

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

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

= lecture

Term: **SS** = summer semester. **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: (L)ASPO = general academic and examination regulations (for teaching-degree programmes), FSB = subject-specific provisions, SFB

= list of modules

Other: A = thesis, LV = course(s), PL = assessment(s), TN = participants, VL = prerequisite(s)

Conventions for the

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not cre-

modules in this SFB: ditable for bonus.

Information on Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the meassessment procedures: 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:

ASP02015

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											
	ECTS		Duration	(in semesters)	Method of grading		Module level					
	Courses		To be spe	be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y								
	Method of as	ssessme	ent									
	Only after su completion o		l if applica	if applicable								
	Other prereq	uisites	if applica	if applicable								
	Participants on of places		cati- if applica	if applicable								
	Additional in	formation	on if applica	if applicable								
	Referred to in	n LPO I	if applica	if applicable (examination regulations for teaching-degree programmes)								

Compulsory Elective	es (90 ECTS cre	edits)										
Subfield Numerica	l Mathematics a	and Optim	izatior	(30-60 ECTS credit	s)							
10-M=AAAN-161-	Applied Analy	sis										
mo1	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (4) - Modu	/ (4) + Ü (2) Module taught in: German and/or English								
	Method of ass	sessment	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-	Selected Topic	cs in Optii	mizatio	n								
T-161-m01	ECTS 10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	V (4) + Ü (2) Module taught in: German and/or English										
	Method of ass		minut Asses Langu credit	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 Topic	-		· · · · · · · · · · · · · · · · · · ·	1							
mo1	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 ass	sessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate 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 Opti	mization										
T-161-m01	ECTS 10	Duration		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) 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-	Math	ematical	Continuu	m Mec	hanics								
KOM-161-mo1	ECTS	5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cours	ses			V (3) + Ü (1) Module taught in: German and/or English								
	Metho	od of asse	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=ANG-	Nume	eric of Lar	ge Syster	ns of E	quations								
G-161-m01	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cours	ses	•		$V(4) + \ddot{U}(2)$ Module taught in: German and/or English								
				a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus									
10-M=VN-	Numeric of Partial Differential Equations												
PE-161-m01	ECTS	10	Duratio		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 asse	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of orminutes) 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 sem Language of assessment: German or English creditable for bonus									
10-M=VOST-161-	Optin	nal Contro	ol										
mo1	ECTS	5	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cours	ses		V (3) + Ü (1) Module taught in: German and/or English									
	Meth	od of asse	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=VI-	Inverse Problems 1												
PR-222-m01	ECTS	5 C	Ouration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	i		V (3) - Modu		nan and/or English							
	Method	of assess		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=VIP2-222-	Inverse	Problems	5 2										
mo1	ECTS	5 C	uration		1 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Courses			V (3) -		nan 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=V-	Selected Topics in Numerical and Applied Mathematics												
NAM-192-m01	ECTS	10 C	Ouration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	i		V (4) + Ü (2) Module taught in: German and/or English									
	Method	of assess		a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate e 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 subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the subsected in the semester in which the courses are offered and in the semester in which the courses are offered and in the semester in which the courses are offered and in the semester in which the courses are offered and in the semester in which the courses are offered and in the semester in which the courses are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in which the course are offered and in the semester in the course are offered and in the semester in the cour									
Subfield Mathema	tics (10-40	o ECTS cr	edits)										
10-M=AAL-	Topics in	n Algebra	3										
G-161-mo1	ECTS	10 C	Ouration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + Ü (2) Module taught in: German and/or English									
	Method of assessment			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=ADG-	Differ	ential Ge	ometry			,						
M-161-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es			+ Ü (2) lle taught in: Germar	n and/or English						
	Metho	od of ass	essment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=AFT-	Comp	lex Analy	/sis									
H-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es			+ Ü (2) lle taught in: Germar	n and/or English						
	Metho	od of ass	essment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus							
10-M=AGMS-161-	Geometric Structures											
mo1	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	od of ass	essment	minut	one candidate each (approx. 20 emester							
10-M=AIST-161-	Indus	trial Stat	istics 1									
mo1	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es			+ Ü (2) le taught in: Germar	n and/or English						
	Method of assessment			minut Asses Langu	tes) or c) oral examinates; or c) oral examinates; ln th	examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 or c) oral examination in groups (groups of 2, 15 minutes per candidate) of offered: In the semester in which the course is offered and in the subsequent semester of assessment: German or English for bonus						

10-M=ALTH-161-	Lie The	Lie Theory												
mo1	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	S	-		V (4) + Ü (2) Module taught in: German and/or English									
	Method of assessment			minu Asses Langi	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-	Mather	natical	Control T	heory										
mo1	ECTS	10	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	S			+ Ü (2) ıle taught in: Germa	n and/or English								
	Method	d of ass	essment	b) ora c) ora Asses Langi	al examination of on all examination in gro	utes, usually chosen) or prox. 20 minutes) or minutes per candidate) the course is offered and		mester						
10-M=ASM-	Stocha	stic Mo	dels of Ri	sk Ma	nagement									
R-161-mo1	ECTS	10	Duratio	n										
	Courses			V (4) + Ü (2) Module taught in: German and/or English										
	Method	d of ass	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (appr 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=AST-	Stocha	stical P	rocesses											
P-161-m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses				+ Ü (2) ıle taught in: Germa	n 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=A-	Topolo	gy			,								
TOP-161-mo1	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			V (4) + Ü (2) Module taught in: German and/or English								
	Method	d of ass	essment	minu Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus								
10-M=AVS-	Insurar	ice Mat	hematics	1									
M-161-m01	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			+ Ü (2) ıle taught in: Germa	n and/or English							
	Method	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=AZ-	Time S	eries Ar	nalysis										
RA-212-mo1	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	d of ass	essment	b) ora c) ora 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 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=AZTH-161-	Numbe	r Theor	y										
mo1	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ Ü (2) ıle taught in: Germa	n 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=AGP-	Giovann	Giovanni Prodi Lecture (Master)												
Cin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	5	•		+ Ü (1) ıle taught in: Englisl	1		•						
	Method	of asse	essment	minu 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: English creditable for bonus									
10-M=VA-	Selecte	d Topic	s in Analy	ysis				,						
NA-161-mo1	ECTS	10	Duratio	1	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 asse	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-	Selected Topics in Financial Mathematics													
M-161-m01	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	5			V (4) + Ü (2) Module taught in: German and/or English									
	Method	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (a 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 the	eir Repres	sentati	ions			,						
mo1	ECTS	10	Duration	า	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			a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus										

