

Annex SFB

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

Responsible: Faculty of Mathematics and Computer Science

Responsible: Institute of Mathematics

Examination regulations version: 2016

Examination regulations version: 2016

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)):

13-Jan-2016 (2016-2)

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

Every module will be described using the following form:

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

Compulsory Electiv	es (90	ECTS cre	dits)										
Subfield Mathema	tics (30	ECTS cre	edits)										
10-M=AAAN-161-	Appli	ed Analys	is										
mo1	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cours	es			(4) + Ü (2) Module taught in: German and/or English								
	Metho	od of asse	essment	b) ora c) ora Langu Asses) written examination (approx. 90 to 120 minutes, usually chosen) or) oral examination of one candidate each (approx. 20 minutes) or) oral examination in groups (groups of 2, 15 minutes per candidate) anguage of assessment: German or English assessment offered: In the semester in which the course is offered and in the subsequent semester reditable for bonus								
10-M=AAL-	Topic	s in Algel	ora					,					
G-161-m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cours	es			V (4) + Ü (2) Module taught in: German and/or English								
	Method of assessment			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: In the semester in which the course is offered and in the subsequent semester creditable for bonus								
10-M=ADG-	Differ	ential Ge	ometry										
M-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cours	es		V (4) - Modu	- Ü (2) le taught in: Germar	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 or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus												

10-M=AFT-	Comple	x Analy	/sis										
H-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	S		V (4) - Modu	+ Ü (2) le taught in: Germaı	n and/or English							
	Method	l of asse	essment	b) ora c) ora Langu Asses	written examination (approx. 90 to 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (groups of 2, 15 minutes per candidate) nguage of assessment: German or English sessment offered: In the semester in which the course is offered and in the subsequent semester editable for bonus								
10-M=AGMS-161-	Geomet	tric Stru	ıctures										
mo1	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	S		V (4) - Modu	- Ü (2) le taught in: Germaı	n and/or English							
	Method	l of asse	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: In the semester in which the course is offered and in the subsequent semester creditable for bonus										
10-M=AIST-161-	Industr	ial Stat	istics 1	•									
mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	S			V (4) + Ü (2) Module taught in: German and/or English								
	Method	l of asse	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, 15 r German or English	ninutes per candidate)		emester				
10-M=ALTH-161-	Lie The	ory											
mo1	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	S		\ \ \ \	V (4) + Ü (2) Module taught in: German and/or English								
	Method	l 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 Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus									

10-M=ANG-	Numeri	ic of Lar	ge Systen	ns of Equ	uations			,					
G-161-mo1	ECTS	10	Duration	1	semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) + Ü Module	Ü (2) taught in: Germar	n and/or English							
	Method	d of ass		b) oral e c) oral e Languas Assessr	written examination (approx. 90 to 120 minutes, usually chosen) or								
10-M=AOP-		in Optii	mization										
T-161-m01	ECTS	10	Duration		semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) + Ü Module	+ Ü (2) ule taught in: German and/or English								
	Method	d of ass		b) oral e c) oral e Langua; Assessr	written examination (approx. 90 to 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (groups of 2, 15 minutes per candidate) nguage of assessment: German or English sessment offered: In the semester in which the course is offered and in the subsequent semester editable for bonus								
10-M=ARTH-161-	Control Theory												
mo1	ECTS	10	Duration	1	. semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			V (4) + Ü (2) Module taught in: German and/or English								
	Method	d of ass		b) oral e c) oral e Langua; Assessr	examination of one examination in groge of assessment:	e candidate each (ar ups (groups of 2, 15 German or English	utes, usually chosen) or oprox. 20 minutes) or minutes per candidate) the course is offered and	in the subsequent se	emester				
10-M=ASM-	Stocha	stic Mo	dels of Ris	sk Mana	gement								
R-161-mo1	ECTS	10	Duration	1 1	. semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) + Ü Module	Ü (2) taught in: Germar	n and/or English							
	Method	d of ass		b) oral e c) oral e Langua; Assessr	examination of one examination in gro ge of assessment:	e candidate each (ar ups (groups of 2, 15 German or English	utes, usually chosen) or oprox. 20 minutes) or minutes per candidate) the course is offered and	in the subsequent se	emester				

