT,HCI,GE,IN								
10-I=APA-161-m01	Appro	ximatior	Algorith	ms								
	ECTS	5	Duration	n	1 semester	Method of grading numerical gra	ade	Modul level	graduate			
	Cours	es		V (2) ·	+ Ü (2)							
	Metho	od of ass	essment	If ann of one 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							
	Addit	ional Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,GE								

Automata The	Automata Theory								
ECTS 5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
Courses		V (2) -	+ Ü (2)						
		If ann of one date). credit Langu Asses	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 candidate). date). creditable for bonus						
		Focus	es available for stud	dents of the Master's	programme Informatik (Com	puter Science, 12	o ECTS credits): AT,IT,ES,HCI,GE		
			1	1	· · ·				
	Duratio			Method of grading	numerical grade	Modul level	graduate		
Method of ass	sessment	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							
		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): ES,LR							
	ser Interfa	ces							
ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
Courses		V (2) + Ü (2)							
Method of ass	sessment	Langu	Language of assessment: German and/or English						
	· · ·								
ECTS 5	Duratio			Method of grading	numerical grade	Modul level	graduate		
Courses									
		If ann of one date). credit Langu Asses	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). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following semester						
	ECTS       5         Courses       Method of ass         Method of ass       Additional Inf         Avionics Syst       5         Courses       Method of ass         Method of ass       Method of ass         Additional Inf       Method of ass         Additional Inf       Method of ass         Method of ass       5         Courses       Method of ass	Courses         Method of assessment         Additional Information         Avionics Systems         ECTS       5         Duration         Courses         Method of assessment         Additional Information         Additional Information         Additional Information         Multimodal User Interfa         ECTS       5         Duration         Multimodal User Interfa         ECTS       5         Method of assessment         Courses         Method of assessment         Courses         Method of assessment         Courses         Method of assessment         Method of assessment	ECTS5DurationCoursesV (2) -Method of assessmentwritteIf ann of one date). creditIf ann of one date). creditAdditional InformationFocusAvionics SystemsECTSECTS5DurationCoursesV (2) -Method of assessmentwritteIf ann of one date). Langu creditwritteAdditional InformationFocusAdditional InformationFocusAdditional InformationFocusCoursesV (2) -Method of assessmentFocusECTS5DurationCoursesV (2) -Method of assessmentpreseLangu creditcreditCoursesV (2) -Method of assessmentpreseLangu creditf assessmentMethod of assessmentwritteIf ann of one date). creditf angu creditLangu creditJAdditional Informationf assessmentMethod of assessmentpreseLangu creditJAdditional Informationf assessmentMethod of assessmentwritteIf ann of one date). creditcreditLangu AssesKitteAssesKitteAssesKitteAssesKitteAssesKitteAssesKitteAssesKitteAssesKitteAssesKitte <tr< td=""><td>ECTS5Duration1 semesterCoursesV (2) + Ü (2)Method of assessmentwritten examination (app If announced by the lectu of one candidate each (al date). creditable for bonus Language of assessment: Assessment offered: In the Additional InformationAdditional InformationFocuses available for stude Assessment offered: In the Additional InformationAdditional InformationFocuses available for stude (2)Method of assessmentV (2) + Ü (2)Method of assessmentWritten examination (app If announced by the lectu of one candidate each (al date). Language of assessment: creditable for bonusAdditional InformationFocuses available for stude (2) + Ü (2)Method of assessmentV (2) + Ü (2)Multimodal User InterfacesFocuses available for stude (2) + Ü (2)Method of assessment1 semesterCoursesV (2) + Ü (2)Meth</td><td>ECTS       5       Duration       1 semester       Method of grading         Courses       V (2) + Ü (2)         Method of assessment       written examination (approx. 6o to 120 minute If announced by the lecturer at the beginning of of one candidate each (approx. 20 minutes) or date). creditable for bonus Language of assessment: German and/or Engl Assessment offered: In the semester in which         Additional Information       Focuses available for students of the Master's         Avionics Systems       V (2) + Ü (2)         Method of assessment       Written examination (approx. 6o to 120 minute (If announced by the lecturer at the beginning of of one candidate each (approx. 20 minutes) or date). Language of assessment: German and/or Engl creditable for bonus         Additional Information       Focuses available for students of the Master's ES,LR         Multimodal User Interfaces       ECTS         ECTS       5       Duration         Courses       V (2) + Ü (2)         Method of assessment       presentation of project results (approx. 40 min Language of assessment: German and/or Engl creditable for bonus         Computability Theory       E         ECTS       5       Duration         ECTS       5       Duration         Method of assessment       reditable for bonus         Courses       V (2) + Ü (2)         Method of assessment       gremester</br></br></td><td>ECTS       5       Duration       1 semester       Method of grading       numerical grade         Courses       V (2) + Ü (2)       written examination (approx. 60 to 120 minutes).       If announced by the lecturer at the beginning of the course, the written exa of one candidate each (approx. 20 minutes) or an oral examination in grou date).         creditable for bonus       Language of assessment: German and/or English         Additional Information       Focuses available for students of the Master's programme Informatik (Com Avionics Systems         ECTS       5       Duration       1 semester       Method of grading       numerical grade         Courses       V (2) + Ü (2)       written examination (approx. 60 to 120 minutes).       If announced by the lecturer at the beginning of the course, the written exa of one candidate each (approx. 60 to 120 minutes).         Method of assessment       If announced by the lecturer at the beginning of the course, the written exa of one candidate each (approx. 20 minutes) or an oral examination in grou date).         