10-M=VIST-161-	Indus	strial Stat	stics 2										
mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cours	ses			+ Ü (2) lle taught in: German	and/or English							
	Meth	od 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=V-	Math	ematical	Statistics	•									
STA-212-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ Ü (2) lle taught in: German	and/or English							
	Method of assessment			b) ora c) ora 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=VVS-	Insurance Mathematics 2												
M-161-m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (4) + Ü (2) Module taught in: German and/or English										
	Method of assessment			a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approximates) 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=VD-	Dyna	mical Sys	tems										
SY-161-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				V (3) + Ü (1) Module taught in: German and/or English								
	Method of assessment			a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (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=VMB-	Mathema	atical Imaging		"	'							
V-161-mo1	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ Ü (1) ıle taught in: Germa	n and/or English							
	Method	of assessment	minu 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-	Selected	Topics in Math	nemati	cal Control Theory								
TRT-242-m01	ECTS 1	o Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ Ü (2) ıle taught in: Germa	n 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-line	ar Analysis										
NAN-161-mo1	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ Ü (1) ıle taught in: Germa	n and/or English							
	Method	of assessment	minu Asses Langu	tes) or c) oral exami ssment offered: In th	nation in groups (gro	tes, usually chosen) or bubs of 2, approx. 10 min the course is offered and	utes per candidate)	one candidate each (approx. 15				
10-M=VV-	Network	ed Systems										
SY-161-m01	ECTS 5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (3) + Ü (1) Module taught in: German and/or English									
	Method o	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=VK-	Complex 0	Geometry										
GE-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading In	umerical grade	Modul level	graduate				
	Courses			+ Ü (2) ıle taught in: Germa	an and/or English							
	Method of	assessment	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=VPD-	Partial Dif	ferential Equa	tions	of Mathematical Ph	ysics							
P-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading In	umerical grade	Modul level	graduate				
	Courses			V (4) + Ü (2) Module taught in: German and/or English								
	Method of	assessment	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-	Pseudo Riemannian and Riemannian Geometry											
PRG-161-m01	ECTS 10 Duratio		n	1 semester	Method of grading n	umerical 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 (app 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-	Functiona	l Analysis	•				,					
AN-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading In	umerical grade	Modul level	graduate				
	Courses	·	V (4) + Ü (2) Module taught in: German and/or English									
	Method of	assessment	minu Asse Lang	tes) or c) oral exami ssment offered: In t	examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 or c) oral examination in groups (groups of 2, 15 minutes per candidate) ent offered: In the semester in which the course is offered and in the subsequent semester of assessment: German or English e for bonus							

10-M=VAD-	Applied	d Differe	ential Geo	metry	,	'		'-					
G-161-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			/ (4) + Ü (2) Module taught in: German and/or English								
	Method	d of ass	essment	minu Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus								
10-M=VG-	Giovan	ni Prod	i Lecture :	Selecto	ed Topics (Master)			,					
PSin-152-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				/ (4) + Ü (2) Module taught in: English								
	Method of assessment			minut Asses Langu credit	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	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	Courses			V (4) + Ü (2) Module taught in: English								
	Method	d of ass	essment	minu Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (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-	Giovan	ni Prod	i Lecture l	Moder	n Topics (Master)								
M=VGPMin-152-	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
m01	Courses Method of assessment				V (4) + Ü (2) Module taught in: English								
				a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									

10-M=EL-	Learnin	g by Te	aching 1		'		,					
T1-192-m01	ECTS	5	Duratio	n	1 semester	Method of grading (not) successfully completed	Modul level	graduate				
	Course	S		Ü (2)	J (2)							
	Method	of ass	essment		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-			nplex Ana									
mo1	ECTS	10	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S			+ Ü (2) ıle taught in: Germa	n and/or English						
	Method	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 90 to 120 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 so creditable for bonus										
10-M=V-	Cryptography/Coding Theory											
KRY-192-m01	ECTS 10 Duratio			1	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses				+ Ü (2) ıle taught in: Germa	n and/or English						
	Method of assessment			a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (appr 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 set creditable for bonus								
10-M=V-	Compu	ter Alge	ebra									
CAL-192-m01	ECTS	10	Duratio	1	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (4) + Ü (2) Module taught in: German and/or English								
	Method of assessment			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	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S			V (4) + Ü (2) Module taught in: German and/or English							
	Method	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 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-	Algebr	aic Geo	metry		•			,				
GE-192-m01	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S			+ Ü (2) le taught in: Germa	n and/or English		,				
	Method	d of ass	essment	minut Langu Asses	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus							
10-M=AAZ-	Analytic Number Theory											
T-222-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			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=VAFT-222-	Selecte	ed Topic	s in Com _l	plex Ar	nalysis							
mo1	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S		V (3) - Modu	+ Ü (1) le taught in: Germa	n and/or English						
	Method	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=VAT-	Algel	braic Top	oology			,							
P-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses			V (4) + Ü (2) Module taught in: German and/or English								
	Meth	od of as	sessment	minut Asses Langu	tes) or c) oral examin	nation in groups (gro e semester in which	ups of 2, 15 minutes pe	or b) oral examination of er candidate) nd in the subsequent se	f one candidate each (approx. 20				
10-M=V-	Field	Arithme	tics										
KAR-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses			V (4) + Ü (2) Module taught in: German and/or English								
			sessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus								
10-M=V-			hematics										
DIM-161-m01	ECTS	5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses		V (3) + Ü (1) Module taught in: German and/or English									
	Meth	od of as	sessment	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (ap 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-	Aspe	cts of Ge	eometry	1									
GEO-161-mo1	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses			V (3) + Ü (1) Module taught in: German and/or English								
	Meth	od of as	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=VMPH-161-	Selected Topics in Mathematical Physics												
mo1	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								
	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 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	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course			V (3) + Ü (1) Module taught in: German and/or English									
	Method	d of asse	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-	Analysi	is and G	eometry	of Clas	sical Systems								
mo1	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			+ Ü (2) le taught in: Germa	an and/or English		•					
	Method	d of asse	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	a and Dy	/namics o	f Quar	ntum Systems								
mo1	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			+ Ü (2) le taught in: Germ	an and/or English							
	Method	d of asse	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 or English creditable for bonus										
10-M=E-	Interns	hip Mat	hematics										
PRK-161-m01	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		P (o)									
				a) report on practical course (15 to 30 pages) or b) talk (30 to 60 minutes)									
	other p	rerequis	sites	In advance, please consult with a lecturer who agrees to be your supervisor.									