10-M=AST-	Stocha	stical P	rocesses			,		,					
P-161-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 ass	essment	b) ora c) ora Langu Asses	written examination (approx. 90 to 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (groups of 2, 15 minutes per candidate) nguage of assessment: German or English seessment offered: In the semester in which the course is offered and in the subsequent semester editable for bonus								
10-M=A-	Topolo	gy											
TOP-161-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 ass	essment	b) ora c) ora Langu Asses	written examination (approx. 90 to 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (groups of 2, 15 minutes per candidate) nguage of assessment: German or English sessment offered: In the semester in which the course is offered and in the subsequent semester editable for bonus								
10-M=AVS-	Insurar	Insurance Mathematics 1											
M-161-m01	ECTS	10	Duration		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	b) ora c) ora Langu Asses	l examination of o l examination in grage of assessmen	ne candidate each (aproups (groups of 2, 15 t: German or English	minutes per candidate		emester				
10-M=AZ-	Time S	eries Ar	nalysis 1		,								
RA-161-mo1	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			V (4) + Ü (2) Module taught in: German and/or English								
	Method	d of ass	essment	b) ora c) ora Langu Asses	l examination of o l examination in grage of assessmen	ne candidate each (aproups (groups of 2, 15 t: German or English	minutes per candidate		emester				

10-M=AZTH-161-	Number Theory												
mo1	ECTS 1	10 Du	ration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + Module		an and/or English							
		of assessn		b) oral c) oral Langua Assess credita	written examination (approx. 90 to 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (groups of 2, 15 minutes per candidate) anguage of assessment: German or English assessment offered: In the semester in which the course is offered and in the subsequent semester editable for bonus								
10-M=AGP-		i Prodi Lec	ture (I	Master))								
Cin-152-m01	ECTS 5	5 Du	ration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				(3) + Ü (1) odule taught in: English								
	Method	of assessn		b) oral c) oral Langua Assess	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) c.anguage of assessment: English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus								
10-M=VA-	Selected Topics in Analysis												
NA-161-m01	ECTS 1	10 Du	ration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + Module		an and/or English			_				
	Method	of assessn		b) oral c) oral Langua Assess	examination of o examination in gr age of assessmen	ne candidate each (ap roups (groups of 2, 15 t: German or English	nutes, usually chosen) oprox. 20 minutes) or minutes per candidate the course is offered		emester				
10-M=VAT-	Algebrai	c Topolog	y										
P-161-m01	ECTS 1	10 Du	ration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + Module		an and/or English							
	Method	of assessn		b) oral c) oral Langua Assess	examination of o examination in gr age of assessmen	ne candidate each (ap roups (groups of 2, 15 t: German or English	nutes, usually chosen) oprox. 20 minutes) or minutes per candidate the course is offered		emester				

10-M=VFN-	Selecte	d Topic	s in Finan	cial Mathemat	Selected Topics in Financial Mathematics												
M-161-mo1	ECTS	10	Duration	1 seme	ster	Method of grading	numerical grade	Modul level	graduate								
	Courses	5		V (4) + Ü (2) Module taugh	t in: Germa	an and/or English											
	Method			b) oral examin c) oral examin Language of a Assessment o creditable for) written examination (approx. 90 to 120 minutes, usually chosen) or) oral examination of one candidate each (approx. 20 minutes) or) oral examination in groups (groups of 2, 15 minutes per candidate) anguage of assessment: German or English .ssessment offered: In the semester in which the course is offered and in the subsequent semester reditable for bonus												
10-M=VGDS-161-	Groups and their Representations																
mo1	ECTS	10	Duration		ster	Method of grading	numerical grade	Modul level	graduate								
	Courses	5		V (4) + Ü (2) Module taugh) + Ü (2) dule taught in: German and/or English												
	Method	of asse		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: In the semester in which the course is offered and in the subsequent semester creditable for bonus													
10-M=V-	Geometrical Mechanics																
GEM-161-m01	ECTS	10	Duration	1 semes	ster	Method of grading	numerical grade	Modul level	graduate								
	Courses	5		V (4) + Ü (2) Module taught in: German and/or English													
	Method	of asse		b) oral examinc) oral examinLanguage of a	ation of or ation in gro ssessment ffered: In t	approx. 90 to 120 min ne candidate each (ap oups (groups of 2, 15 t: German or English he semester in which	oprox. 20 minutes) or minutes per candida		emester								
10-M=VIST-161-	Industri	ial Stati	istics 2														
mo1	ECTS	10	Duration		ster	Method of grading	numerical grade	Modul level	graduate								
	Courses	5		V (4) + Ü (2) Module taugh	t in: Germa	an and/or English											
	Method	of asse		b) oral examinc) oral examinLanguage of a	ation of or ation in gro ssessment ffered: In t	approx. 90 to 120 min ne candidate each (ap oups (groups of 2, 15 t: German or English he semester in which	oprox. 20 minutes) or minutes per candida	•	emester								

