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## **Annex SFB**

## Studienfachbeschreibung (subject description, SFB) for the subject Computational 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, $\mathbf{\ddot{U}}$ = 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: (L)ASPO = general academic and examination regulations (for teaching-degree programmes), FSB = subject-specific provisions, SFB = 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 (2024-19)

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	Module title									
	ECTS		Duration	(in semesters)	Method of grading		Module level				
	Courses		To be sp	b 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	ssessme	ent								
	Only after su completion of		l if applica	ble							
	Other prereq	uisites	if applica	if applicable							
	Participants on of places		ocati- if applica	ble							
	Additional in	Additional information		if applicable							
	Referred to in	n LPO I	if applica	ble (examination re	gulations for teachin	g-degree programmes)					

<b>Compulsory Election</b>	ves (90 E	CTS cre	dits)									
Subfield Numerica	l Mathem	natics a	nd Optim	izatio	ı (30-60 ECTS cred	its)						
10-M=AAAN-161-	Applied Analysis											
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5			V (4) + Ü (2) Module taught in: German and/or English							
	Method	l of asso	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							
10-M=VOP-	Selecte	d Topic	s in Opti	mizatio	on							
T-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				+ Ü (2) Ile taught in: Germa	an and/or English						
				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=VMPH-161-	Selected Topics in Mathematical Physics											
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 assessment			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=AOP-	Basics	in Optir	nization									
T-161-m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5		V (4) + Ü (2) Module taught in: German and/or English								
	Method of assessment			minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 ninutes) 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 anguage of assessment: German or English creditable for bonus							

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 3 / 57

10-M=V-	Mathematical Continuum Mechanics											
KOM-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (3) + Ü (1) Module taught in: German and/or English							
	Metho	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=ANG-	Numer	ic of La	rge Syste	ms of I	Equations							
G-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (2) ıle taught in: Gern	nan and/or English	·	·				
	Metho	d of ass	essment	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=VN-	Numeric of Partial Differential Equations											
PE-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								
	Metho	d of ass	essment	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=VOST-161-	Optima	al Contr	ol									
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	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							

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 4 / 57

10-M=VI-	Inverse	e Proble	ms 1									
PR-222-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (3) + Ü (1) Module taught in: German and/or English							
			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								
10-M=VIP2-222-	Inverse	e Proble	ems 2									
m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Course	S			V (3) + Ü (1) Module taught in: German and/or English							
	Metho	d of ass	essment	b) ora c) ora 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							
10-M=V-	Select	Selected Topics in Numerical and Applied Mathematics										
NAM-192-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								
	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								
Subfield Mathemat	t <b>ics (10-</b> /	40 ECTS	credits)									
10-M=AAL-	Topics	in Alge	bra									
G-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								
	Metho	d of ass	essment	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								

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 5 / 57

10-M=ADG-	Differe	ntial G	eometry								
M-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading nu	ımerical grade	Modul level	graduate		
	Course	25			V (4) + Ü (2) Module taught in: German 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=AFT-	Comple	ex Anal	ysis								
H-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading nu	ımerical grade	Modul level	graduate		
	Course	es			+ Ü (2) Jle taught in: Germ	nan 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. 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=AGMS-161-	Geometric Structures										
m01	ECTS 10 Duratio			n	1 semester	Method of grading nu	ımerical grade	Modul level	graduate		
	Courses			V (4) + Ü (2) Module taught in: German and/or English							
	Metho	d of ass	sessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 1 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=AIST-161-	Indust	rial Sta	tistics 1								
m01	ECTS	10	Duratio	n	1 semester	Method of grading nu	ımerical grade	Modul level	graduate		
	Course	25		V (4) + Ü (2) Module taught in: German 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 ninutes) 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 anguage of assessment: German or English creditable for bonus						

10-M=ALTH-161-	Lie Th	neory									
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cours	ses			V (4) + Ü (2) Module taught in: German and/or English						
	Meth	od of ass	essment	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-	Math	ematical	Control T	heory							
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			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=ASM-	Stochastic Models of Risk Management										
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							
	Meth	od of ass	essment	minut Asses Langu	es) or c) oral exam sment offered: In t	ination in groups (gro	nutes, usually chosen) or b pups of 2, 15 minutes per c the course is offered and	candidate)	one candidate each (approx. 20 emester		
10-M=AST-	Stoch	astical P	rocesses								
P-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							
	Meth	od of ass	essment	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=A-	Topolo	Topology											
TOP-161-m01	ECTS 10 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			V (4) + Ü (2) Module taught in: German and/or English								
	Metho	d of ass	essment	minu Asse Lang	tes) or c) oral exa ssment offered: Ir	nination in groups (gro	utes, usually chosen) o ups of 2, 15 minutes pe the course is offered ar	r candidate)	f one candidate each (approx. 20 emester				
10-M=AVS-	Insura	nce Mat	hematics	1									
M-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			+ Ü (2) ıle taught in: Gerr	nan 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 (appro 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 S	Time Series Analysis											
RA-212-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									
	Metho	d of ass	essment	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 Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semeste creditable for bonus									
10-M=AZTH-161-	Numbe	r Theor	y										
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	essment	minu Asse: Lang	) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 ninutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) ssessment offered: In the semester in which the course is offered and in the subsequent semester anguage of assessment: German or English reditable for bonus								

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 8 / 57

10-M=AGP-	Giovanni Prodi Lecture (Master)											
Cin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (3) + Ü (1) Module taught in: English							
	Metho	d of ass	essment	minu 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: English creditable for bonus							
10-M=VA-	Selecte	Selected Topics in Analysis										
NA-161-m01	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (2) Ile taught in: Gerr	nan and/or English		·				
			essment	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=VFN-	Selecte	Selected Topics in Financial Mathematics										
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	essment	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=VGDS-161-	Groups	and th	eir Repre	sentat	ions							
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	written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 inutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) ssessment offered: In the semester in which the course is offered and in the subsequent semester inguage of assessment: German or English editable for bonus							

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 9 / 57

10-M=VIST-161-	Industrial Statistics 2											
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course				+ Ü (2) ıle taught in: Germ	an and/or English						
	Methoo	d of ass	essment	minu Asses Langi	tes) or c) oral exan ssment offered: In	nination in groups (gro	ups of 2, 15 minutes pe		f one candidate each (approx. 20 emester			
10-M=V-	Mathe	Mathematical Statistics										
STA-212-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	d of ass	essment	<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	Insurance Mathematics 2										
M-161-m01	ECTS	ECTS 10 Duration			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	minu Asses Langi	tes) or c) oral exan ssment offered: In	nination in groups (gro	ups of 2, 15 minutes pe	or b) oral examination of er candidate) nd in the subsequent so	f one candidate each (approx. 20 emester			
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	Courses			V (3) + Ü (1) Module taught in: German and/or English							
	Method of assessment			minu Asses 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							