10-M=AAM-	Selecte	ed Topi	cs in Math	emati	cal Logic				-			
L-242-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level				
	Course	S			+ Ü (1) lle taught in: Gern	nan and/or English						
	Method	d of ass	sessment	b) ora c) ora Asses Langu	a) written examination (approx. 60 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 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 anguage of assessment: German and/or English creditable for bonus							
10-M=A-	Harmo	nic Ana	lysis					'				
HAN-242-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level				
	Course	·S			(4) + Ü (2) odule taught in: German and/or English							
	Method	Method of assessment			a) written examination (approx. 60 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English creditable for bonus							
Subfield Research	in Group	s and S	Seminars	(10-40 ECTS credits)								
Applied Mathema	tics (10-4	o ECTS	credits)									
10-M=GM-	Resear	ch in G	roups - Ma	athema	atics in the Science	ces						
SC-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	·S			+ S (2) lle taught in: Gern	nan and/or English						
	Method	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=GN-	Resear	ch in G	roups - Nu	ımerica	al Mathematics a	nd Applied Analysis						
MA-161-m01	ECTS 10 Duratio											
	Course	·S		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=GROC-161-	Research i	n Groups - Ro	botics	otics, Optimization and Control Theory								
mo1	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	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=SGP-	Giovanni P	rodi Semina	r (Mast	er)								
Cin-152-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		S (2) Modu	lle taught in: English								
	Method of	assessment	Asses	Calk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								
10-M=SID-	Interdiscip	linary Semin	ar	r								
C-161-m01	ECTS 5 Duration		n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	,	S (2) Modu	lle taught in: Germar	n and/or English							
	Method of	assessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=SM-	Seminar Mathematics in the Sciences											
SC-161-mo1	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	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=SN-	Seminar in	Numerical N	athem	atics and Applied A	nalysis		'					
MA-161-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										

10-M=SOP-	Semina	r in Opt	imizatior	1		'	,						
T-161-m01	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	S		S (2) Modu	le taught in: Germ	an and/or English		•					
	Method	l of asse	ssment	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	Seminar Applied Mathematics											
MA-192-m01	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		S (2) Modu	S (2) Module taught in: German and/or English									
	Method	Method of assessment Research in Groups - Ir			lk (approx. 60 to 120 minutes) Inguage of assessment: German or English Insurance of the semester in which the courses are offered and in the subsequent semester								
10-M=GIN-	Researc	ch in Gr											
P-222-m01			Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				V (2) + S (2) Module taught in: German and/or English								
	Method	l of asse	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								
Mathematics (o-3	o ECTS cre	edits)		_									
10-M=GAL-	Researc	ch in Gr	oups - Alg	gebra									
G-161-m01	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	S			+ S (2) lle taught in: Germ	an and/or English							
				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-	Researc	ch in Gr	oups - Di	screte	Mathematics								
DIM-161-m01	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	S			V (2) + S (2) Module taught in: German and/or English								
	Method of assessment			t 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 - Dynamical Systems and Control Theory												
SC-242-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	!S	•		V (2) + S (2) Module taught in: German and/or English								
	Metho	d of ass	essment		talk (60 to 120 minutes)								
	Wetho	u 01 u33	Coomen	Asses	Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=G-	Resear	rch in G	roups - Co	mplex	mplex Analysis								
COA-161-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	25			+ S (2) le taught in: Germar	and/or English		·					
	Method of assessment			Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GGM-	Resear	rch in G	roups - Ge	ometr	ometry and Topology								
T-161-m01	ECTS	ECTS 10 Duratio			1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ S (2) le taught in: Germar	and/or English							
	Method of assessment			Asses	oo to 120 minutes) sment offered: In th tage of assessment:		the course is offered and ir	n the subsequent se	emester				
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				
	Course	25		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-	Resear	rch in G	roups - M	easure	and Integral			,					
MAI-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + S (2) Module taught in: German and/or English									
	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=GT-	Research in	Groups - Ti	me Ser	ies Analysis								
SA-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 as	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=G-	Research in	Groups - St	atistic	5								
STA-161-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ S (2) le taught in: German	n and/or English							
	Method of as	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GNTH-161-	Research in	Groups - No	ımber '	Theory	'		'					
mo1	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ S (2) le taught in: German	n and/or English							
	Method of as	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GD-	Research in Groups - Differential Geometry											
GE-161-m01	ECTS 10	Duratio	·		Method of grading numerical grade		Modul level	graduate				
	Courses		V (2) + S (2) Module taught in: German and/or English									
	Method of as	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								
10-M=GDF-	Research in	Groups - De	eforma	ion Quantization	,		'					
Q-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 as	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=GN-	Research in (Groups - No	on-line	ar Analysis			'					
LA-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 as	ssessment	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=GO-	Research in Groups - Operator Algebras											
PA-161-mo1	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ S (2) ıle taught in: Germaı	n and/or English		<u> </u>					
	Method of as	ssessment	Asses	calk (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=GLIE-192-	Research in (Groups - Li	e Theo	Theory								
mo1	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ S (2) ıle taught in: Germaı	n and/or English		,					
	Method of as	ssessment	Langu	approx. 60 to 120 mi uage of assessment: ssment offered: Only	German or English	the semester in which	n the courses are offered	I and in the subsequent semester				
10-M=GAD-	Research in (Groups - Ap	plied	Differential Geometr	ry							
G-192-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (2) + S (2) Module taught in: German and/or English									
	Method of as	ssessment	Langi	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-	Research in (Groups - M	athema	atical Physics	'							
MAP-192-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + S (2) Module taught in: German and/or English								
	Method of as	ssessment	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-	Researc	h in Gr	oups - Hi	gher S	tructures	1		"				
mo1	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5	•		+ S (2) lle taught in: Germar	n and/or English						
	Method	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-	Researc	ch in Gr	oups - Fu	nction	al Analysis							
FAN-222-m01	ECTS	10	Duration	<u> </u>	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5		` ′	+ S (2) lle taught in: Germar	n and/or English						
	Method	of asso	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							
10-M=SAD-	Semina	r in App	olied Diffe	erentia	rential Geometry							
G-161-m01	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			S (2) Modu	le taught in: Germar	n and/or English						
	Method of assessment			Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English							
10-M=SAL-	Seminar in Algebra											
G-161-m01	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5		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-	Semina	r in Dyr	namical S	ystem	s and Control Theory	,		'				
SC-242-m01	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	5		S (2) Module taught in: German and/or English								
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English								