10-M=V-	Field A	rithmet	ics										
KAR-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (4) - Modu	+ Ü (2) le taught in: Germa	n and/or English							
	Method	d of ass	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap oups (groups of 2, 15 r German or English	minutes per candidate)		emester				
10-M=VN-	Numeri	ic of Pai	tial Diffe	rential	Equations								
PE-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			(4) + Ü (2) Endule 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 or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus									
10-M=VOP-	Selected Topics in Optimization												
T-161-m01	ECTS 10 Duration				1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			V (4) + Ü (2) Module taught in: German and/or English								
	Method	d of ass	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap oups (groups of 2, 15 r German or English	ninutes per candidate)		emester				
10-M=V-	Statist	ical Ana	lysis										
STA-161-m01	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			V (4) + Ü (2) Module taught in: German and/or English								
	Method	d of ass	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap oups (groups of 2, 15 r German or English	ninutes per candidate)		emester				

10-M=VVS-	Insuran	ce Matl	hematics	2				·			
M-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	;			+ Ü (2) le taught in: Germaı	n and/or English					
	Method	of asse	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, 15 r German or English	minutes per candidate		emester		
10-M=VZ-	Time Se	ries An	alysis 2					'			
RA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	;			- Ü (2) le taught in: Germaı	n and/or English					
	Method	of asse	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, 15 r German or English	ninutes per candidate		emester		
10-M=V-	Discrete Mathematics										
DIM-161-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	;		V (3) - Modu	+ Ü (1) le taught in: Germaı	n and/or English					
	Method	of asse	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, app German or English	prox. 10 minutes per ca		emester		
10-M=VD-	Dynami	cal Sys	tems								
SY-161-m01		5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	i		V (3) - Modu	+ Ü (1) le taught in: Germaı	n and/or English					
	Method	of asse	essment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, app German or English	prox. 10 minutes per ca		emester		

10-M=V-	Aspects of Geometry											
GEO-161-mo1	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (3) - Modu	- Ü (1) le taught in: Germaı	n and/or English							
	Method of a	assessment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, app German or English	tes, usually chosen) or prox. 15 minutes) or or or ox. 10 minutes per can the course is offered an		emester				
10-M=V-	Mathemati	cal Continuu	m Mec	lechanics								
KOM-161-mo1	ECTS 5	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (3) - Modu	+ Ü (1) le taught in: Germaı	n and/or English							
	Method of a	assessment	b) ora c) ora Langu Asses	n) 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) c) anguage of assessment: German or English c) Assessment offered: In the semester in which the course is offered and in the subsequent semester c) creditable for bonus								
10-M=VMB-	Mathemati	cal Imaging	•									
V-161-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (3) - Modu	- Ü (1) le taught in: Germaı	n and/or English							
	Method of a	assessment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, app German or English	tes, usually chosen) or prox. 15 minutes) or or or or or or or ox. 10 minutes per can the course is offered an	ndidate)	emester				
10-M=VMPH-161-	Selected To	pics in Math	ematio	al Physics								
mo1	ECTS 10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (4) - Modu	+ Ü (2) le taught in: Germaı	n and/or English							
	Method of a	assessment	b) ora c) ora Langu Asses	l examination of on l examination in gro lage of assessment:	e candidate each (ap ups (groups of 2, 15 r German or English	utes, usually chosen) or prox. 20 minutes) or minutes per candidate) the course is offered an		emester				