Language of assessment: German and/or English       creditable for bonus         Additional Information       Focuses available for students of the Master's programme Informatik (Com ES,LR         Multimodal User Interfaces       ECTS       5       Duration       1 semester         ECTS       5       Duration       1 semester       Method of grading       numerical grade         <t< td=""><td>ECTS       5       Duration       1 semester       Method of grading       numerical grade       Modul level         Courses       V (2) + Ü (2)       written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidate date). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following sem         Additional Information       Focuses available for students of the Master's programme Informatik (Computer Science, 12         Avionics Systems       V (2) + Ü (2)         Method of assessment       written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes).         Additional Information       Focuses available for students of the Master's programme Informatik (Computer Science, 12 ES,LR         Multimodal User Interfaces       ECTS         ECTS       5       Duration       1 semester         Method of assessment       I semester       Method of grading       numerical grade       Modul level         Courses       V (2) + Ü (2)<!--</td--></td></t<></td></tr<>	ECTS5Duration1 semesterCoursesV (2) + Ü (2)Method of assessmentwritten examination (app If announced by the lectu of one candidate each (al date). creditable for bonus Language of assessment: Assessment offered: In the Additional InformationAdditional InformationFocuses available for stude Assessment offered: In the Additional InformationAdditional InformationFocuses available for stude (2)Method of assessmentV (2) + Ü (2)Method of assessmentWritten examination (app If announced by the lectu of one candidate each (al date). Language of assessment: creditable for bonusAdditional InformationFocuses available for stude (2) + Ü (2)Method of assessmentV (2) + Ü (2)Multimodal User InterfacesFocuses available for stude (2) + Ü (2)Method of assessment1 semesterCoursesV (2) + Ü (2)Meth	ECTS       5       Duration       1 semester       Method of grading         Courses       V (2) + Ü (2)         Method of assessment       written examination (approx. 6o to 120 minute If announced by the lecturer at the beginning of of one candidate each (approx. 20 minutes) or date). creditable for bonus Language of assessment: German and/or Engl Assessment offered: In the semester in which         Additional Information       Focuses available for students of the Master's         Avionics Systems       V (2) + Ü (2)         Method of assessment       Written examination (approx. 6o to 120 minute (If announced by the lecturer at the beginning of of one candidate each (approx. 20 minutes) or date). Language of assessment: German and/or Engl creditable for bonus         Additional Information       Focuses available for students of the Master's ES,LR         Multimodal User Interfaces       ECTS         ECTS       5       Duration         Courses       V (2) + Ü (2)         Method of assessment       presentation of project results (approx. 40 min 	ECTS       5       Duration       1 semester       Method of grading       numerical grade         Courses       V (2) + Ü (2)       written examination (approx. 60 to 120 minutes).       If announced by the lecturer at the beginning of the course, the written exa of one candidate each (approx. 20 minutes) or an oral examination in grou date).         creditable for bonus       Language of assessment: German and/or English         Additional Information       Focuses available for students of the Master's programme Informatik (Com Avionics Systems         ECTS       5       Duration       1 semester       Method of grading       numerical grade         Courses       V (2) + Ü (2)       written examination (approx. 60 to 120 minutes).       If announced by the lecturer at the beginning of the course, the written exa of one candidate each (approx. 60 to 120 minutes).         Method of assessment       If announced by the lecturer at the beginning of the course, the written exa of one candidate each (approx. 20 minutes) or an oral examination in grou date).         Language of assessment: German and/or English       creditable for bonus         Additional Information       Focuses available for students of the Master's programme Informatik (Com ES,LR         Multimodal User Interfaces       ECTS       5       Duration       1 semester         ECTS       5       Duration       1 semester       Method of grading       numerical grade <t< td=""><td>ECTS       5       Duration       1 semester       Method of grading       numerical grade       Modul level         Courses       V (2) + Ü (2)       written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidate date). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following sem         Additional Information       Focuses available for students of the Master's programme Informatik (Computer Science, 12         Avionics Systems       V (2) + Ü (2)         Method of assessment       written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes).         Additional Information       Focuses available for students of the Master's programme Informatik (Computer Science, 12 ES,LR         Multimodal User Interfaces       ECTS         ECTS       5       Duration       1 semester         Method of assessment       I semester       Method of grading       numerical grade       Modul level         Courses       V (2) + Ü (2)<!--</td--></td></t<>	ECTS       5       Duration       1 semester       Method of grading       numerical grade       Modul level         Courses       V (2) + Ü (2)       written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidate date). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following sem         Additional Information       Focuses available for students of the Master's programme Informatik (Computer Science, 12         Avionics Systems       V (2) + Ü (2)         Method of assessment       written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes). If announced by the lecturer at the beginning of the course, the written examination may be of one candidate each (approx. 20 minutes).         Additional Information       Focuses available for students of the Master's programme Informatik (Computer Science, 12 ES,LR         Multimodal User Interfaces       ECTS         ECTS       5       Duration       1 semester         Method of assessment       I semester       Method of grading       numerical grade       Modul level         Courses       V (2) + Ü (2) </td		