10-M=S-	Semi	inar in Coi	mplex An	alysis					-				
COA-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses		S (2) Modu	S (2) Module taught in: German and/or English								
	Meth	od 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=S-	Seminar in Financial and Insurance Mathematics												
FIM-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses		S (2) Modu	le taught in: Germar	n and/or English							
	Meth	od 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-	Semi	inar in Ge	ometry ar	id Topo	ology			'	,				
GTO-161-mo1	ECTS 5 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	Courses			le taught in: Germar	n and/or English		•					
	Meth	od of ass	essment	Asses	oo to 120 minutes) sment offered: In th lage of assessment:		the course is offered	and in the subsequent so	emester				
10-M=S-	Semi	Seminar in Statistics											
STA-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses		S (2) Module taught in: German and/or English									
	Meth	od 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-	Semi	inar in No	n-linear A	nalysi	5								
LA-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=GM-	Resear	ch in G	roups - M	athema	atical Logic						
LO-242-mo1	ECTS	10	Duratio	n	1 semester	Method of grading numerical gra	ade	Modul level			
	Course	S			+ S (2) le taught in: Germa	n and/or English					
	Method	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	r Math	ematical	Logic	,			'			
LO-242-mo1	ECTS	5	Duratio	n	1 semester	Method of grading numerical gra	ade	Modul level			
	Course				(2) Module taught in: German and/or English						
	Method	d of ass	essment	Asses	alk (6o 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						
Subfield Application	n Subje	ct (10-4	o ECTS cr	edits)							
Application Subjec	t Biolog	y and N	ledicine								
07-MS2BI-152-m01	Bioinfo	rmatics	5								
	ECTS	10	Duratio	n	1 semester	Method of grading numerical gra	ade	Modul level	graduate		
	Course	S		V (2) - Modu	+ S (1) le taught in: Germa	n and/or English					
	Method	d of ass	essment	c) ora d) ora	a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English						
07-MS2BIF1-152-	Bioinfo	rmatics	5 F1								
mo1	ECTS	10	Duratio	n	1 semester	Method of grading numerical gra	ade	Modul level	graduate		
	Courses				+ S (1) le taught in: Germa	n and/or English					
	Method of assessment a) b) c) d) e)			b) log c) ora d) ora e) pre	a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English						

07-MS2BIF2-152-	Bioinfo	rmatics	F2			-							
mo1	ECTS	15	Duratio	n	1 semester	Method of grading (not) successfully completed	Modul level	graduate					
	Course	S			+ S (1) le taught in: Germa	n and/or English							
	Method	d of ass	essment	b) log c) ora d) ora e) pre	a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) c.anguage of assessment: German and/or English								
07-MBI-B-152-m01	Bioinfo												
	ECTS 5 Duratio			<u> </u>	1 semester	Method of grading (not) successfully completed	Modul level	graduate					
	Courses			V (2) Modu									
	Method	d of ass	essment	c) ora d) ora	a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English								
07-MS3S-152-m01													
	ECTS	10	Duratio	า	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	S			V (2) + S (1) Module taught in: German and/or English								
	Method of assessment			c) ora d) ora	a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English								
07-MS3SYF1-152-	System	ıs Biolo	gy F1										
mo1	ECTS	10	Duratio	1	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	S			+ S (1) le taught in: Germa	n and/or English							
	Method	d of ass	essment	b) log c) ora d) ora e) pre	(15 to 30 pages) or l examination of on ll examination in gressentation (20 to 45	e candidate each (30 to 60 minutes) or oups of up to 3 candidates (30 to 60 minutes) or	s) or						

07-MS3SYF2-152-	System	s Biolo	gy F2								
mo1	ECTS	15	Duration	1	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Courses	5			+ S (1) le taught in: Germa	an and/or English					
	Method	l of ass	essment	b) log c) ora d) ora e) pre	a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English						
07-MS-B-152-m01	System	s Biolo	gy B								
	ECTS	5	Duration	1	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Courses	5		V (2) Modu	/ (2) Module taught in: German and/or English						
	Method of assessment				written examination (30 to 60 minutes, including multiple choice questions) 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) nguage of assessment: German and/or English						
Application Subjec	t Chemie	<u>;</u>									
o8-PCM1a-161-	Laser S	pectros	сору								
mo1	ECTS	5	Duration	ı	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses				S (2) + Ü (1) Module taught in: German or English						
	Method	l of ass	essment		a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) Language of assessment: German and/or English						
o8-PCM1b-161-	Advanc	ed Phy	sical Cher	nistry (Lab)							
mo1	ECTS	5	Duration	ı	1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Courses	5		P (4) Modu	P (4) Module taught in: German or English						
	Method	l of ass	essment	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							
	Additio	nal Info	rmation	Additi	onal information o	on module duration: bl	ock taught lab course with app	rox. 20 working	g days.		
08-PCM2-161-m01			hanics a	nd Rea	ction Dynamics						
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	5			S (2) + Ü (1) Module taught in: German or English						
				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							
Master's with 1 major Co	mputational	Mathemat	ics (2024)	- 0-		,0	JMU Würzburg • generated 19-Mär-20	024 • exam. reg. data	record 88 f24 - - H 2024 page 28 / 57		

08-PCM3-161-m01	Nanos	cale Ma	terials									
	ECTS	5	Duration	1	1 semester	Method of grading n	umerical grade	Modul level	graduate			
	Course	S			le taught in: Germa							
				prox. Langu	a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) Drox. 30 minutes) Language of assessment: German and/or English Creditable for bonus							
08-PCM4-161-m01	Ultrafa	Ultrafast spectroscopy and quantum-control										
	ECTS	5	Duration	1	1 semester	Method of grading n	umerical grade	Modul level	graduate			
	Courses			S (2) · Modu	+ Ü (1) le taught in: Germa	an or English		•				
	Method of assessment			prox.	written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) anguage of assessment: German and/or English							
	other p	rerequi	sites	Prior	rior completion of modules o8-PCM1a and o8-PCM1b recommended.							
08-PCM5-161-m01	Physic	al Chem	istry of S	upram	olecular Assemblie	es						
	ECTS	5	Duration	1	1 semester	Method of grading n	umerical grade	Modul level	graduate			
	Courses			S (2) · Modu	+ Ü (1) le taught in: Germa	an or English						
	Method	d of ass	essment	prox.	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							
08-PCM6-161-m01	Physical Chemistry (Advanced Lab)											
	ECTS	5	Duration	1	1 semester	Method of grading (not) successfully completed	Modul level	graduate			
	Course	S		P (4) Modu	, , ,							
	Method	d of ass	essment		presentation (approx. 20 minutes) Language of assessment: German and/or English							
	Additio	nal Info	rmation	Addit	Additional information on module duration: block taught lab course with approx. 20 working days.							
08-TCM2-161-m01	Basics	and Ap	plications	of Qu	antum Chemistry							
	ECTS	5	Duration	1	1 semester	Method of grading n	umerical grade	Modul level	graduate			
	Course	S		S (2) ·	+ Ü (2)	'		•	,			
	Method	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) presentatio (approx. 30 minutes) Language of assessment: German and/or English								

08-TCM3-161-m01	Numeri	ical Meth	ods and	Progr	amming	1						
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		S (2)	+ Ü (2)			`				
				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							
08-TCM4-161-m01	Quantu	ım Dynan	nics									
	ECTS 5 Duratio				1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		S (2)	+ Ü (2)							
	Method of assessment			exam (appr) 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) anguage of assessment: German and/or English							
08-TCM1-161-m01	Selecte	d Topics	in Theo	etical	cal Chemistry							
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		S (2)	+ Ü (2)			,				
	Method of assessment			a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English								
08-TCAP1-161-m01	Theore	tical Che	mistry -	Project course quantum chemistry								
	ECTS	5	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Course	S		P (5)								
	Method	d of asses		presentation (approx. 30 minutes) Language of assessment: German and/or English								
	Additio	nal Infor	mation	Addit	ional information o	n module duration: bl	ock taught lab course with app	rox. 20 working	days.			
08-TCAP2-161-m01	Theore	tical Che	mistry -	Projec	t course quantum o	dynamics						
	ECTS	5	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Course	S		P (5)								
				presentation (approx. 30 minutes) Language of assessment: German and/or English								
	Additional Information			Additional information on module duration: block taught lab course with approx. 20 working days.								