10-M=V-	Selected	Topics	in Conti	rol The	ory							
TRT-161-m01	ECTS 1	10	Duration	ı	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Modu	- Ü (2) le taught in: Germar	n and/or English						
	Method	of asse	ssment	b) ora c) oral Langu Asses	l examination of one examination in gro age of assessment:	e candidate each (ap ups (groups of 2, 15 r German or English	minutes per candidate		emester			
10-M=VI-	Inverse F	Problen	ns									
PR-161-m01	ECTS 5	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (3) +	- Ü (1) le taught in: Germar	n and/or English						
	Method o	of asse	ssment	b) ora c) oral Langu Asses) written examination (approx. 60 to 90 minutes, usually chosen) or) oral examination of one candidate each (approx. 15 minutes) or) oral examination in groups (groups of 2, approx. 10 minutes per candidate) anguage of assessment: German or English assessment offered: In the semester in which the course is offered and in the subsequent semester reditable for bonus							
10-M=VMT-	Module Theory											
H-161-m01	ECTS 5	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (3) + Modu	- Ü (1) le taught in: Germar	n and/or English						
	Method o	of asse	ssment	b) ora c) oral Langu Asses	l examination of one examination in gro age of assessment:	e candidate each (ap ups (groups of 2, app German or English	prox. 10 minutes per ca		emester			
10-M=V-	Non-line	ar Anal	ysis					,				
NAN-161-m01	ECTS 5	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (3) + Modu	- Ü (1) le taught in: Germar	n and/or English						
	Method o	of asse	ssment	b) ora c) oral Langu Asses	l examination of one examination in gro age of assessment:	e candidate each (ap ups (groups of 2, app German or English	prox. 10 minutes per ca		emester			

10-M=VOST-161-	Optima	Optimal Control												
mo1	ECTS	5	Duration	ı	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	es		V (3) -	+ Ü (1) le taught in: Germa	an and/or English								
	Metho	d of ass	essment	b) ora c) ora Langu Asses	written examination (approx. 60 to 90 minutes, usually chosen) or oral examination of one candidate each (approx. 15 minutes) or oral examination in groups (groups of 2, approx. 10 minutes per candidate) anguage of assessment: German or English assessment offered: In the semester in which the course is offered and in the subsequent semester editable for bonus									
10-M=VV-		rked Sys	stems											
SY-161-m01	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	es		V (3) - Modu	+ Ü (1) le taught in: Germa	an and/or English								
	Metho	d of ass	essment	ment 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) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus										
10-M=VK-	Complex Geometry													
GE-161-m01	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	es		V (4) - Modu	+ Ü (2) le taught in: Germa	an and/or English								
	Metho	d of ass	essment	b) ora c) ora Langu Asses	l examination of or l examination in gr lage of assessmen	ne candidate each (ap oups (groups of 2, 15 t: German or English	nutes, usually chosen) or oprox. 20 minutes) or minutes per candidate) the course is offered and	in the subsequent se	emester					
10-M=VPD-	Partial	Differe	ntial Equa	tions (of Mathematical Ph	ysics								
P-161-m01	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	es		V (4) - Modu	+ Ü (2) le taught in: Germa	an and/or English								
	Metho	d of ass	essment	b) ora c) ora Langu Asses	l examination of or l examination in gr lage of assessmen	ne candidate each (ap oups (groups of 2, 15 t: German or English	utes, usually chosen) or oprox. 20 minutes) or minutes per candidate) the course is offered and	in the subsequent se	emester					

10-M=V-	Pseudo Riemannian and Riemannian Geometry											
PRG-161-m01	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	i		V (4) + Modu	- Ü (2) le taught in: Germa	n and/or English		•				
	Method	of asse	essment	b) ora c) ora Langu Asses) written examination (approx. 90 to 120 minutes, usually chosen) or) oral examination of one candidate each (approx. 20 minutes) or) oral examination in groups (groups of 2, 15 minutes per candidate) anguage of assessment: German or English ssessment offered: In the semester in which the course is offered and in the subsequent semester reditable for bonus							
10-M=AF-	Function	nal Ana	lysis									
AN-161-m01	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	i			/ (4) + Ü (2) Module taught in: German and/or English							
	Method	of asse	essment	b) ora c) ora Langu Asses	written examination (approx. 90 to 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (groups of 2, 15 minutes per candidate) anguage of assessment: German or English assessment offered: In the semester in which the course is offered and in the subsequent semester areditable for bonus							
10-M=VAD-	Applied Differential Geometry											
G-161-m01	ECTS	10	Duration	1	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 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 Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus								
10-M=VG-	Giovann	i Prodi	Lecture S	Selecte	d Topics (Master)							
PSin-152-m01	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	i		$V(4) + \ddot{U}(2)$ Module taught in: English								
	Method of assessment			b) ora c) ora Langu Asses	l examination of on l examination in gro age of assessment:	examination (approx. 90 to 120 minutes, usually chosen) or amination of one candidate each (approx. 20 minutes) or amination in groups (groups of 2, 15 minutes per candidate) of assessment: English ent offered: In the semester in which the course is offered and in the subsequent semester e for bonus						