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 10 / 57

10-M=VMB-	Mathematical Imaging											
V-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	2S			V (3) + Ü (1) Module taught in: German and/or English							
	Metho	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								
10-M=V-	Select	Selected Topics in Mathematical Control Theory										
TRT-242-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							
		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-		Non-linear Analysis										
NAN-161-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	es		V (3) + Ü (1) Module taught in: German and/or English								
	Metho	Method of assessment			es) or c) oral exam sment offered: In t	ination in groups (gro	ups of 2, approx. 10 m	r b) oral examination of inutes per candidate) and in the subsequent se	one candidate each (approx. 15 emester			
10-M=VV-	Netwo	rked Sy	stems									
SY-161-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	25		V (3) + Ü (1) Module taught in: German and/or English								
	Metho	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								

10-M=VK-	Complex Geometry											
GE-161-m01	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		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. 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	Partial Differential Equations of Mathematical Physics										
P-161-m01	ECTS	10	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S	-		+ Ü (2) le taught in: Germa	n 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. 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	Pseudo Riemannian and Riemannian Geometry										
PRG-161-m01	ECTS 10 Duration		า	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	essment	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-	Functio	onal Ana	alysis									
AN-161-m01	ECTS	10	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	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) 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								

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 12 / 57

10-M=VAD-	Applied Differential Geometry										
G-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		V (4) + Ü (2) Module taught in: German and/or English							
	Methoc	d of ass	essment	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 Prodi Lecture Selected Topics (Master)										
PSin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S			+ Ü (2) ıle taught in: English						
	Methoo	d of ass	essment	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 Prodi Lecture Advanced Topics (Master)										
PAin-152-mo1	ECTS 10 Duration		n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: English							
	Methoc	l of ass	essment	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-		ni Prodi	Lecture	Moder	n Topics (Master)						
M=VGPMin-152- mo1	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
mor	Courses			V (4) + Ü (2) Module taught in: 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: English creditable for bonus							

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 13 / 57

10-M=EL-	Learning by Teaching 1										
T1-192-m01	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully complete	ed Modul level	graduate			
	Courses		Ü (2)								
	Method of	assessment		Assessment of tutoring activities by supervising lecturers or exercise supervisors (1 to 2 teaching units)							
			Language of assessment: German								
				Application and selection with the teaching coordinator for mathematics							
10-M=VGFT-192-	Geometric Complex Analysis										
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	assessment	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 semester creditable for bonus							
10-M=V-	Cryptography/Coding Theory										
KRY-192-m01	ECTS 10 Duration		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 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 semester creditable for bonus							
10-M=V-	Computer	Algebra									
CAL-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		minu 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=VAZ-	Algorithmic Number Theory									
T-192-m01	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses				+ Ü (2) ıle taught in: Germ	nan and/or English				
	Method of assessment			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 semester creditable for bonus					
10-M=VA-	Algebra	aic Geo	metry							
GE-192-m01	ECTS	10	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Course	S			+ Ü (2) Ile taught in: Germ	nan and/or English				
	Method of assessment			minu Langi Asses	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 semes creditable for bonus					
10-M=AAZ-	Analytic Number Theory									
T-222-m01	ECTS 10 Duratio		า	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			<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=VAFT-222-	Selecte	d Topic	s in Com	olex A	nalysis					
m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Course	S		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 (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						

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 15 / 57

10-M=VAT-	Algebr	aic Top	ology								
P-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading nu	ımerical grade	Modul level	graduate		
	Course	S			+ Ü (2) ıle taught in: Germ	an 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 ninutes) 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 anguage of assessment: German or English creditable for bonus						
10-M=V-	Field A	rithmet	ics								
KAR-161-m01	ECTS 10 Duratio			n	1 semester	Method of grading nu	ımerical grade	Modul level	graduate		
	Course	S			V (4) + Ü (2) Module taught in: German 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=V-	Discret	Discrete Mathematics									
DIM-161-m01	ECTS	ECTS 5 Duratio			1 semester	Method of grading nu	ımerical grade	Modul level	graduate		
	Courses			V (3) + Ü (1) Module taught in: German and/or English							
	Metho	d of ass	sessment	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=V-	Aspect	s of Ge	ometry								
GEO-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading nu	ımerical 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 (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-	Selected Topic	s in Math	ematio	cal Physics						
m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			+ Ü (2) lle taught in: Germa	n and/or English					
	Method of ass	essment	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=VMT-	Module Theory	/								
H-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						
10-M=MP1-161-	Method of ass	essment	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						
10-M=MP1-161- m01	Analysis and G	Geometry	of Clas	sical Systems						
	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		Modu	+ Ü (2) lle taught in: Germa						
	Method of ass	essment	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-	Algebra and D	ynamics o	of Quar	ntum Systems						
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 ass	essment	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=E-	Internship Ma	thematics	5							
PRK-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		P (o)							
	Method of ass	essment	a) rep	ort on practical cou	rse (15 to 30 pages) o	or b) talk (30 to 60 minutes)				
	other prerequi	sites	In adv	In advance, please consult with a lecturer who agrees to be your supervisor.						

	Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 17 / 57
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10-M=AAM-	Select	ed Topi	cs in Math	emati	cal Logic			·			
L-242-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level			
	Course	!S	-		+ Ü (1) ıle taught in: Gerr	nan and/or English		i			
	Metho	d of ass	sessment	b) ora c) ora Asses Lang	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						
10-M=A-	Harmo	nic Ana	lysis								
HAN-242-mo1	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level			
	Course	!S			V (4) + Ü (2) Module taught in: German and/or English						
	Method of assessment			b) ora c) ora Asses Lang	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 Researc	h in Group	os and s	Seminars	(10-40	ECTS credits)						
Applied Mathema	atics (10-4	<sub>i</sub> o ECTS	credits)								
10-M=GM-	Research in Groups - Mathematics in the Sciences										
SC-161-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	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	rch in G	roups - Nu	imeric	al Mathematics a	nd Applied Analysis					
MA-161-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	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=GROC-161-	Resear	rch in G	roups - Ro	botics	, Optimization and	Control Theory					
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es.			+ S (2) Ile taught in: Germa	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=SGP-	Giovan	ni Prod	i Seminar	(Mast							
Cin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		S (2) Modi	Module taught in: English						
	Metho	d of ass	essment	Asse	lk (60 to 120 minutes) ssessment offered: In the semester in which the course is offered and in the subsequent semester nguage of assessment: English						
10-M=SID-	Interdi	sciplina	ry Semin	ar							
C-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	Courses			ıle taught in: Germa	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=SM-	Seminar Mathematics in the Sciences										
SC-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	!S		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=SN-	Semina	ar in Nu	merical N	lathem	athematics and Applied Analysis						
MA-161-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	2S			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=SOP-	Semina	ar in Op	timizatio	n							
T-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S	-	S (2) Modu	le taught in: Germa	n 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=SA-	Semina	ar Appli	ed Mathe	matics							
MA-192-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						
	Method of assessment			Langi	alk (approx. 60 to 120 minutes) anguage of assessment: German or English ssessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester						
10-M=GIN-	Resear	ch in Gı	roups - Inv	verse F	Problems						
P-222-m01	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses				+ S (2) 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						
Mathematics (o-30	ECTS cr	edits)		•							
10-M=GAL-	Research in Groups - Algebra										
G-161-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							
	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=G-	Resear	ch in Gr	roups - Di	screte	screte Mathematics						
DIM-161-m01	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses				V (2) + 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							