10-l=SEM3-232-	Semina	r 1 - Cı	irrent Top	ics in (Computer Science							
mo1	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	Courses			S (2) Module taught in: German and English The course is offered in parallel in both German and English.							
	Method of assessment			puter	term paper (10 to 15 pages) and presentation (30 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: German and/or English							
				R,HCI	ses available for st ,GE,SEC,IN	udents of the Master'	s programme Informatik ((Computer Science, 12	o ECTS credits): AT,SE,IT,KI,ES,L-			
10-I=APR-212-m01	Advanc	ed Pro	gramming			'		'				
	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	5	'	V (2)	(2) + Ü (2)							
				If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral 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): SE,KI,LR, HCI,								
				ES,GE,SEC								
10-LU-			Mobile Sy:									
RI=AMS-232-mo1	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			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 candidate). Language of assessment: German and/or English Creditable for bonus								
	Additio	nal Inf	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT, KI, ES, LR, GE								

10-l=A-	Algorit	hms for	Geograpi	hic Inf	ormation Systems						
GIS-232-m01	ECTS	5	Duration	1	1 semester	Method of grading numerical grad	е	Modul level	graduate		
	Course	S	,	V (2)	+ Ü (2)			•			
				If anr of on date) Langu 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 candidate). Language of assessment: German and/or English creditable for bonus						
	Ļ				ses available for stu	udents of the Master's programme Info	ormatik (Compu	uter Science, 120	o ECTS credits): AT,KI,HCI,LR,IN		
10-l=AG-232-m01		tationa	l Geometr	у							
	ECTS	5	Duration		1 semester	Method of grading numerical grad	е	Modul level	graduate		
	Course	S		V (2)	(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 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,HCI,GE,IN						
10-I=APA-161-m01			Algorith								
	ECTS	5	Duration		1 semester	Method of grading numerical grad	e	Modul level	graduate		
	Course			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 candidate). Language of assessment: German and/or English creditable for bonus							
	Additional Information				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,GE						

10-I=AUT-212-m01	Automa	ata Theo	ory		,			,			
	ECTS	5	Duration)	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	<u> </u>		V (2)	+ Ü (2)	•	•	•			
	Method	l of asso		If ann of one 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 candidate). 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 Information						,		o ECTS credits): AT,IT,ES,HCI,GE		
10-l=AVS-161-m01	Avionic	s Syste	-				, p . 0	, , , , , , , , , , , , , , , , , , , ,	, , , , , ,		
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			V (2)	+ Ü (2)	•	•	•			
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Additio	nal Info		Focus ES,LR		tudents of the Master's	s programme Informati	k (Computer Science, 12	o ECTS credits):		
10-HCI=M-	Multimodal User Interfaces										
MUI-161-m01	ECTS 5 Duratio)	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	S		V (2) + Ü (2)							
				presentation of project results (approx. 40 minutes) Language of assessment: German and/or English creditable for bonus							
10-l=BER-212-m01	Comput	tability	Theory			·					
	ECTS	5	Duration)	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	s		V (2)	+ Ü (2)						
				If ann of one date) credit Langu Asses	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 candidate). 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						
	Additio	nal Info	rmation	Focus	ses available for s	tudents of the Master's	s programme Informati	k (Computer Science, 12	o ECTS credits): AT,SE,IT,KI,GE		

07-BI-161-m01	Bioinfor	matics						,				
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses			V (2)	+ Ü (2)			·				
	Method	of asse	essment			prox. 60 to 120 minu						
									replaced by an oral examination			
				date)	Language of assessment: German and/or English							
				credi	table for bonus							
10-I=CB-161-m01	Compile				1		1	1				
	ECTS 5 Duratio				1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				+ Ü (2)							
	Method	of asse	essment			prox. 60 to 120 minu		ton ovamination may be	replaced by an oral examination			
									s (approx. 15 minutes per candi-			
				date)	date).							
				Langi	anguage of assessment: German and/or English reditable for bonus							
	Addition	al Infa	rmation		ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):							
	Addition	iai inio	rmation		SE,IT,IS,GE							
10-l=DDB-212-m01	Deductive Databases											
	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses		,	V (2)	+ Ü (2)	•	•	•	•			
	Method	of asse	essment			prox. 60 to 120 minu						
				If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination								
				or on date)	of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate)							
					table for bonus							
						nt: German and/or Eng	-					
	Addition		rmation	Focus	ses available for st	tudents of the Master'	s programme Informati	k (Computer Science, 12	o ECTS credits): AT,SE,IT,KI			
10-l=EL-212-m01	E-Learni		,				_					
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			` ′	+ Ü (2)				_			
	Method	of asse	essment			prox. 60 to 120 minu			1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
					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								
					anguage of assessment: German and/or English ocuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,HCI,GE							
	Addition	ial Info	rmation	Focus	ses available for st	tudents of the Master'	s programme Informati	k (Computer Science, 12	o ECTS credits): SE,IT,KI,HCI,GE			

10-l=ES-231-m01	Embedded	Systems										
	ECTS 5	Duration		Method of grading numerical grade	Modul level	graduate						
	Courses		V (2) + Ü (2) Module taught in: Ger	rman and/or English								
	Method of	assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus									
	Additional	Information	Focuses available for AT,SE,ES,LR,GE	students of the Master's programme Informati	ik (Computer Science, 12	o ECTS credits):						
10-l=IR-212-m01	Information Retrieval											
	ECTS 5	Duration	1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses		V (2) + Ü (2)		·	-						
	Method of	assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral 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									
	Additional	Information	Focuses available for	students of the Master's programme Informati	ik (Computer Science, 12	o ECTS credits): IT,KI,HCI,GE						
10-HCl=3DUl-161-	3D User Int	terfaces										
mo1	ECTS 5	Duration	1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses		V (2) + Ü (2)									
	Method of	assessment	· ·									
10-l=KT2-212-m01	Computation	onal Complex	kity II									
	ECTS 5	Duration		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 candidate). 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 Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,ES									
	Additional	Information	Focuses available for	students of the Master's programme Informati	ik (Computer Science, 12	o ECIS credits): AT,SE,IT,ES						