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07-BI-161-m01	Bioinformatics								
	ECTS 5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses		V (2) ·	+ Ü (2)					
	Method of ass	essment			rox. 60 to 120 minute				
			lf ann	ounced by the lectu	rer at the beginning	of the course, the written exami	ination may be	replaced by an oral examination s (approx. 15 minutes per candi-	
			date).		prox. 20 minutes) o	i an orat examination in groups	of 2 candidates	s (approx. 15 minutes per canui-	
			Langu	age of assessment:	German and/or Eng	lish			
			credit	able for bonus					
10-I=CB-161-m01	Compiler Cons	-1							
	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses			+ Ü (2)					
	Method of ass	essment			rox. 60 to 120 minute		ination may be	replaced by an evel even instian	
								replaced by an oral examination s (approx, 15 minutes per candi-	
			date).	of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date).					
			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): SE,IT,IS,GE						
10-I=DDB-212-m01	Deductive Data	abases	<u> </u>				-		
	ECTS 5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses	1	V (2) -	+ Ü (2)	1 0 0			10	
	Method of ass	essment			rox. 60 to 120 minute				
			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 date).		oprox. 20 minutes) o	r an oral examination in groups	of 2 candidates	s (approx. 15 minutes per candi-	
				able for bonus					
				_	German and/or Eng				
	Additional Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,KI						
10-I=EL-212-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	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). creditable for bonus						
			Language of assessment: German and/or English Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,HCI,GE						
	Additional Info	ormation	Focus	es available for stud	ients of the Master's	programme informatik (Compl	iter Science, 120	o ECIS credits): SE,II,KI,HCI,GE	

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10-l=ES-231-m01	Embedded Systems								
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses			+ Ü (2)					
				le taught in: Germa	-	、		_	
	Method of ass	essment			prox. 60 to 120 minutes		ination may be	replaced by an oral examination	
								s (approx. 15 minutes per candi-	
			date).						
			Language of assessment: German and/or English creditable for bonus						
	Additional Info	ormation		es available for stu ,ES,LR,GE	dents of the Master's p	programme Informatik (Compu	uter Science, 120	o ECTS credits):	
10-l=lR-212-m01	Information Re	etrieval							
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses		V (2) ·	+ Ü (2)					
	Method of ass	essment			prox. 60 to 120 minutes				
								replaced by an oral examination s (approx. 15 minutes per candi-	
			date).		pplox. 20 minutes) of	an oral examination in groups		s (approx. 15 minutes per canul-	
			credit	able for bonus					
					: German and/or Engli				
	Additional Info	_	Focus	es available for stu	dents of the Master's p	programme Informatik (Compu	uter Science, 120	o ECTS credits): IT,KI,HCI,GE	
10-HCl=3DUI-161-	3D User Interfa								
m01	ECTS 5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses		V (2) ·						
	Method of ass	essment		presentation of project results (approx. 30 minutes)					
	Language of assessment: German and/or English creditable for bonus								
10-I=KT2-212-m01									
	ECTS 5	Duratio	-	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses		V (2) ·	+ Ü (2)	•				
	Method of ass	essment			prox. 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   date).						
			creditable for bonus Language of assessment: German and/or English						
			Assessment offered: In the semester in which the course is offered and in the following semester						
	Additional Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,ES						

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10-l=Kl1-212-m01	Artificial Intelligence 1									
	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).						
					creditable for bonus Language of assessment: German and/or English					
		Additional Information			es available for stu	udents of the Master's programme Informatik (Co	mputer Science, 120	o ECTS credits): AT,SE,KI,HCI		
10-I=Kl2-212-m01	Artificial Intelligence 2									
	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate		
	Course	Courses			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). creditable for bonus Language of assessment: German and/or English						
				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,HCI,GE						
10-l=LVS-232-m01										
	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate		
	Course		_	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). Language of assessment: German and/or English creditable for bonus						
	Additio	nal Info	ormation	Focus AT,IT,		udents of the Master's programme Informatik (Co	mputer Science, 120	c ECTS credits):		