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 20 / 57

10-M=GD-	Resear	rch in G	roups - Dy	namic	al Systems and Con	trol Theory					
SC-242-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es	_		+ S (2) Ile taught in: Germa	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=G-	Resea	rch in G	roups - Co	mplex	nplex Analysis						
COA-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						
10-M=GGM-	Method of assessment			Asse	alk (60 to 120 minutes) ssessment offered: In the semester in which the course is offered and in the subsequent semester anguage of assessment: German or English						
10-M=GGM-	Resear	r <mark>ch in G</mark> i	roups - Ge	eometi	y and Topology						
T-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses				+ S (2) Jle taught in: Germai	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=GM-	Research in Groups - Mathematics in Context										
CX-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=G-	Resea	r <mark>ch in</mark> Gi	roups - M	easure	easure and Integral						
MAI-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	25			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=GT-	Resear	rch in Gi	roups - Ti	me Se	ries Analysis						
SA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	25			+ S (2) ule taught in: Germar	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=G-	Resear	rch in Gı	roups - St	atistic							
STA-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						
10-M=GNTH-161-	Metho	d of ass	essment	Asse	alk (60 to 120 minutes) ssessment offered: In the semester in which the course is offered and in the subsequent semester anguage of assessment: German or English						
10-M=GNTH-161-	Resear	rch in Gı	roups - Νι	ımber	Theory						
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	Courses			+ S (2) ule taught in: Germar	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=GD-	Research in Groups - Differential 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							
	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=GDF-	Resear	rch in Gi	roups - De	eforma	formation Quantization						
Q-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	25			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-	Resear	ch in G	roups - No	on-linear Analysi	5						
LA-161-m01	ECTS	10	Duratio	n 1 semest	er	Method of grading	numerical grade	Modul level	graduate		
	Course	S		V (2) + S (2) Module taught	n: Germar	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=GO-	Resear	Research in Groups - Operator Algebras									
PA-161-m01	ECTS 10 Duratio			n 1 semest	er	Method of grading	numerical grade	Modul level	graduate		
	Courses			V (2) + S (2) Module taught in: German and/or English							
	Metho	d of ass	sessment	Assessment off	alk (60 to 120 minutes) ssessment offered: In the semester in which the course is offered and in the subsequent semester anguage of assessment: German or English						
10-M=GLIE-192- m01	Research in Groups - Lie Theory										
	ECTS	10	Duratio	n 1 semest	er	Method of grading	numerical grade	Modul level	graduate		
	Courses			V (2) + S (2) Module taught	n: Germar	and/or English					
	Method of assessment			Language of as	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	Duration	n 1 semest	er	Method of grading	numerical grade	Modul level	graduate		
	Course	S	-	V (2) + S (2) Module taught in: German and/or English							
	Method of assessment			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	ch in G	roups - Ma	athematical Phys	sics						
MAP-192-m01	ECTS	10	Duratio	n 1 semest	er	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	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-	Research i	n Groups - Hi	gher S	tructures						
m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			+ S (2) Ile taught in: Germar	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=G-	Research i	n Groups - Fu	nction	nctional Analysis						
FAN-222-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	lk (60 to 120 minutes) sessment offered: In the semester in which the course is offered and in the subsequent semester nguage of assessment: German or English						
10-M=SAD-	Seminar in	<b>Applied Diff</b>	erentia	l Geometry						
G-161-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		S (2) Modu	ıle taught in: Germar	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=SAL-	Seminar in Algebra									
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=SD-	Seminar in	Dynamical S	system	/stems and Control Theory						
SC-242-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		S (2) Modu	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=S-	Semina	ar in Co	mplex An	alysis							
COA-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		S (2) Modu	lle taught in: Germa	n and/or English					
	Metho	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 Fin	ancial an	d Insu	rance Mathematics						
FIM-161-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						
	Metho	d of ass	essment	Asses	k (60 to 120 minutes) sessment offered: In the semester in which the course is offered and in the subsequent semester nguage of assessment: German or English						
10-M=S-	Semina	ar in Ge	ometry ar	nd Top	ology						
GTO-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			S (2) Modu	ıle taught in: Germaı	n and/or English					
	Metho	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-	Seminar in Statistics										
STA-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							
	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							
10-M=SN-		ar in No	n-linear A	nalysi	nalysis						
LA-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	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						

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 25 / 57

10-M=GM-	Resear	rch in Gr	oups - M	athema	atical Logic						
LO-242-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level			
	Course	es.			V (2) + S (2) Module taught in: German and/or English						
	Metho	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=SM-	Semina	ar Math	ematical	Logic	gic						
LO-242-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level			
	Course	!S		S (2) Modu	S (2) Module taught in: German and/or English						
	Metho	d 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 anguage of assessment: German or English						
Subfield Application	on Subje	ct (10-4	o ECTS cr	edits)							
Application Subject	t Biolog	y and M	edicine								
07-MS2BI-152-m01	Bioinfo	ormatics									
	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es.		· · ·	V (2) + S (1) Module taught in: German and/or English						
	Metho	d of ass	essment	<ul> <li>a) written examination (30 to 60 minutes, including multiple choice questions) 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)</li> <li>Language of assessment: German and/or English</li> </ul>							
07-MS2BIF1-152-	Bioinfo	ormatics	F1								
mo1	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	!S		P (14) + S (1) Module taught in: German and/or English							
	Metho	d of ass	essment	<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>							