10-M=VG-	Giovanni	Giovanni Prodi Lecture Advanced Topics (Master)											
PAin-152-mo1	ECTS 1	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + Modu	- Ü (2) le taught in: English			,					
	Method	of asse	essment	b) ora c) oral Langu Asses	written examination (approx. 90 to 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (groups of 2, 15 minutes per candidate) anguage of assessment: English ssessment offered: In the semester in which the course is offered and in the subsequent semester reditable for bonus								
10-	Giovanni	i Prodi	Lecture I	Nodern	Topics (Master)				'				
M=VGPMin-152- mo1	ECTS 1	10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
IIIOI	Courses				(4) + Ü (2) odule taught in: English								
	Method of assessment			b) ora c) oral 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: English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus								
10-M=MP1-161-	Analysis and Geometry of Classical Systems												
mo1	ECTS 1	10	Duration	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 or English creditable for bonus									
10-M=MP2-161-	Algebra	and Dy	namics o	f Quan	tum Systems								
mo1	ECTS 1	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 assessment			b) ora c) oral Langu	l examination of one	candidate each (ap ups (groups of 2, 15 r	utes, usually chosen) o prox. 20 minutes) or minutes per candidate)						

Subfield Researc	ch in Group	s and S	eminars ((10 EC	TS credits)								
10-M=GAL-	Researc	h in Gr	oups - Al	gebra									
G-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	5			V (2) + S (2) Module taught in: German and/or English								
	Method	of ass	essment	Langi	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=G- DIM-161-m01	Research in Groups - Discrete Mathematics												
	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	Courses			+ S (2) ule taught in: Germa	n and/or English		•					
	Method	of ass	essment	Langi	k (60 to 120 minutes) nguage of assessment: German or English sessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=GD-	Researc	:h in Gr	oups - Dy	namic	namical Systems and Control Theory								
SC-161-m01	ECTS	ECTS 10 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			` '	+ S (2) ıle taught in: Germa	n and/or English							
	Method of assessment			Langi	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=G-	Researc	h in Gr	oups - Co	mplex	plex Analysis								
COA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	5	·	V (2) + S (2) Module taught in: German and/or English									
	Method of assessment			talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester									
10-M=GGM-	Researc	h in Gr	oups - Ge	ometr	y and Topology	,		·					
T-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	Courses			V (2) + S (2) Module taught in: German and/or English								
	Method	of ass	essment										

10-M=GM-	Rese	arch in Gi	roups - Ma	athema	atics in Context							
CX-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	ses			V (2) + S (2) Module taught in: German and/or English							
	Meth	od of ass	essment	Langi	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=GM-	Rese	arch in Gi	roups - Ma		thematics in the Sciences							
SC-161-m01	ECTS	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	ses	•		+ S (2) le taught in: German	and/or English		·				
	Method of assessment			Langu	alk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=G-	Rese	arch in Gı	roups - Mo	easure	asure and Integral							
MAI-161-m01	ECTS 10 Duratio			1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				+ S (2) le taught in: German	and/or English		·				
	Method of assessment			Langi	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=GN-	Research in Groups - Numerical Mathematics and Applied Analysis											
MA-161-m01	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	ses		V (2) + S (2) Module taught in: German and/or English								
	Method of assessment			talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=GROC-161-	Rese	arch in Gı	oups - Ro	botics	, Optimization and C	ontrol Theory		'				
mo1	ECTS	10	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 of assessment			talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								

10-M=GT-	Rese	arch in Gr	oups - Tii	me Ser	ies Analysis			1				
SA-161-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	ses			V (2) + S (2) Module taught in: German and/or English							
	Meth	od of ass	essment	Langi	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=G-	Rese	arch in Gr	oups - St	atistic	tistics							
STA-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	ses			+ S (2) le taught in: German	and/or English		'				
	Method of assessment			Langu	alk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=GNTH-161-	Rese	arch in Gr	oups - Nu	ımber	mber Theory							
mo1	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				+ S (2) le taught in: German	and/or English		,				
	Method of assessment			Langi	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=GC-	Research in Groups - Control Theory of Quantum Mechanical Systems											
QS-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	ses		V (2) + S (2) Module taught in: German and/or English								
	Method of assessment			talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=GD-	Rese	arch in Gr	oups - Di	fferent	ial Geometry			'				
GE-161-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: German and/or English								
	Method of assessment											