10-I=ML-212-m01	Mathematical	l Logic								
	ECTS 5	Duration	n 1 sen	nester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) + Ü (2)							
	Method of asso	essment	If announce of one cand date). creditable for Language o	itten examination (approx. 60 to 120 minutes). announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- ite). editable for bonus nguage of assessment: German and/or English assessment offered: In the semester in which the course is offered and in the following semester						
	Additional Info		Focuses ava AT,SE,KI,ES	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,ES						
10-I=MI-212-m01	Medical Inform	atics								
	ECTS 5	Duration		nester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) + Ü (2)							
	Method of asso		If announce of one cand date). creditable for Language o	editable for bonus nguage of assessment: German and/or English						
	Additional Information Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,HCI,GE									
10-I=PEB-182-m01	Performance E	ngineerin	g and Bench	Imarking						
	ECTS 5	Duration		nester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) + Ü (2) Module tau	ght in: Englisi	n					
	Method of asse	essment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus							
10-I=RAM-161-m01	Computer Arith	nmetic				·	<u> </u>			
	ECTS 5	Duration		nester	Method of grading	numerical grade	Modul level	graduate		
	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- date). Language of assessment: German and/or English creditable for bonus							
	Additional Info	rmation	Focuses ava AT,ES	ailable for stu	dents of the Master's	programme Informatik (Com	·			
Master's with 1 major Ma	thematics (2024)					JMU Würzburg • generated 30-Mä	ir-2024 • exam. reg. data	record 88 105 - - H 2024 page 37 / 57		

10-LU-	Roboti	CS 1										
RI=R01-232-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (2) + Ü (2) Module taught in: German and/or English							
	Metho	d of ass	sessment	lf anı of on date)	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							
	Additic	onal Info	ormation		ses available for st 5, LR, HCI, GE	tudents of the Master's p	orogramme Informatik (	(Computer Science, 120	ECTS credits):			
10-LU-	Roboti	Robotics 2										
RI=R02-232-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (4) + Ü (2) + P (1) Module taught in: German and/or English							
		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							
	Additic	onal Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): KI, ES, LR, HCI, GE								
10-l=ST-232-m01	Discrete Event Simulation											
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (2)	+ Ü (2)							
	Metho	d of ass	sessment	If ann of on date) Lang	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							
	Additic	onal Info	ormation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): T,KI,ES,GE,IN							

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10-HCI-PRIS-212-	Principle	es of Ir	nteractive	Syste	Systems							
m01	ECTS 4	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				+ Ü (2)	•		·				
					le taught in: Germ							
	Method	ofass	essment		written examination (approx. 90 minutes) or oral examination of one candidate each (approx. 30 minutes)							
						ne candidate each (ap t: German and/or Eng						
					ditable for bonus							
10-I=SAR-161-m01	Software	e Archi	itecture									
	ECTS 4	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) +	- + Ü (2)							
	Method	ofass	essment			prox. 60 to 120 minut						
					nnounced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination							
				date).	one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- re).							
				Langu	anguage of assessment: German and/or English							
			_		able for bonus							
	Addition	al Info	rmation			udents of the Master's	programme Informatik (Com	puter Science, 12	o ECTS credits):			
10-HCI=M-	Machina	Loorn	ing (for U	SE,IT,								
LUI-161-mo1			Duratio			Mathad of grading	num origol grodo	Madullaval	araduata			
	ECTS 4	)	Duration	V (2) -	1 semester	Method of grading	numencal grade	Modul level	graduate			
	Method	ofoco		. ,		vaculta (annexa va mi	nutac)					
	Method	01 855	essment	presentation of project results (approx. 40 minutes) Language of assessment: German and/or English								
				creditable for bonus								
10-l=VG-161-m01	Visualization of Graphs											
	ECTS 4	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) +	+ Ü (2)							
	Method	ofass	essment			prox. 60 to 120 minut						
									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).								
				Langu	lage of assessmen	t: German and/or Eng	lish					
					able for bonus							
	Addition	al Info	rmation		es available for sti HCI,GE	udents of the Master's	programme Informatik (Com	puter Science, 12	o ECTS credits):			

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10-I=AKA-232-m01	Selecte	d Topio	s in Algo	rithms	;						
	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	b) pra on or c) ora d) ora Lang	a) written examination (approx. 60 to 120 minutes) or b) practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussi bn on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus						
	Additional Information			Focu: AT	ses available for st	udents of the Master's programme Informatik	k (Computer Science, 12	o ECTS credits):			
10-I=AKT-232-m01	Selecte	ed Topio	cs in Theo	ry							
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (2)	+ Ü (2)						
				<ul> <li>b) practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) or</li> <li>c) oral examination of one candidate each (approx. 20 minutes) or</li> <li>d) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate)</li> <li>Language of assessment: German and/or English</li> <li>creditable for bonus</li> </ul>							
				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT							
10-I=SSS-232-m01		<u> </u>	- ·								
	ECTS	5	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (2) + Ü (2) Module taught in: English							
				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							
	Additio	nal Info	ormation	Focus SEC,I		udents of the Master's programme Informatik	k (Computer Science, 12	o ECTS credits): SE,KI,LR, HCI, ES,			