10-l=Kl1-212-m01	Artifici	al Intell	igence 1				,				
	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (2) -	+ Ü (2)		•	-			
	Method	d of ass	essment			prox. 60 to 120 minutes). turer at the beginning of the course, the written e	xamination may be	replaced by an oral examination			
				date). credit	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 canguage of assessment: German and/or English						
	Additional Information					udents of the Master's programme Informatik (Co	mputer Science, 120	ECTS credits): AT,SE,KI,HCI			
10-l=Kl2-212-m01	Artifici	al Intell	igence 2		1	·					
	ECTS 5 Duratio			1	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (2) -	(2) + Ü (2)						
	Additio	nal Info	ormation	of one date). credit Langu	creditable for bonus Language of assessment: German and/or English						
10-I=LVS-232-m01					Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,HCI,GE of Distributed Systems						
10 1–243 232 11101	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate			
	Course			V (2) -	+ Ü (2)		ļ.	10			
				If ann of one 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-						
	Additio	nal Info			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,GE,IN						

10-l=ML-212-m01	Mathematica	ıl Logic		1	,	,	,					
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	·	V (2)	+ Ü (2)			•					
	Method of as	sessment	If anr of on date) credi Lang	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). If reditable for bonus anguage of assessment: German and/or English assessment offered: In the semester in which the course is offered and in the following semester								
	Additional In	formation		ses available for s ,KI,ES	students of the Master'	s programme Informatik	(Computer Science, 12	o ECTS credits):				
10-l=Ml-212-m01	Medical Info	matics										
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (2)	+ Ü (2)			'	•				
			of on date) credi	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								
	Additional In		SE,IT	KI,HCI,GE	students of the Master'	s programme Informatik	(Computer Science, 12	o ECTS credits):				
10-I=PEB-182-mo1		Performance Engineering and Benchmarking										
	ECTS 5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ Ü (2) ıle taught in: Eng	lish							
	Method of as	sessment	Lang									
10-I=RAM-161-m01	Computer Ari	thmetic										
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (2)	+ Ü (2)								
	Method of as	sessment	If anr of on date) Lang	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus								
	Additional In	formation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,ES									
Master's with 1 major Co	omputational Mathem	natics (2024)				JMU Würzburg • generated	d 19-Mär-2024 • exam. reg. data	record 88 f24 - - H 2024 page 37 / 57				

10-LU-	Roboti	CS 1	,									
RI=RO1-232-mo1	ECTS	5	Duration	า	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 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 candidate). Language of assessment: German and/or English							
			ormation		ses available for st , LR, HCI, GE	udents of the Master's	programme Informatik ((Computer Science, 120	o ECTS credits):			
10-LU-	Roboti	CS 2										
RI=RO2-232-mo1	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (4) + Ü (2) + P (1) Module taught in: German and/or English							
		Method of assessment			written examination (approx. 60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). 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): KI, ES, LR, HCI, GE								
10-l=ST-232-m01	Discret	te Event	Simulation	on								
	ECTS Course	5 :S	Duration		1 semester Method of grading numerical grade Modul level graduate V (2) + Ü (2)							
	Method	d of ass	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus								
	Additio	onal Info		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	les of I	nteractive	Syste	ms							
mo1	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (2) + Ü (2) Module taught in: German and/or English							
	Method	d of ass	essment	b) ora Langu	a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus							
10-I=SAR-161-m01	Softwa	re Arch	itecture									
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S	,	V (2)	+ Ü (2)	•	•	•				
	Method	d of ass	essment	If ann of one date) Langu	ritten examination (approx. 60 to 120 minutes). announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi- ate). Inguage of assessment: German and/or English editable for bonus							
	Additional Information			Focus SE,IT,		tudents of the Master	s programme Informat	ik (Computer Science, 12	o ECTS credits):			
10-HCI=M-	Machine Learning (for User Interfaces)											
LUI-161-m01	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (2)	+ Ü (2)							
	Method	d of ass	essment	presentation of project results (approx. 40 minutes) Language of assessment: German and/or English creditable for bonus								
10-l=VG-161-m01	Visuali	zation	of Graphs									
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (2)	+ Ü (2)							
	Method	d of ass	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus								
	Additional Information			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,HCI,GE								

10-l=AKA-232-m01	Selecte	Selected Topics in Algorithms											
	ECTS	5	Duration	<u> </u>	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	S	,	V (2)	+ Ü (2)								
	Method of assessment			b) pra on on c) ora d) ora Langu	written examination (approx. 60 to 120 minutes) or practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) or or or one candidate each (approx. 20 minutes) or								
	Additio	nal Info	ormation	Focus AT	ses available for stu	dents of the Master's programme Informatik (C	Computer Science, 12	o ECTS credits):					
10-l=AKT-232-m01	Selecte	ed Topio	cs in Theo	ry			,						
	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	S		V (2)	+ Ü (2)			-					
	method of assessment			a) written examination (approx. 60 to 120 minutes) or b) practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion 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-l=SSS-232-m01		<u> </u>					1						
	ECTS 5 Duration			n 1 semester Method of grading numerical grade Modul level graduate 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 candidate). Language of assessment: English creditable for bonus									
	Additional Information			Focus SEC,I		dents of the Master's programme Informatik (C	Computer Science, 12	o ECTS credits): SE,KI,LR, HCI, ES,					

10-l=NLP-212-m01	Machin	e Lear	ning for Na	atural	Language Processi	 ng						
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (2)	+ Ü (2)				*			
	Method	d of ass		If ann of one date) credit	ritten examination (approx. 60 to 120 minutes). I 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 candiate). I reditable for bonus anguage of assessment: German and/or English							
	Additio	nal Info	ormation	Focus	es available for stu	dents of the Master's	programme Informatik ((Computer Science, 120	ECTS credits): AT,KI,HCI			
10-I=PM-212-m01	Profess	sional F	Project Ma	nagen	nent							
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (4)								
	Method of assessment			of one date) credit 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). creditable for bonus Language of assessment: German and/or English							
	other p			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-	Project	- Curre	nt Topics	in Con	nputer Science			'				
mo1	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course			P (4)								
	Method of assessment			Langu Asses be rep	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)							
	Additional Information			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 an	d Text	Mining		,							
	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
Ì	Course	S		V (2) -	+ Ü (2)		·					
				If ann of one date).	anguage of assessment: German and/or English							
	Additio	nal Info	ormation	Focus	es available for stud	dents of the Master's programme Informatik (Co	mputer Science, 12	o ECTS credits): AT, IT, HCI.				
10-I=SNA-232-m01	Statist	ical Net	work Ana	lysis								
	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses				(2) + Ü (2) odule taught in: English							
				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 candidate). Language of assessment: German and/or English creditable for bonus							
				IN								
10-l=MLN1-232-			ning for Ne									
mo1	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S 		V (2) - Modu	+ U (2) le taught in: English	1		_				
	Method	d of ass	essment	written examination (approx. 60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: English creditable for bonus								
	Additio	nal Info	ormation	Focus	es available for stud	dents of the Master's programme Informatik (Co	mputer Science, 12	o ECTS credits): AT,IT,SE,KI,HCI,IN				