10-M=GDF-	Research in Groups - Deformation Quantization											
Q-161-mo1	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	 ,		+ S (2)	•		•					
				Module taught in: German and/or English								
	Method of as	ssessment		ralk (60 to 120 minutes)								
				Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=GN-	Research in	Groups - No		1-linear Analysis								
LA-161-mo1	ECTS 10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	Duratio		+ S (2)	Method of Stading	numerical grade	Modulitevel	graduate				
	Courses			le taught in: Germar	n and/or English							
	Method of as	ssessment		60 to 120 minutes)	<u> </u>							
				anguage of assessment: German or English								
				ssessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=GO- PA-161-mo1		<u> </u>		rator Algebras								
PA-161-11101	ECTS 10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			+ S (2) le taught in: Germar	n and/or English							
	Method of as	ssessment		o to 120 minutes)								
				Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=SAD-	Seminar in Applied Differential Geometry											
G-161-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	•	S (2)									
				le taught in: Germar	n and/or English							
	Method of as	ssessment		so to 120 minutes)								
				age of assessment: sment offered: In th		the course is offered ar	nd in the subsequent se	emester				
10-M=SAL-	Seminar in A	lgebra										
G-161-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		S (2) Module taught in: German and/or English									
	Method of as	sessment	talk (60 to 120 minutes)									
			Langu	Language of assessment: German or English								
			Asses	Assessment offered: In the semester in which the course is offered and in the subsequent semester								

10-M=SD-	Semi	nar in Dy	/namical S	ystem	s and Control	1							
SC-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 as:	sessment		talk (60 to 120 minutes)								
				Langu	Language of assessment: German or English								
10-M=S-	Somi	nar in Co	mplex An		Assessment offered: In the semester in which the course is offered and in the subsequent semester								
COA-161-mo1	ECTS		Duratio	<u> </u>	1 semester	Method of grading numerical grade		Modul level	graduate				
	Cour		Duratio	S (2)	1 Schiester	Method of grading	numerical grade	Modulitevel	graduate				
	Cour	363			le taught in: Germar	n and/or English							
	Method of assessment			Langi	alk (60 to 120 minutes) anguage of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=S-	Semi	nar in Fi	nancial an	d Insur	Insurance Mathematics								
FIM-161-m01	ECTS 5 Duratio		1	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Cour	Courses		S (2) Modu	le taught in: Germar	n and/or English							
	Meth	od of as	sessment	Langi	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=S-	Seminar in Geometry and Topology												
GTO-161-m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cour	ses		S (2) Module taught in: German and/or English									
	Method of assessment			talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester									
10-M=SGP-	Giova	anni Prod	di Seminar	(Mast	er)			,					
Cin-152-m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			S (2) Module taught in: English									
	Method of assessment			talk (60 to 120 minutes) Language of assessment: English Assessment offered: In the semester in which the course is offered and in the subsequent semester									

10-M=SID-	Interdi	sciplina	ry Semin	ar								
C-161-m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		S (2) Modu	(2) odule taught in: German and/or English							
	Method	d of ass	essment		alk (60 to 120 minutes)							
					anguage of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=SM-	Comina	Math	ematics i	and in the subsequent se	emester							
SC-161-mo1	ECTS		Duration		1 semester	Method of grading	numorical grado	Modul level	graduate			
	Course	5 s	Duration	S (2)	le taught in: Germa		Thumencat grade	Modulitevel	graduate			
	Method	Method of assessment			lk (60 to 120 minutes) anguage of assessment: German or English assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=SN-	Semina	ar in Nu	merical M	athem	atics and Applied A	Analysis						
MA-161-m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			S (2) Modu	le taught in: Germa	an and/or English		,				
	Method	Method of assessment			talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
10-M=SOP-	Seminar in Optimization											
T-161-m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S		S (2) Module taught in: German and/or English								
	Method of assessment			talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
10-M=S-	Semina	ar in Sta	itistics									
STA-161-m01	ECTS	5	Duratio	on 1 semester Method of grading numerical grade Modul level gradua				graduate				
	Course	S		S (2) Module taught in: German and/or English								
	Method of assessment			t talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								