07-MS2BIF2-152-	Bioinf	ormatics	F2								
m01	ECTS	15	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Course	es			P(29) + S(1)						
					le taught in: Germar						
	Metho	d of ass	essment		a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or						
					log (15 to 30 pages) or oral examination of one candidate each (30 to 60 minutes) or						
					) oral examination in groups of up to 3 candidates (30 to 60 minutes) or						
				e) pre	presentation (20 to 45 minutes)						
			1	Langu	Language of assessment: German and/or English						
07-MBI-B-152-m01	Bioinf	ormatics	В								
	ECTS	5	Duration	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Course	es		V (2)							
					le taught in: Germar			-			
	Metho	d of ass	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)						
						German and/or Engli					
07-MS3S-152-m01	Syste	ns Biolo	gy								
	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es	_		V(2) + S(1)						
				Module taught in: German 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						
							ates (30 to 60 minutes) or				
						German and/or Engli					
07-MS3SYF1-152-	Syster	ns Biolo	gy F1		U	, 0					
m01	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es		P (14)	+ S (1)						
				Modu	le taught in: Germar	n and/or English					
	Metho	d of ass	essment			o to 60 minutes, inclu	ding multiple choice question	s) or			
				b) log	(15 to 30 pages) or						
						e candidate each (30 i	ates (30 to 60 minutes) or				
					sentation (20 to 45						
						German and/or Engli	sh				

07-MS3SYF2-152-	System	s Biolog	gy F2									
m01	ECTS	15	Duratio	1	1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	S	·		+ S (1) le taught in: Germar	n and/or English						
	Method	l of asse	essment		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							
					) oral examination in groups of up to 3 candidates (30 to 60 minutes) or							
				e) pre	e) presentation (20 to 45 minutes)							
	Language of assessment: German and/or English											
07-MS-B-152-m01	System		gy B									
	ECTS	5	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	S		Mòdu	V (2) Module taught in: German and/or English							
	Method	l of asse	essment	c) ora d) ora	l examination of one l examination in gro	e candidate each (30	lates (30 to 60 minutes)	s) or				
Application Subjec	t Chemie	9										
08-PCM1a-161-	Laser S	pectros	сору									
m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	-		Mòdu	S (2) + Ü (1) Module taught in: German or English							
	Method	l of asse	essment	a) writ Langu	a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) Language of assessment: German and/or English							
08-PCM1b-161-	Advanc	ed Phys	ical Cher	mistry	istry (Lab)							
m01	ECTS	5	Duration	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	S		P (4) Module taught in: German or English								
				and a Langu	Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English							
						module duration: bl	ock taught lab course with app	orox. 20 working	g days.			
08-PCM2-161-m01		cal Mec	hanics a	nd Rea	ction Dynamics							
	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	S			le taught in: Germar							
	Method	l of asse	essment	prox.	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							
Master's with 1 major Co	nputational	Mathemati	cs (2024)				JMU Würzburg • generated 30-Mär-20	024 • exam. reg. data	record 88 f24 - - H 2024 page 28 / 57			

08-PCM3-161-m01	Nanosca	ale Mat	erials								
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	5			$5(2) + \ddot{U}(1)$						
					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 (approx. 30 minutes)						
					Language of assessment: German and/or English						
	creditable for bonus										
08-PCM4-161-m01	Ultrafas	st spect	roscopy	and quantum-control							
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	5			S (2) + Ü (1) Module taught in: German 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					
		orerequisites Prior completion of modules o8-PCM1a and o8-PCM1b recommended. al Chemistry of Supramolecular Assemblies									
08-PCM5-161-m01				<u> </u>			numerical grade	Modulloval	araduata		
	ECTS 5 Duratio				1 semester + Ü (1)	Method of grading	numerical grade	Modul level	graduate		
	Courses			Modu	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						
08-PCM6-161-m01	Physica	l Chem	istry (Adv	/anced Lab)							
	<u> </u>	5	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Courses	5	J	P (4)	1	ļ <u> </u>			1.0		
					le taught in: Germa						
	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	ofasse	essment	exam (appr	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						

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 29 / 57

08-TCM3-161-m01	Numer	ical Met	hods and	Progr	amming							
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	:S		S (2)	S (2) + Ü (2)							
	Metho	d of ass	essment		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								
08-TCM4-161-m01	Quantum Dynamics											
		<u> </u>	Duratio	n	1 comostor	Mothod of grading	numerical grade	Modulloval	graduato			
	Course	5	Duratio		1 semesterMethod of gradingnumerical gradeModul levelgraduate(2) + Ü (2)							
		-					utab) and an an institution of					
	Metho	d of ass	essment						each (20 to 30 minutes) or c) oral prox. 20 pages) or e) presentation			
					ox. 30 minutes)							
					Language of assessment: German and/or English							
08-TCM1-161-m01	Selecte	ed Topic	s in Theo	retical	tical Chemistry							
	ECTS	5	Duratio	n	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								
					(approx. 30 minutes) Language of assessment: German and/or English							
08-TCAP1-161-m01	Theore	tical Ch	emistry -	Project course quantum chemistry								
	ECTS	5	Duratio		1 semester		(not) successfully completed	Modul level	graduate			
	Course	-	Duratio	P (5)	1 Semester	Include of grading		modultevet	3.44446			
			essment	presentation (approx. 30 minutes)								
	meeno		coontent			German and/or Engl	ish					
	Additic	nal Info	rmation	Addit	ional information on	module duration: bl	ock taught lab course with ap	prox. 20 working	days.			
08-TCAP2-161-m01	Theore	tical Ch	emistry -	Projec	t course quantum dy	ynamics						
	ECTS	5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Course	:S	<u>,</u>	P (5)				•				
	Metho	d of ass	essment	prese	ntation (approx. 30	minutes)			-			
						German and/or Engl	ish					
	Additio	onal Info	ormation	Addit	ional information on	module duration: bl	ock taught lab course with ap	prox. 20 working	days.			

10-l=SEM3-232-	Semina	ar 1 - Cu	rrent Topi	ics in (	Computer Science							
m01	ECTS	5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	5			S (2) Module taught in: German and English The course is offered in parallel in both German and English.							
	Methoo	l of asse	essment	puter	term paper (10 to 15 pages) and presentation (30 to 45 minutes) with subsequent discussion on a topic from the field of com- puter science Language of assessment: German and/or English							
	Additio	nal Info	rmation		ses available for st I,GE,SEC,IN	udents of the Master's	programme Informatik (	(Computer Science, 12	o ECTS credits): AT,SE,IT,KI,ES,L			
10-l=APR-212-m01	Advanc	ed Prog	ramming	5								
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	s	•	V (2)	/ (2) + Ü (2)							
	Additio	nalinfo		of on date) credi Langi	If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examina of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per ca 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,KI,LR, HC							
				ES,GE,SEC								
		mous N	lahila Sva	stems								
10-LU-	Autono	1				î.		î.				
		10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
		10	Duration	n V (4)	1 semester + Ü (2) ule taught in: Germ		numerical grade	Modul level	graduate			
10-LU- RI=AMS-232-m01	ECTS Course	10 S	Duration	V (4) Modu writte If anr of on date) Lang	+ Ü (2) ule taught in: Germ en examination (ap nounced by the lect e candidate each (	an and/or English prox. 60 to 120 minute turer at the beginning	es) of the course, the writter r an oral examination in	n examination may be	graduate replaced by an oral examination s (approx. 15 minutes per candi-			