10-l=MLN2-232-	Machine Learning for Networks 2											
mo1	ECTS	5	Duration	ı	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (2) + Ü (2) Module taught in: English							
	Method	Method of assessment			ounced by the lecti	pprox. 20 minutes) o	of the course, the writte		replaced by an oral examination s (approx. 15 minutes per candi-			
	Additional Information			Focus	ses available for stu	idents of the Master's	programme Informatik	(Computer Science, 120	ECTS credits): AT,IT,SE,KI,HCI,IN			
10-l=M-	Multili	ngual N	LP			'		'				
NLP-232-m01	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				V (2) + Ü (2) Module taught in: German and/or English							
	Method of assessment			If anr of on date) Langu	written examination (approx. 60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examinat of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per can date). Language of assessment: English Creditable for bonus							
10-l=QC-221-m01	Quantu	ım Com	municatio	ns								
	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (2) + V (2) Module taught in: English								
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: English creditable for bonus								
	Additio	nal Info	ormation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): LR								

10-I=RLCD-	Reinfor	Reinforcement Learning and Computational Decision Making											
M-232-m01	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	!	Modul level	graduate				
	Courses	5			+ Ü (2) le taught in: Germ	an and/or English							
	Method of assessment			If ann of one date).	vritten examination (approx. 60 to 120 minutes) f announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English Creditable for bonus								
10-l=MIR-232-m01		nformat	ion Retri	eval									
	ECTS	5	Duration		1 semester	Method of grading numerical grade	1	Modul level	graduate				
	Courses	5			+ Ü (2) le taught in: Germa	an and/or English							
) written examination (approx. 60 to 120 minutes) or) oral examination of one candidate each (approx. 20 minutes) or) oral examination in groups of up to 3 candidates (approx. 15 minutes) anguage of assessment: German and/or English Creditable for bonus								
10-l=RRS-232-m01	Remote Sensing												
	ECTS 5 Duratio			1	1 semester	Method of grading numerical grade		Modul level	graduate				
	Courses				V (2) + Ü (2) Module taught in: German and/or English								
	Method of 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 candidate). Language of assessment: German and/or EnglishCreditable for bonus									
	Additio	nal Info				120 Computer Science: LR,IN							
10-l=0R-232-m01	Operati	ons Res	search			·							
	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	1	Modul level	graduate				
	Courses	5		$V(2) + \ddot{U}(2)$ Module taught in: German and/or 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 candidate). Language of assessment: German and/or English creditable for bonus									
	Additional Information			Focus	es available for stu	udents of the Master's programme Infor	matik (Compu	ter Science, 12	o ECTS credits): IN				

10-l=El1-232-m01	Energy	Inform	atics 1									
	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			' (2) + Ü (2) Module taught in: German and/or English							
	Method of assessment			If ann of on date) Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Additio	nal Info	ormation	Focus	ses available for st	udents of the Master's	s programme Informatik (0	Computer Science, 12	o ECTS credits): IN			
Application Subject	t Physik											
11-BSV-161-m01	Image	and Sig	nal Proce	ssing	in Physics							
	ECTS	6	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				V (2) + Ü (2) Module taught in: German or English							
	Method of assessment			amina on/ta If a w form the le	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 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. 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-mo1	Physics	Physics of Advanced Materials										
	ECTS	6	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English								
	Method	d of ass	essment	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 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. 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	nics						1				
	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							
	Method	d of ass	essment	amina on/ta If a w form the le	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exmination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentatin/talk (approx. 30 minutes). 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, ne lecturer must inform students about this by four weeks prior to the original examination date at the latest. ssessment offered: In the semester in which the course is offered and in the subsequent semester anguage of assessment: German and/or English							
11-FKS-161-m01	Solid S	tate Sp	ectrocopy	/								
	ECTS	6	Duratio		1 semester	Method of grading numerical	grade	Modul level	graduate			
	Course	S			(3) + R (1) lodule taught in: German or English							
	Method	Method of assessment			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 insteatorm 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-mo1	Magne	tism										
	ECTS	6	Duratio		1 semester	Method of grading numerical	grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English								
	Method of assessment			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 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English								

11-HNS-161-m01	Optical	Prope	rties of Se	micon	ductor Nanostructur	res	,				
	ECTS	6	Duratio	1	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S	·	V (3) - Modu	+ R (1) lle taught in: Germar	n or English					
	Method	d of ass	essment	amina on/ta If a wi form of the le Asses	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 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English						
11-ASM-161-m01	Method	ds of Ol	servation	ial Ast	ronomy						
	ECTS	6	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate			
	Courses Method of assessment			V (3) - Modu	+ R (1) lle taught in: Germar	n or English					
				amina on/ta If a wiform of the le Asses	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 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. 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	Particle P	hysics							
	ECTS	6	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (3) - Modu	+ R (1) lle taught in: Germar	n or English					
	Method of assessment			amina on/ta If a wiform of the le Asses	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 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 chang 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 F	hysics	;							
	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							
	Method	d of assessment	amin on/ta If a w form the le	vritten 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 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, 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-MAS-161-m01	Multi-w	vavelength Astro	nomy								
	ECTS	6 Duratio		1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		(3) + R (1) lodule taught in: German or English							
	Method	d of assessment	amin on/ta If a w form the le	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 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-QM2-161-m01	Quantu	ım Mechanics 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							
	Method	d of assessment	amin on/ta If a w form the le	ation in groups (grou alk (approx. 30 minul ritten examination w of an oral examinatio ecturer must inform s ssment offered: In th	rox. 90 to 120 minutes) or oral examination of oups of 2, approx. 30 minutes per candidate) or pites). Yas chosen as method of assessment, this may on of one candidate each or an oral examination students about this by four weeks prior to the oral esemester in which the course is offered and in German and/or English	project report (appro be changed and ass in in groups. If the m iginal examination	sessment may instead take the ethod of assessment is changed, date at the latest.				