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Jino Marzolag Scholaton Jo Marzolag Scholaton Jo Marzolag	Master's with 1 major Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 105 - - H 2024	page 40 / 57

10-I=NLP-212-m01	Machi	ne Learr	ing for N	atural	tural Language Processing							
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	e	Modul level	graduate			
	Cours	es	•	V (2)	+ Ü (2)	· · ·		°	-			
			essment	If ann of on date) credit Langu	editable for bonus nguage of assessment: German and/or English							
			ormation			udents of the Master's programme Info	ormatik (Comput	ter Science, 12	o ECTS credits): AT,KI,HCI			
10-I=PM-212-m01		_	roject Ma	nagen	nent							
	ECTS	-	Duratio		1 semester	Method of grading numerical grade	e	Modul level	graduate			
	Cours			V (4)								
	Metho	od of ass	essment	If ann of on date) 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). creditable for bonus Language of assessment: German and/or English							
	other	prerequi	sites	We recommend completing module 10-I=PRJAK in parallel.								
	Additional Information			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,ES,LR,HCI,GE								
10-I=PRJAK-212-	· ·	t - Curre	nt Topics	in Con	in Computer Science							
m01	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	e	Modul level	graduate			
	Cours			P (4)								
	Method of assessment			Langu Asses be re	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 (Each project is offered one time only. 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)							
	Additi	onal Info	ormation	Focus R,HCI		udents of the Master's programme Info	ormatik (Comput	ter Science, 12	o ECTS credits): AT,SE,IT,KI,ES,L-			

10-I=STM-162-m01	NLP	and Te	ext Mining								
	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cour	ses		V (2) -	+ Ü (2)						
	Meth	nod of	assessment	lf ann of one date).	written 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). Language of assessment: German and/or English						
	Addi	tional	Information	Focus	ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, IT, HCI.						
10-I=SNA-232-m01	Stati	stical	Network Ana	lysis							
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cour	ses			+ Ü (2) le taught in: English						
				If ann of one date). Langu credit	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): IN							
10-I=MLN1-232-			earning for No	etwork	S 1						
m01	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cour	ses			+ Ü (2) le taught in: English	I					
			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: English creditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,SE,KI,HCI,IN							
	Audi	tional	mormation	rocus	es available for stud	ients of the master's	programme mormatik (Con	inputer Science, 120	D ECTS CIEVILS): AT, TT, SE, KI, HUI, IN		

10-l=MLN2-232-	Mach	ine Learı	ning for N	etwork	etworks 2						
m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cours	es			V (2) + Ü (2) Module taught in: English						
	Metho	od 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: English creditable for bonus						
			ormation	Focus	es available for stud	dents of the Master's	programme Informatik (Compu	uter Science, 120	<pre>D ECTS credits): AT,IT,SE,KI,HCI,IN</pre>		
10-I=M-		lingual N				1					
NLP-232-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cours	es			V (2) + Ü (2) Module taught in: German and/or English						
	Method of assessment			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: English Creditable for bonus						
10-l=QC-221-m01	Quan	tum Com	municatio	ons							
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cours	es			+ V (2) le taught in: English	1					
			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: English creditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): LR							
	Adult	ionat info	innation	rocus	es available for stud	uents of the master's	programme mormatik (Compl	ater Science, 120	J ECTS CIEUILS): LK		

10-I=RLCD-	Reinforcement	Learning	and C	omputational Decis	ion Making							
M-232-m01	ECTS 5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + Ü (2) Module taught in: German and/or English								
	Method of asso	essment	lf ann of one date) Langu	ounced by the lectu e candidate each (ap		of the course, the written exami r an oral examination in groups		replaced by an oral examination s (approx. 15 minutes per candi-				
10-I=MIR-232-m01	Music Informa	tion Retri	eval									
	ECTS 5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		Modu	(2) + Ü (2) odule taught in: German and/or English								
	Method of asso	essment	b) ora c) ora Langu	) written examination (approx. 60 to 120 minutes) or ) oral examination of one candidate each (approx. 20 minutes) or oral examination in groups of up to 3 candidates (approx. 15 minutes) anguage of assessment: German and/or English reditable for bonus								
10-I=RRS-232-m01	Remote Sensir	emote Sensing										
	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ Ü (2) Ile taught in: Germai	n and/or English							
	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 EnglishCreditable for bonus									
	Additional Info	rmation	possi	ble majors for MA 12	20 Computer Science:	: LR,IN						
10-I=OR-232-m01	<b>Operations Re</b>	search										
	ECTS 5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ Ü (2) lle taught in: Germaı	n and/or English							
	Method of ass		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 Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IN									
	Additional Info	rmation	Focus	es available for stud	dents of the Master's	programme informatik (Compu	iter Science, 120	D ECIS credits): IN				