10-M=SN-	Seminar	in Nor	ı-linear A	nalysis	lysis								
LA-161-m01	ECTS 4	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 asse	essment	Langu	talk (60 to 120 minutes) Language of assessment: German or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
Subfield Learning a	ınd Teach	ing											
10-M=EL-	Learning	by Te	aching 1										
T1-161-m01	ECTS 4	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			T (o)									
	Method	of asse	essment	Asses	ssessment of tutoring activities by supervising lecturers or exercise supervisors (1 to 2 teaching units)								
10-M=EL-	Learning	by Te	aching 2										
T2-161-m01	ECTS 5	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			T (o)									
	Method	of asse	essment	Asses	sment of tutoring ac	ctivities by supervisir	g lecturers or exercise	supervisors (1 to 2 teac	hing units)				
Subfield Optional A	Applicatio	n Subj	ect and/o	or Inter	ship								
Application Subject	t Biology												
07-MS2BI-152-m01	Bioinfor	matics											
	ECTS 1	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) - Modu	- S (1) le taught in: Germar	n and/or English							
	Method	of asse	essment	a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English									
07-MS2BIF1-152-	Bioinfor	matics	F1										
mo1	ECTS 1	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				P (14) + S (1) Module taught in: German and/or English								
	Method of assessment			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	F ₂										
mo1	ECTS	15	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate				
	Course	S			+ S (1)			,					
					le taught in: Germar								
	Method	l of asse	essment		a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or								
					oral examination of one candidate each (30 to 60 minutes) or								
					oral examination in groups of up to 3 candidates (30 to 60 minutes) or								
					sentation (20 to 45	minutes) German and/or Engl	ich						
07-MBI-B-152-m01	Bioinfo	rmatics	R	Langu	age of assessment.	derinan and/or Lingt	.1511						
07 1101 132 11101	-	5	Duration	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate				
	Course			V (2)			, ,						
					dule taught in: German and/or English								
	Method	d of asse	essment		written examination (30 to 60 minutes, including multiple choice questions) or								
					c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes)								
						German and/or Engl							
07-MS3S-152-m01	Systems Biology												
	ECTS	10	Duratio		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 asse	ssment		a) written examination (30 to 60 minutes, including multiple choice questions) or								
					c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes)								
						German and/or Engl							
07-MS3SYF1-152-	System	s Biolog	gy F1										
mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		P (14) + S (1) Module taught in: German and/or English									
	Method of assessment			a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English									

07-MS3SYF2-152-	System	s Biolo	gy F2		,							
mo1	ECTS	15	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	S			P (29) + S (1) Module taught in: German and/or English							
	Method	d of ass	essment	a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or 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	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	S		V (2) Modu	le taught in: Germar	n and/or English						
	Method	d of ass	essment	a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English								
Application Subject	t Chemie	e										
08-PCM1a-161-	Laser S	pectros	scopy									
mo1	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses	S		S (2) - Modu	+ Ü (1) le taught in: Germar	n or English						
	Method	d 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 Che	mistry	(Lab)							
mo1	ECTS	5	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	Courses			P (4) Module taught in: German or English							
		Method of assessment			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							
	Additional Information			Additional information on module duration: block taught lab course with approx. 20 working days.								