11-RTT-161-m01	Theory of Relativity										
	ECTS	6 Dura	ion	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English							
	Method	l of assessme	amir on/t If a v form the l Asse	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 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. 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	Physics	s of Complex S	ystems								
	ECTS	6 Dura	ion	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (2) + R (2) Module taught in: German or English							
	Method	d of assessme	amir on/t If a v form the l Asse	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 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. 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	Theoretical Solid State Physics										
	ECTS	8 Dura		1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (4) + R (2) Module taught in: German or English							
	Method	l of assessme	amir on/t If a v form the l Asse	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 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							

11-TFK2-161-m01	Theore	tical Sc	olid State	Physic	 CS 2					
	ECTS	8	Duratio	n	1 semester	Method of grading n	umerical grade	Modul level	graduate	
	Course	:S			+ R (2) ule taught in: Geri	man or English				
	Method of assessment			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 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. 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 Material		nce (DFT)					
	ECTS 8 Duration			1	1 semester	Method of grading n	umerical grade	Modul level	graduate	
	Course	:S		V (4) + R (2) Module taught in: German or English						
				amin on/ta If a w form the le Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination 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. 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		Conformal Field Theory								
	ECTS	6	Duratio		1 semester	Method of grading n	umerical grade	Modul level	graduate	
	Course	!S		V (3) + R (1) Module taught in: German or English						
	Method	d of ass	essment	amin on/ta If a w form the le Asse	ation in groups (galk (approx. 30 minitten examination of an oral examination cturer must infor ssment offered: It	groups of 2, approx. 30 mir inutes). on was chosen as method o	nutes per candidate) or of assessment, this ma ch or an oral examinati four weeks prior to the e course is offered and	r project report (approny by be changed and assion in groups. If the moriginal examination	(approx. 30 minutes) or oral ex- ix. 8 to 10 pages) or presentati- sessment may instead take the ethod of assessment is changed, date at the latest.	

11-KFT2-161-m01	Conformal Field Theory 2										
	ECTS	6 Durati	on	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English							
	Method	d of assessmen	amin on/ta If a w form the le	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 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-CRP-161-m01	Renorm	nalization Grou	and C	ritical Phenomena							
	ECTS	6 Durati	on	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English							
	Method	d of assessmen	amin on/ta If a w form the lo	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 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. 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-mo1	Bosonisation and Interactions in One Dimension										
	ECTS	6 Durati	on	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English							
	Method	d of assessmen	amin on/ta If a w form the le Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination 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. 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-mo1	Introduction to Gauge/Gravity Duality										
	ECTS	8	Duration	1	1 semester	Method of grading numerical gr	rade	Modul level	graduate		
	Courses				V (4) + R (2) Module taught in: German or English						
	Method of assessment			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 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. 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-mo1	Cosmo	logy									
	ECTS 6 Duratio			1	1 semester	Method of grading numerical gr	rade	Modul level	graduate		
	Courses			V (3) + R (1) Module taught in: German or English							
	Method of assessment			amination/tallf a with the leading Assessment	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 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English						
11-AST-161-m01	Theoretical Astrophysics										
	ECTS	6	Duration		1 semester	Method of grading numerical gr	rade	Modul level	graduate		
	Course	S		V (2) + R (2) Module taught in: German or English							
	Method	l of asse	essment	amination/tallf a w form the leads	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 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. 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 Energy Astrophysics										
	ECTS	6 Durat	on	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English							
	Method	d of assessmen	amin on/ta If a w form the le	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 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-QFT2-161-m01	Quantu	ım Field Theory	II			,					
	ECTS	8 Durat	on	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (4) + R (2) Module taught in: German or English							
	Method	d of assessmen	amin on/ta If a w form the la Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination 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. 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	Theoretical Elementary Particle Physics										
	ECTS	8 Durat	on	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (4) + R (2) Module taught in: German or English							
	Method	d of assessmen	amin on/ta If a w form the la Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							

11-ATTP-161-m01	Selected Top	ics of Theo	retical	Elementary Particle	Physics					
	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						
	Method of as	sessment	amina on/ta If a w form the le	ation in groups (grou lk (approx. 30 minut ritten examination w of an oral examinatio ecturer must inform s ssment offered: In th	ups of 2, approx. 30 r tes). vas chosen as metho on of one candidate o students about this b	ninutes per candidate) d of assessment, this reach or an oral examin y four weeks prior to the the course is offered a) or project report (appro may be changed and ass			
11-BSM-161-m01	Models Beyo	nd the Sta	ndard	Model of Elementary	/ Particle Physics					
	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						
			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 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. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-FK2-201-m01	Solid State P	hysics 2								
	ECTS 8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses		V (4) + R (2) Module taught in: German or English							
	Method of as	sessment	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/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							
			Asses							

11-HPH-201-m01	Semiconductor Physics										
	ECTS	6 Dura	ion	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English							
			nation (appoint of the langer Asset)	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/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-FFK-201-m01	Field Th	neory in Solid	State Ph	ysics							
	ECTS	8 Dura	ion	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (4) + R (2) Module taught in: German or English							
	Method	d of assessme	nation (app If a was form the lang	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/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-QIC-201-m01	Advanc	ed Theory of (uantum	Computing and Qua	Intum Information						
	ECTS	6 Dura	ion	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English							
	Method	d of assessme	nation (app If a was form the lang	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/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							

11-TEFK-201-m01	Topological Effects in Solid State Physics										
	ECTS	8	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		V (4) + R (1)							
					le taught in: Germa						
	Method	d 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/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-PTS-201-m01	Phenor	nenolog	gy and Th	eory o	Superconductivity	<u> </u>					
	ECTS	6	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S	•		V (3) + R (1) Module taught in: German or English						
				written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-QFT1-201-m01			Theory I								
	ECTS	8	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course			V (4) + R (2) Module taught in: German or English							
	Method of assessment			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/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	rerequi	sites	Appro	oval from examinati	ion committee require	d.				

11-SLQ-232-m01	Black I	Holes				1				
	ECTS	ECTS 6 Duration Courses			1 semester	Method of grading	numerical grade	Modul level	graduate	
	Course				V (3) + R (1) Module taught in: German or English					
Thesis (30 ECTS cr	Method of assessment			b) ora c) ora d) pro e) pre If a wi form of the le Langu	I examination of on I examination in grouple to report (approx. sentation/talk (approxitten examination voluments) of an oral examination to turer must inform stage of assessment.	e candidate each (appoups (groups of 2, appoups) or orox. 30 minutes). was chosen as methor on of one candidate estudents about this be: German and/or Engiones	prox. 30 minutes) or prox. 30 minutes per candida dof assessment, this may be each or an oral examination in y four weeks prior to the original documents.	changed and ass n groups. If the m inal examination		
10-M=MACM-161-	Master Thesis Computational Mathematics									
mo1	ECTS	30	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Course	25		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 p	rerequi	sites	The supervisor may make the successful completion of certain modules that are relevant for the respective topic a prerequisite for the assignment of the topic.						
	Additio	nal Info	rmation	Time to complete: 6 months.						