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10-l=El1-232-m01	Energy	Inform	atics 1					,					
	ECTS	5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (2) -				•					
					Nodule taught in: German and/or English vritten examination (approx. 60 to 120 minutes).								
				If ann of one 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								
	Additic	onal Info	ormation	Focus	ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IN								
Application Subjec	t Physik	Σ.											
11-BSV-161-m01	Image	and Sig	nal Proce	ssing i	n Physics								
	ECTS	6	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			(2) + Ü (2) Iodule taught in: German or English								
	Metho	d of ass	essment	amina on/ta If a wi form o the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								
11-PMM-161-m01	Physic	s of Adv	anced Ma	terials	;								
	ECTS	6	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) - Modu	⊦ R (1) le taught in: Germa	n or English							
	Method of assessment				written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								

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11-SPI-161-m01	Spintro	onics										
	ECTS	6	Duratio	n	1 semester	Method of grading numerical g	grade	Modul level	graduate			
	Course	S			+ R (1) Ile taught in: Gerr	man or English						
	Method of assessment			amina on/ta If a w form the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-FKS-161-m01		<u> </u>	ectrocopy									
	ECTS	6	Duratio		1 semester	Method of grading numerical g	grade	Modul level	graduate			
	Course	!S			+ R (1) Ile taught in: Gerr	man or English						
	Metho	1 of ass	essment	amina on/ta If a w form the le Asses	ation in groups (g ilk (approx. 30 mi ritten examinatio of an oral examin ecturer must infor ssment offered: Ir	approx. 90 to 120 minutes) or oral exa groups of 2, approx. 30 minutes per c inutes). on was chosen as method of assessm nation of one candidate each or an ora rm students about this by four weeks n the semester in which the course is ent: German and/or English	candidate) or proje nent, this may be c ral examination in g prior to the origina	ct report (appro hanged and ass groups. If the m al examination	ox. 8 to 10 pages) or presentati- sessment may instead take the ethod of assessment is changed, date at the latest.			
11-MAG-161-m01	Magne	tism										
	ECTS	6	Duratio		1 semester	Method of grading numerical g	grade	Modul level	graduate			
	Course	S			+ R (1) Ile taught in: Gerr	man or English						
	Metho	d of ass	essment	amina on/ta If a w form the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							

11-HNS-161-m01	Optical	l Prope	rties of Se	micor	nductor Nanostru	ctures						
	ECTS	6	Duratio	n	1 semester	Method of grading numerical grad	de	Modul level	graduate			
	Course	S			+ R (1) ule taught in: Ger	man or English						
				amin on/ta If a w form the le Asse Lang	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-ASM-161-m01		ls of Ol	bservatio	nal As	tronomy							
	ECTS	6	Duratio		1 semester	Method of grading numerical grad	de	Modul level	graduate			
	Course	S			+ R (1) ule taught in: Ger	man or English						
	Method	1 01 855	sessment	amin on/ta If a w form the la Asse	ation in groups ( alk (approx. 30 m vritten examinatic of an oral examir ecturer must infor ssment offered: 1	approx. 90 to 120 minutes) or oral exami groups of 2, approx. 30 minutes per can inutes). on was chosen as method of assessmen nation of one candidate each or an oral e rm students about this by four weeks pri In the semester in which the course is of ent: German and/or English	ndidate) or projec nt, this may be ch examination in g rior to the origina	t report (appro anged and ass roups. If the m l examination	ox. 8 to 10 pages) or presentati- sessment may instead take the ethod of assessment is changed, date at the latest.			
11-TPE-161-m01	Experin	nental	Particle P	hysics	5							
	ECTS	6	Duratio		1 semester	Method of grading numerical grad	de	Modul level	graduate			
	Course	S			+ R (1) ule taught in: Ger	man or English						
	Methoo	l of ass	sessment	amin on/ta If a w form the la Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							

11-ASP-161-m01	Introdu	iction t	o Space P	hysics								
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ R (1) Jle taught in: Gerr	man or English						
	Method	l of ass	sessment	amin on/ta If a w form the le Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-MAS-161-m01			ngth Astro				1					
	ECTS	6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ R (1) Jle taught in: Gerr	man or English						
	Method	1 of ass	sessment	amin on/ta If a w form the le Asse	ation in groups (g alk (approx. 30 mi ritten examinatio of an oral examin ecturer must infor ssment offered: Ir	groups of 2, approx. 30 r inutes). In was chosen as metho nation of one candidate of m students about this b	ninutes per candidate d of assessment, this each or an oral examiny four weeks prior to to the course is offered	e) or project report (appro may be changed and ass				
11-QM2-161-m01	Quantu	im Mec	hanics II									
	ECTS	8	Duratio		1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Course	S			+ R (2) Jle taught in: Gerr	man or English						
	Methoo	l of ass	sessment	amin on/ta If a w form the le Asse	ation in groups (g alk (approx. 30 mi ritten examinatio of an oral examin ecturer must infor ssment offered: Ir	groups of 2, approx. 30 r inutes). In was chosen as metho nation of one candidate of m students about this b	ninutes per candidate d of assessment, this each or an oral examiny four weeks prior to to the course is offered	e) or project report (appro may be changed and ass				