10-I=A-	Algori	Algorithms for Geographic Information Systems									
GIS-232-m01	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es	-3	V (2) ·	V (2) + Ü (2)						
	Metho	d of ass	essment	lf ann of one date).	ounced by the lectu e candidate each (a	pprox. 20 minutes) or	f the course, the written exam an oral examination in groups	amination may be replaced by an oral examina ups of 2 candidates (approx. 15 minutes per ca			
				credit	Language of assessment: German and/or English creditable for bonus						
	Additio	onal Info	rmation	Focus	ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,KI,HCI,LR,IN						
10-I=AG-232-m01	· ·	utationa	Geometr	<u> </u>		·					
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course				+ Ü (2)						
	Method of assessment			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 candidate). Language of assessment: German and/or English creditable for bonus						
	Additio	onal Info	rmation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,HCI,GE,IN							
10-I=APA-161-m01	Approx	ximation	Algorith	ms							
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course			V (2) ·	+ Ü (2)						
	Metho	d of ass	essment	lf ann of one date). Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: German and/or English creditable for bonus						
	Additio	onal Info	rmation	Focus AT,IT,		dents of the Master's	programme Informatik (Compu	uter Science, 120	ECTS credits):		

Automata The	omata Theory										
ECTS 5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
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 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									
			1	1	· · ·						
	Duratio			Method of grading	numerical grade	Modul level	graduate				
Method of ass	sessment	lf ann of one date). Langu	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). Language of assessment: German and/or English								
		ES,LR		dents of the Master's	programme Informatik (Com	puter Science, 12	o ECTS credits):				
	ser Interfa										
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 announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examin of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per o 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					s (approx. 15 minutes per candi- ester				
	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 AssesKitteAssesKitteAssesKitteAssesKitte	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 ES,LRMultimodal User InterfacesFocuses available for stude ES,LRMultimodal User InterfacesV (2) + Ü (2)Method of assessmentpresentation of project re Language of assessment: creditable for bonusCoursesV (2) + Ü (2)Method of assessmentpresentation of project re Language of assessment: creditable for bonusCoursesV (2) + Ü (2)Method of assessment1 semesterCoursesV (2) +	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         Remoted of assessment       I semester         Method of assessment       Y (2) + Ü (2)         Method of assessment       I semester         Mutimodal User Interfaces       Y (2) + Ü (2) <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>	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				

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 33 / 57

07-Bl-161-m01	Bioinformatics	5								
	ECTS 5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	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).							
			Langu	Language of assessment: German and/or English						
	creditable for bonus									
10-I=CB-161-m01	Compiler Cons	1			•	1				
	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			(2) + Ü (2)						
	Method of asso	essment			rox. 60 to 120 minute					
								replaced by an oral examination s (approx. 15 minutes per candi-		
			date).							
				Language of assessment: German and/or English						
			creditable for bonus							
	Additional Info	rmation	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	hacoc	э⊑,⊓,	13,0E						
10-1-000-212-11101	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	Duration	V (2) +			numencargiade	Modul level	giauuate		
	Method of ass	accmont			rox 60 to 120 minute					
	Method of ass	essment		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						
			ofone	e candidate each (ap				s (approx. 15 minutes per candi-		
			date).	able for bonus						
					German and/or Eng	lish				
	Additional Info	rmation	_	-	-	programme Informatik (Compu	iter Science, 120	o FCTS credits): AT.SF.IT.KI		
10-I=EL-212-m01	E-Learning					p 3				
	ECTS 5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) +	+ Ü (2)				10		
	Method of ass	essment	writte	n examination (app	rox. 60 to 120 minute	es).		-		
			lf ann	ounced by the lectu	rer at the beginning	of the course, the written exami	ination may be	replaced by an oral examination		
			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	lish				
	Additional Info	rmation	Focus	es available for stud	lents of the Master's	programme Informatik (Compu	iter Science, 120	o ECTS credits): SE,IT,KI,HCI,GE		

Master's with 1 major Computational Mathematics (2024) JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88/t24/- - H 2024 page 34 / 57	Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 34 / 57

10-I=ES-231-m01	Embedded Systems								
	ECTS 5	Duration	n	1 semester	Method of grading numerical g	grade	Modul level	graduate	
	Courses		V (2) -						
				le taught in: German					
	Method of ass	essment			rox. 60 to 120 minutes).	, the written exam	ination may be	replaced by an oral examination	
			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).						
			Language of assessment: German and/or English creditable for bonus						
	Additional Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,ES,LR,GE						
10-l=lR-212-m01	Information R	etrieval							
	ECTS 5	Duration	n	1 semester	Method of grading numerical g	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 ca date).						approx. 15 minutes per candi-		
				able for bonus					
			Language of assessment: German and/or English						
	Additional Information Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,KI,HCI,GE								
10-HCI=3DUI-161-	3D User Interf			1			I		
m01	ECTS 5	Duration		1 semester	Method of grading numerical g	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	Computationa	l Complex	kity II						
	ECTS 5	Duration		1 semester	Method of grading numerical g	grade	Modul level	graduate	
	Courses		V (2) -	- + Ü (2)	· · · · ·		•		
	Method of ass	essment							
			If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination						
			of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date).						
				able 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						

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 35 / 57

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			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,HCI					
10-I=Kl2-212-m01	Artificia	Artificial Intelligence 2								
	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate		
	Course	s		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 candidate). 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-l=ML-212-m01	1 Mathematical Logic									
	ECTS 5	Duration	1 1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	_	V (2) +	Ü (2)						
	Method of asso	essment	If anno of one date). credita Langua	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 Assessment offered: In the semester in which the course is offered and in the following semester						
	Additional Info			ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): T,SE,KI,ES						
10-I=MI-212-m01	Medical Inform	atics								
	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) +							
	Method of asso		If anno of one o date). credita Langua	reditable for bonus anguage of assessment: German and/or English						
	Additional Info		SE,IT,K	I,HCI,GE	dents of the Master's	programme Informatik (Compu	uter Science, 12	o ECTS credits):		
10-I=PEB-182-m01	Performance E	ngineerin	g and B	enchmarking						
	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) + Module	Ü (2) e taught in: English	1					
	Method of ass	essment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus							
10-I=RAM-161-m01		imetic								
	ECTS 5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (2) +				_			
	Method of asso	essment	<ul> <li>written examination (approx. 60 to 120 minutes).</li> <li>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).</li> <li>Language of assessment: German and/or English creditable for bonus</li> </ul>							
	Additional Info		Focuse: AT,ES	es available for stud	dents of the Master's	programme Informatik (Compu				
Master's with 1 major Cor	nputational Mathemat	ics (2024)				JMU Würzburg • generated 30-Mär-20	024 • exam. reg. data i	record 88 f24 - - 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		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): KI, ES, LR, HCI, GE						
10-LU-	Roboti	CS 2	1								
RI=R02-232-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S			+ Ü (2) + P (1) ule taught in: Germ	nan and/or English					
		Method of assessment			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	Discret	e Even	t Simulati	on							
	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	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): IT,KI,ES,GE,IN						