11-RTT-161-m01	Theory	of Rela	tivity									
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ R (1) Jle taught in: Gen	man or English						
	Method	1 of ass	essment	amin on/ta If a w form the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-PKS-161-m01			nplex Sys									
		6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ R (2) ule taught in: Geri	man or English						
	Methoo	1 OF ASS	essment	amin on/ta If a w form the le Asses	ation in groups (g alk (approx. 30 mi ritten examinatio of an oral examin ecturer must infor ssment offered: II	groups of 2, approx. 30 m inutes). on was chosen as methoc	inutes per candidate) l of assessment, this r ach or an oral examin / four weeks prior to th he course is offered a	or project report (appro may be changed and ass ation in groups. If the m ne original examination o				
11-TFK-161-m01	Theore	tical So	lid State	Physic	:s							
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ R (2) ule taught in: Gen	man or English						
	Methoo	d of ass	essment	amin on/ta If a w form the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							

11-TFK2-161-m01	Theore	tical Sc	lid State	Physic	 IS 2								
	ECTS	8	Duratio	n	1 semester	Method of grading numerical gra	ade	Modul level	graduate				
	Course	S			V (4) + R (2) Module taught in: German or English								
				amin on/ta If a w form the le Asses Lang	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English <b>5 Science (DFT)</b>								
11-CMS-161-m01			_										
	ECTS	8	Duratio		1 semester	Method of grading numerical gra	ade	Modul level	graduate				
	Course	'S			+ R (2) ule taught in: Ger	man or English							
	Metho	L OF ASS	essment	amin on/ta If a w form the le Asses	ation in groups (g alk (approx. 30 m vritten examinatio of an oral examin ecturer must infor ssment offered: II	approx. 90 to 120 minutes) or oral examples groups of 2, approx. 30 minutes per ca- inutes). In was chosen as method of assessme nation of one candidate each or an ora rm students about this by four weeks p n the semester in which the course is o ent: German and/or English	andidate) or projec ent, this may be cl al examination in g prior to the origina	ct report (appro hanged and ass groups. If the m al examination o	ox. 8 to 10 pages) or presentati- sessment may instead take the ethod of assessment is changed, date at the latest.				
11-KFT-161-m01	Confor	mal Fie	ld Theory										
	ECTS	6	Duratio		1 semester	Method of grading numerical gra	ade	Modul level	graduate				
	Course	S			+ R (1) ule taught in: Ger	man or English							
	Methoo	d of ass	essment	amin on/ta If a w form the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								

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11-KFT2-161-m01	Confor	mal Fiel	d Theory	2									
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) - Modu	+ R (1) Ile taught in: Gern	nan or English		·					
				amina on/ta If a wi form o the le Asses Langu	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								
11-CRP-161-m01			-		itical Phenomena								
	ECTS	6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) - Modu	+ R (1) Ile taught in: Gern	nan or English							
	Method	1 of asse	essment	amina on/ta If a wi form o the le Asses	ation in groups (g lk (approx. 30 mi ritten examination of an oral examina cturer must inforn ssment offered: In	roups of 2, approx. 30 n nutes). n was chosen as methoc ation of one candidate e m students about this by	ninutes per candidate d of assessment, this each or an oral examir y four weeks prior to t the course is offered a	) or project report (appro may be changed and ass					
11-BWW-161-m01	Bosoni	sation a	and Intera	ictions	in One Dimensio	'n							
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) - Modu	+ R (1) Ile taught in: Gern	nan or English							
	Methoo	1 of asse	essment	amina on/ta If a wi form o the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								

11-GGD-161-m01	Introduct	ion to Gauge/	Gravity	/ Duality				
	ECTS 8	B Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses			+ R (2) ule taught in: Germ	an or English			
	Method c	of assessment	amin on/ta If a w form the le	approx. 30 minutes) or oral ex- x. 8 to 10 pages) or presentati- sessment may instead take the ethod of assessment is changed, date at the latest. emester				
11-AKM-161-m01	Cosmolo	gy						
	ECTS 6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses			+ R (1) ule taught in: Germ	an or English			
	Method C	of assessment	amin on/ta If a w form the le Asse	ation in groups (gro alk (approx. 30 min rritten examination of an oral examina ecturer must inform ssment offered: In	bups of 2, approx. 30 n utes). was chosen as methor tion of one candidate e students about this b	ninutes per candidate d of assessment, this each or an oral exami y four weeks prior to the course is offered	e) or project report (appro may be changed and ass	
11-AST-161-m01	Theoretic	al Astrophysic	s					
	ECTS 6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses			+ R (2) ule taught in: Germ	an or English			
	Method c	of assessment	amin on/ta If a w form the le Asse	ation in groups (gro alk (approx. 30 min rritten examination of an oral examina ecturer must inform ssment offered: In	oups of 2, approx. 30 n utes). was chosen as methor tion of one candidate e students about this b	ninutes per candidate d of assessment, this each or an oral exami y four weeks prior to the course is offered	e) or project report (appro may be changed and ass	