10-HCI-PRIS-212-	Princip	oles of I	nteractive	Syste	/stems							
m01	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	es			$f(2) + \ddot{U}(2)$							
					Module taught in: German and/or English							
	Metho	d of ass	essment	a) wri	a) written examination (approx. 90 minutes) or							
					b) oral examination of one candidate each (approx. 30 minutes) Language of assessment: German and/or English							
					reditable for bonus							
10-I=SAR-161-m01	Softwa	are Arch	itecture									
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	es		V (2) -	/ (2) + Ü (2)							
	Metho	d of ass	essment		written examination (approx. 60 to 120 minutes).							
						rer at the beginning of the course, the written exam						
				of one date).	f one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- ate).							
				Language of assessment: German and/or English								
					able for bonus	, 3						
	Additio	onal Info	ormation			dents of the Master's programme Informatik (Comp	uter Science, 12	o ECTS credits):				
				SE,IT,								
10-HCI=M-			ning (for U		erfaces)		-					
LUI-161-m01	ECTS	5	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate				
	Course				$V(2) + \ddot{U}(2)$							
	Metho	d of ass	essment	presentation of project results (approx. 40 minutes)								
				Language of assessment: German and/or English creditable for bonus								
10-I=VG-161-m01	Visual	ization	of Graphs	create								
	ECTS	5	Duratio	1	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course			V (2) -				0				
	Metho	d of ass	essment			rox. 60 to 120 minutes).						
						rer at the beginning of the course, the written exam	ination 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).		Cormon and for English						
					able for bonus	German and/or English						
	Additi	onal Info	ormation			dents of the Master's programme Informatik (Comp	uter Science, 12	o ECTS credits):				
					HCI,GE							

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 39 / 57

10-I=AKA-232-m01	Selecte	d Topi	s in Algo	rithms							
	ECTS	5	Duratio	n	1 semester	Method of grading nume	erical grade	Modul level	graduate		
	Course	S		V (2)	+ Ü (2)						
	Methoo	l of ass	essment	b) pra on or c) ora d) ora Langi	a) written examination (approx. 60 to 120 minutes) or b) practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subseque b) 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) c.anguage of assessment: German and/or English c:reditable for bonus						
			ormation	AT	ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): T						
10-I=AKT-232-m01	Selecte	ed Topio	cs in Theo	ry							
	ECTS	5	Duratio	n	1 semester	Method of grading nume	erical grade	Modul level	graduate		
	Course	S		V (2)	/ (2) + Ü (2)						
				on or c) ora d) ora Langu credit	b) practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussi- on 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						
				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT							
10-I=SSS-232-m01		-	-								
		5	Duratio		1 semester	Method of grading nume	erical 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 progr	amme Informatik	(Computer Science, 12	o ECTS credits): SE,KI,LR, HCI, ES,		

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 40 / 57

10-I=NLP-212-m01	Machi	ne Learr	ning for N	atural	Language Process	ing		1			
	ECTS	5	Duratio	n	1 semester	Method of grading nu	umerical grade	Modul level	graduate		
	Cours	es		V (2)	(2) + Ü (2)						
			essment	If ann of on date) credit 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). creditable for bonus Language of assessment: German and/or English						
	Additi	onal Info	ormation	Focus	ses available for st	udents of the Master's pr	ogramme Informatik	(Computer Science, 120	D ECTS credits): AT,KI,HCI		
10-I=PM-212-m01	Profes	sional P	roject Ma	inagen	nent						
	ECTS	5	Duratio		1 semester	Method of grading nu	umerical grade	Modul level	graduate		
	Cours	es		V (4)							
	Method of assessment			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 prerequisites			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	nputer Science						
m01	ECTS	5	Duratio	n	1 semester	Method of grading nu	umerical grade	Modul level	graduate		
	Cours	es		P (4)	-						
	Method of assessment			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		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,KI,ES,L- R,HCI,GE						

10-I=STM-162-m01	NLP	and Te	ext Mining	ining								
	ECTS	5 5	Dura	ion	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cour	ses		V (2)	+ Ü (2)							
	Metł	nod of	assessme	lf ani 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							
	Addi	tional	Informatio	ו Focu	ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, IT, HCI.							
10-I=SNA-232-m01	Stati	istical	Network A	nalysis								
	ECTS	5 5	Dura	ion	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cour			Mod	+ Ü (2) ule taught in: Englisł							
			assessme	If ann of on date) Lang credi	Language of assessment: German and/or English creditable for bonus							
	Additional Information			n Focu IN								
10-I=MLN1-232-	Mac	hine L	earning for	Networl	etworks 1							
m01	ECTS	5 5	Dura		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cour	ses			+ Ü (2) ule taught in: Englisł	1						
			assessme	If ani of on date) Lang credi	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	lional	monnatio	Focu	ses available ior slu	uents of the master s	programme mormatik (COI	inputer Science, 120	JECTS CIEURSJ: AT, IT, SE, NI, HUI, IN			

10-l=MLN2-232-	Machi	ne Learn	ing for N	etwork	works 2								
m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	es			V (2) + Ü (2) Module taught in: English								
	Metho	d of ass	essment	If ann of one date). Langu	written examination (approx. 60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: English creditable for bonus								
	Additi	onal Info	rmation	Focus	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,SE,KI,HCI,IN								
10-I=M-		ingual N											
NLP-232-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	es			V (2) + Ü (2) Module taught in: German and/or English								
	Method of assessment			lf ann of one date). Langu	written examination (approx. 60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- date). Language of assessment: English Creditable for bonus								
10-l=QC-221-m01	Quant	um Com	municatio	ons									
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	es		V (2) + V (2) Module taught in: English									
			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: English creditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): LR								
,	Auunti	unatinit	mation	rocus		uents of the master s	programme mormatik (Comp	uter Science, 120					

Reinforcement	t Learning	g and C	omputational Decis	sion Making						
ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
Courses										
Method of ass	essment									
			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							
		date)								
Mucie Inferme	tion Dotri									
				Mathead of suppling						
	Duratio			Method of grading	numerical grade	Modul level	graduate			
Courses										
Method of ass	essment		-	-	utes) or					
		b) ora	oral examination of one candidate each (approx. 20 minutes) or							
				: German and/or Engl	ISN					
Remote Sensi	ng	crear		_						
	1	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
Courses		V (2) ·	+ Ü (2)				1.2			
Method of ass	essment									
		If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx, 20 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes) or an oral examination in groups of 2 candidates (approx, 1								
		date).								
		Language of assessment: German and/or EnglishCreditable for bonus								
Additional Info	ormation	possi	possible majors for MA 120 Computer Science: LR,IN							
<b>Operations Re</b>	search					<u>.</u>				
ECTS 5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
Courses				n and /ar Frailiah						
					-)					
Method of ass	essment					ination may be	replaced by an oral examination			
		date).	•		- · ·					
				: German and/or Engl	ish					
Additional Info	ormation	Focus	ses available for stu	dents of the Master's	programme Informatik (Comp	uter Science, 12	o ECTS credits): IN			
	ECTS       5         Courses       Method of ass         Method       of ass         Music       Information and ass         ECTS       5         Courses       Method of ass         Method       of ass         Method       of ass         Method       of ass         Method       of ass         Method       of ass         Method       of ass         Additional       Info         Operations       Re         ECTS       5         Courses       Method of ass         Method       of ass         Method       of ass         Method       of ass	ECTS       5       Duratio         Courses       Method of assessment         Method of assessment       Image: Courses         Method of assessment       Duratio         Courses       Duratio         Method of assessment       Image: Courses         Additional Information       Image: Course         ECTS       5       Image: Course	ECTS5DurationCoursesV (2) ModuMethod of assessmentwritte If ann of on- date) Langu CrediMusic Information RetrivalECTS5DurationCoursesV (2) 	ECTS5Duration1 semesterCoursesV (2) + Ü (2) Module taught in: GermaMethod of assessmentwritten examination (app If announced by the lectu of one candidate each (a date). Language of assessment Creditable for bonusMusic Information RetrievalECTS5Duration1 semesterCoursesV (2) + Ü (2) Module taught in: GermaMethod of assessment1 semesterCoursesV (2) + Ü (2) Module taught in: GermaMethod of assessmenta) written examination (a b) oral examination of or c) oral examination in gro Language of assessment Creditable for bonusRemote Sensing1 semesterECTS5Duration1 semester1 semesterCoursesV (2) + Ü (2) Module taught in: GermaMethod of assessmentvritten examination (app If announced by the lectu of one candidate each (a date). Language of assessmentMethod of assessmentvritten examination (app If announced by the lectu of one candidate each (a date). Language of assessmentAdditional Informationpossible majors for MA 1Operations Research1 semesterECTS5Duration5Duration1 semesterCoursesV (2) + Ü (2) Module taught in: GermaMethod of assessment1 semesterAdditional Informationpossible majors for MA 1Operations Research1 semesterECTS5DurationLanguage of assessment1 semesterCoursesV (	Courses       V (2) + Ü (2) Module taught in: German and/or English         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) of date). Language of assessment: German and/or Englic Creditable for bonus         Music Information Retrieval       I semester         ECTS       5       Duration         1 semester       Method of grading         Courses       V (2) + Ü (2) Module taught in: German and/or English         Method of assessment       a) written examination (approx. 6o to 120 minute) b) oral examination of one candidate each (ap c) oral examination in groups of up to 3 candid Language of assessment: German and/or English         Method of assessment       1 semester       Method of grading         Courses       V (2) + Ü (2) Module taught in: German and/or English         Method of assessment       1 semester       Method of grading         Courses       V (2) + Ü (2) Module taught in: German and/or English         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) of date). Language of assessment: German and/or English         Method of assessment       1 semester       Method of grading         Courses       V (2) + Ü (2) Module taught in: German and/or English         Method of assessment       1 semester       Me	ECTS       5       Duration       1 semester       Method of grading       numerical grade         Courses       V (2) + Ü (2)       Module taught in: German and/or English         Method of assessment       written examination (approx. 6o to 120 minutes)       If announced by the lecturer at the beginning of the course, the written exam of one candidate each (approx. 20 minutes) or an oral examination in groups date).         Language of assessment: German and/or English       Creditable for bonus         Music Information Retrieval       ECTS       5       Duration       1 semester       Method of grading       numerical grade         Courses       V (2) + Ü (2)       Module taught in: German and/or English       Module taught context is deteen and of the course, the written examination of one candidate each (approx. 20 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) or al examination in groups of up to 3 candidates (approx. 15 minutes) Language of assessment: German and/or English         Remote Sensing       V (2) + Ü (2)       Module taught in: German and/or English         Method of assessment       V (2) + Ü (2)       Module taught in: German and/or English         Method of assessment       V (2) + Ü (2)       Module taught in: German and/or English         Method of assessment       If announced by the lecturer at the beginning of the course, the written exam of one candidate each (approx. 20 minutes) or an oral examination in groups date).       Language of assessment: G	ECTS       5       Duration       1 semester       Method of grading       numerical grade       Modul level         Courses       V (2) + Ú (2)       Module taught in: German and/or English       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. 2o minutes) or an oral examination in groups of 2 candidate: date).         Language of assessment:       German and/or English       Modul level         Courses       V (2) + Ú (2)       Module taught in: German and/or English       Modul level         Courses       V (2) + Ú (2)       Module taught in: German and/or English       Module taught in: German and/or English         Method of assessment       a) written examination (approx. 6o to 120 minutes) or b) oral examination of one candidate each (approx. 2o minutes) or c) oral examination in groups of up to 3; candidates (approx. 15 minutes)       Language of assessment: German and/or English         Remote Sensing       V (2) + Ú (2)       Module taught in: German and/or English       Modul level         Courses       V (2) + Ú (2)       Module taught in: German and/or English       Modul level         Courses       V (2) + Ú (2)       Module taught in: German and/or English       Modul level         Courses       V (2) + Ú (2)       Module taught in: German and/or English       Module taught in: German and/or E			

Master's with 1 major Computational Mathematics (2024) JMU Wür	irzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 44 / 57