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11-APL-161-m01	High E	nergy A	strophysi	cs	_		_					
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	25			+ R (1) Jle taught in: Ger							
	Methoo	d of ass	sessment	amin on/ta If a w form the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-QFT2-161-m01	-		d Theory I									
	ECTS	8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	25			+ R (2) ule taught in: Ger	man or English						
	Method	d of ass	sessment	amin on/ta If a w form the le Asses	ation in groups (g alk (approx. 30 m ritten examinatic of an oral examir ecturer must infor ssment offered: I	groups of 2, approx. 30 inutes). on was chosen as metho nation of one candidate rm students about this b	minutes per candidate od of assessment, this each or an oral examin by four weeks prior to t the course is offered a	e) or project report (appro may be changed and ass				
11-TEP-161-m01	Theore	etical Ele	ementary	Partic	le Physics							
	ECTS	8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	2S			+ R (2) ule taught in: Ger	man or English						
	Metho	d of ass	sessment	amin on/ta If a w form the le Asses	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							

11-ATTP-161-m01	Selected Topics of Theoretical Elementary Particle Physics											
	ECTS 6 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses Method of assessment				V (3) + R (1) Module taught in: German or English							
				written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								
11-BSM-161-m01	Models	Models Beyond the Standard Model of Elementary Particle Physics										
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English								
				written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								
11-FK2-201-m01	Solid State Physics 2											
	ECTS	8	Duratio	-	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (4) + R (2) Module taught in: German or English								
			essment	written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exami- nation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
	other p	orerequi	sites	Appro	oval from examination	on committee require	d.					

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11-HPH-201-m01	Semiconductor Physics											
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exami- nation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
11-FFK-201-m01		<u> </u>	Solid St		<u>ysics</u>							
		8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (4) + R (2) Module taught in: German or English							
	Method	1 of ass	essment	nation (appr If a w form the le Langu	written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exami- nation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-QIC-201-m01	Advanced Theory of Quantum Computing and Quantum Information											
	ECTS 6 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English								
	Methoo	d of ass	essment	written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exami- nation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								

11-TEFK-201-m01	Topological Effects in Solid State Physics												
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + R (1) Module taught in: German or English									
	Method	1 of ass	essment	written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exami- nation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester									
11-PTS-201-m01	Phenor	Phenomenology and Theory of Superconductivity											
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English									
				nation (appr If a w form the le Langu	written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral on ation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is chosen the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
11-QFT1-201-m01	Quantum Field Theory I												
	ECTS	8	Duration	·	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) + R (2) Module taught in: German or English									
			essment	written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exami- nation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester									
	other p	orerequi	sites	Appro	val from examinatio	on committee require	d.						

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11-SLQ-232-m01	Black Holes											
	ECTS	6	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (3) + R (1)								
					le taught in: Germa	n or English						
	Method	l of asse	essment	<ul> <li>a) written examination (approx. 90 to 120 minutes) or</li> <li>b) oral examination of one candidate each (approx. 30 minutes) or</li> <li>c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or</li> <li>d) project report (approx. 8 to 10 pages) or</li> <li>e) presentation/talk (approx. 30 minutes).</li> <li>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</li> <li>Language of assessment: German and/or English</li> </ul>								
				Assessment offered: In the semester in which the course is offered and in the following semester								
Internship	<u> </u>			1								
10-M=E-	Internship Mathematics											
PRK-161-m01	ECTS 10 Duratio		Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			P (o)								
	Method of assessment			a) report on practical course (15 to 30 pages) or b) talk (30 to 60 minutes)								
	other p	rerequis	sites	In advance, please consult with a lecturer who agrees to be your supervisor.								
Thesis (30 ECTS cro	edits)											
10-M=MAAR-161-	Master	Thesis	Mathema	atics								
m01	ECTS 30 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		No courses assigned to module								
	Method of assessment											
				Registration and assignment of topic in consultation with supervisor.								
		<u> </u>	•.	-	Language of assessment: German or English							
	other prerequisites			The supervisor may make the successful completion of certain modules that are relevant for the respective topic a prerequisite for the assignment of the topic.								
					the assignment of t	ne topic.			1			