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) + Ü (2)						
					Module taught in: German and/or English						
				If ann of one date). Langu credit	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 creditable for bonus						
	Additional Information Focuses 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	n	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S			V (2) + Ü (2) Module taught in: German or English						
	Metho	d of ass	essment	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	1	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (3) + Modu	+ R (1) le taught in: Germa	n or English					
	Metho	d of ass	essment	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-SPI-161-m01	Spintro	onics	1					_				
	ECTS	6	Duratio	n	1 semester	Method of grading numerical g	grade	Modul level	graduate			
	Course	S			+ R (1) Jle taught in: Gern	nan or English						
	Method	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-FKS-161-m01		<u> </u>	ectrocopy		-				-			
	ECTS	6	Duratio		1 semester	Method of grading numerical g	grade	Modul level	graduate			
	Courses				(3) + R (1) odule taught in: German or English							
	Metho	l or 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 amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may inste form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment 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-MAG-161-m01	Magne	tism										
	ECTS	6	Duratio		1 semester	Method of grading numerical g	grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German 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-HNS-161-m01	Optica	l Proper	ties of Se	micon	ductor Nanostru	ctures							
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			+ R (1) Ile taught in: Ger	man or English							
				amina on/ta If a w form the le Asses Langu	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral ex- mination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati- m/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 anguage of assessment: German and/or English								
11-ASM-161-m01			oservation		· · · · · · · · · · · · · · · · · · ·								
	ECTS	6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				(3) + R (1) Iodule taught in: German or English								
	Method	1 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 change 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-TPE-161-m01	Experir	nental I	Particle P	hysics									
	ECTS	6	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English									
	Methoo	1 of ass	essment	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	ction	to Space P	hysics	; ;							
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ R (1) Jle taught in: Gern	nan or English						
	Method	d of as	sessment	amin on/ta If a w form the le Asse	vritten 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 orm of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, he 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 anguage of assessment: German and/or English							
11-MAS-161-m01			ngth Astro	nomy								
	ECTS	6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			(3) + R (1) odule taught in: German or English							
	Method	of as:	sessment	amin on/ta If a w form the le Asse	ation in groups (g alk (approx. 30 mi rritten examination of an oral examina ecturer must inforr ssment offered: In	roups of 2, approx. 30 n nutes). n was chosen as metho ation of one candidate o m 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-QM2-161-m01	Quantu	ım Me	chanics II									
	ECTS	8	Duratio		1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Course	S		V (4) + R (2) Module taught in: German or English								
	Methoo	d of as	sessment	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-RTT-161-m01	Theory	of Rela	tivity									
	ECTS	6	Duratio	ก	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ R (1) Ile taught in: Geri	man or English						
	Method	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). f 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									
	ECTS	6	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			(2) + R (2) odule taught in: German or English							
	Methoo	1 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 or amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or prese on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead tak form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is cl 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-TFK-161-m01	Theore	tical So	lid State	Physic	S							
	ECTS	8	Duratio	ก	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (4) + R (2) Module taught in: German or English								
	Methoo	d of ass	essment	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 So	olid State	Physic	CS 2							
	ECTS	8	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	es			+ R (2) 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-CMS-161-m01			l Materia		nce (DFT)							
	ECTS	8	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses				/ (4) + R (2) Aodule taught in: German or English							
	Metho	u or ass	sessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentat on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take th form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is change 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-KFT-161-m01	Confor	mal Fie	ld Theory									
	ECTS	6	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	25		V (3) + R (1) Module taught in: German or English								
	Metho	d of ass	sessment	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-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). f 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, he 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 anguage 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			(3) + R (1) odule taught in: German or English							
	Method	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 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 change 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-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) + R (1) Module taught in: German or English								
	Methoo	1 of asse	essment	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	Introduc	ction to	Gauge/G	iravity	Duality								
	ECTS	8	Duratior	۱	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ R (2) Ile taught in: Germ	an or English							
	Method	of asse	ssment	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-AKM-161-m01	Cosmolo	ogy											
	ECTS	6	Duratior		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				(3) + R (1) Nodule taught in: German or English								
	Method of assessment			amin on/ta If a w form the le	approx. 30 minutes) or oral ex- x. 8 to 10 pages) or presentati- essment may instead take the ethod of assessment is changed, date at the latest. mester								
11-AST-161-m01	Theoreti	ical Ast	rophysic	s									
	ECTS	6	Duratior	l	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + R (2) Module taught in: German or English									
	Method	of asse	ssment	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-APL-161-m01	High E	nergy A	strophysi	cs	_							
	ECTS	6	Duratio	ก	1 semester	Method of grading	numerical grade	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	vritten 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, he 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 anguage of assessment: German and/or English							
11-QFT2-161-m01			l Theory I				1					
	ECTS	8	Duratio	-	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				(4) + R (2) Iodule taught in: German or English							
			essment	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 e amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presenta on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take th form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is chan 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-TEP-161-m01	Theore	tical Ele	ementary	Partic	le Physics							
	ECTS	8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!5		V (4) + R (2) Module taught in: German or English								
	Method	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-ATTP-161-m01	Selecte	d Topic	s of Theo	retical	Elementary Particle	Physics							
	ECTS	6	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) - Modu	+ R (1) Ile taught in: Germar	n or English							
	Method	l of asso	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). f 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 anguage of assessment: German and/or English								
11-BSM-161-m01	Model	Beyon	d the Star	ndard I	Model of Elementary	/ Particle Physics							
	ECTS	6	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) - Modu	+ R (1) Ile taught in: Germar	n or English							
				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) amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or pon/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment 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		tate Phy	ysics 2										
	ECTS	8	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) + R (2) 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									
	other p	rerequis	sites	Appro	oval from examinatic	on committee require	d.						

Master's with 1 major Computational Mathematics (2024)	JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record 88 f24 - - H 2024	page 54 / 57
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11-HPH-201-m01	Semico	onducto	r Physics									
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S	_		+ R (1) Ile taught in: Gerr	man or English						
				nation (appr If a w form the le Langu Asses	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, he lecturer must inform students about this by four weeks prior to the original examination date at the latest. anguage 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	ļ		Solid St		/sics							
	ECTS	8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				(4) + R (2) Nodule taught in: German or English							
	Methoo	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 examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentati (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 ch 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	Advand	ed The	ory of Qua	antum	Computing and C	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	1 of ass	essment	written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/ta (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	Topolo	gical Ef	fects in So	olid St	ate Physics							
	ECTS	8	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (4) + R (1) Module taught in: German or English							
DIC	Method	l of asse	essment	nation (appr If a wind form of the le Langu	vritten 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 orm of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, he lecturer must inform students about this by four weeks prior to the original examination date at the latest. anguage 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	nenolos	gy and Th	eory o	f Superconductivity							
	ECTS 6 Duratio			า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			/ (3) + R (1) Aodule taught in: German or English							
				written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 3 nation in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 p (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessme form of an oral examination of one candidate each or an oral examination in groups. If the method of the lecturer must inform students about this by four weeks prior to the original examination date at Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester					to 10 pages) or presentation/talk essment may instead take the ethod of assessment is changed, late at the latest.			
11-QFT1-201-m01	-		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								
				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	rerequis	sites	Appro	val from examinatio	on committee require	d.					

11-SLQ-232-m01	Black Holes								
	ECTS 6 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses			V (3) + R (1) Module taught in: German or English					
			<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> <li>Assessment offered: In the semester in which the course is offered and in the following semester</li> </ul>						
10-M=MACM-161- mo1	Master Thesis Computational Mathematics								
	ECTS 30 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses		No courses assigned to module						
	Method of assessment			Master's thesis (750 to 900 hours total) Registration and assignment of topic in consultation with supervisor. 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 prerequisi- te for the assignment of the topic.					
	Additional Information			Time to complete: 6 months.					