08-PCM2-161-m01	Statistical Mechanics a	nd Reaction Dynamics		1					
	ECTS 5 Duratio	n 1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses	S (2) + Ü (1) Module taught in: Ger	man or English	•					
	Method of assessment	b) oral examination of c) talk (approx. 30 mi	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-PCM3-161-m01	Nanoscale Materials								
	ECTS 5 Duratio		Method of grading numerical grade	Modul level	graduate				
	Courses	S (2) + Ü (1) Module taught in: Ger	man or English						
	Method of assessment	a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus							
08-PCM4-161-m01	Ultrafast spectroscopy	and quantum-control							
	ECTS 5 Duratio	n 1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses	S (2) + Ü (1) Module taught in: Ger	man or English						
	Method of assessment	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							
	other prerequisites								
08-PCM5-161-m01	Physical Chemistry of S	Supramolecular Asseml	olies						
	ECTS 5 Duratio	n 1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses	S (2) + Ü (1) Module taught in: Ger	man or English						
	Method of assessment	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	Physica	al Chem	nistry (Adv	anced	Lab)						
	ECTS	5	Duratio	1	1 semester	Method of grading (not) succes	sfully completed	Modul level	graduate		
	Course	S		P (4)							
					Module taught in: German or English						
	Method	or ass	essment		presentation (approx. 20 minutes) Language of assessment: German and/or English Additional information on module duration: block taught lab course with approx. 20 working days.						
	Additio	nal Info	rmation	Addit							
08-TCM2-161-m01	Basics	and Ap	plications	of Qu	antum Chemistry						
	ECTS	5	Duratio		1 semester	Method of grading numerical gr	rade	Modul level	graduate		
	Courses			S (2) -							
	Method	d of ass	essment	b) ora c) ora d) log e) pre) written examination (approx. 90 to 180 minutes) or) oral examination of one candidate each (20 to 30 minutes) or) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or) log (approx. 20 pages) or) presentation (approx. 30 minutes) anguage of assessment: German and/or English						
08-TCM3-161-m01	Numeri	cal Met	thods and	Progra	amming						
	ECTS	5	Duration	1	1 semester	Method of grading numerical gr	rade	Modul level	graduate		
	Course			S (2) -							
	Method	d of ass	essment	b) ora c) ora d) log e) pre	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						
o8-TCM4-161-mo1	Quantu	m Dyna	amics								
	ECTS	5	Duratio	1	1 semester	Method of grading numerical gr	rade	Modul level	graduate		
	Course			S (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) presentation (approx. 30 minutes) Language of assessment: German and/or English							

08-TCM1-161-m01	Selecte	d Topic	s in Theo	retical	Chemistry	1					
	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	S		S (2) -	S (2) + Ü (2)						
	Method	l of asse	essment	a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English							
08-TCAP1-161-m01		tical Ch	<u>`</u> _	- _	t course quantum cl	 					
	ECTS	5	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Courses			P (5)							
				Langu	oresentation (approx. 30 minutes) Language of assessment: German and/or English						
	Additio	nal Info	rmation	Addit	ional information or	module duration: b	lock taught lab course with app	rox. 20 working	g days.		
08-TCAP2-161-m01	Theore	tical Ch	emistry -	Projec	t course quantum d	-					
	ECTS	5	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	graduate		
	Courses	S		P (5)							
	Method	l of asse	essment		presentation (approx. 30 minutes) Language of assessment: German and/or English						
	Additio	nal Info	rmation	Addit	ional information or	n module duration: b	lock taught lab course with app	rox. 20 working	days.		
Application Subject	t Compu	ter Scie	nce and A	Aerosp	ace Computer Scien	ice					
10-I=SEM3-161-	Semina	r 1 - Cur	rent Topi	ics in C	Computer Science						
mo1	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses	S		S (2)	_						
	Method	l of asse	essment	puter	term paper (10 to 15 pages) and presentation (30 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: German and/or English						
	Additio	nal Info	rmation		es available for stud CI´, GE.	dents of the Master's	s programme Informatik (Compu	iter Science, 12	o ECTS credits): AT, SE, IT, IS, ES,		

10-I=APR-161-m01	Advanc	ed Prog	gramming					,			
	ECTS	5	Duration	1	1 semester	Method of grading numerical grad	е	Modul level	graduate		
	Course	S		V (2) -	$V(2) + \ddot{U}(2)$						
	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	nal Info	rmation		es available for st LR, HCI, ES,GE	udents of the Master's programme Info	ormatik (Compu	ter Science, 12	o ECTS credits):		
10-l=AA-152-m01	Advanc	ed Auto	mation								
	ECTS	8	Duration	1	1 semester	Method of grading numerical grad	е	Modul level	graduate		
	Courses			V (4) -	+ Ü (2)						
	Method of assessment			written examination (approx. 60 to 120 minutes) creditable for bonus							
				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,IS,ES,LR,GE							
	Referre	d to in I	PO I	§ 22 II Nr. 3 b)							
10-l=AGIS-161-m01	Algorit	hms for	Geograp	hic Information Systems							
	ECTS	5	Duration	1	1 semester	Method of grading numerical grad	e	Modul level	graduate		
	Course	S		V (2) -	+ Ü (2)						
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Additio	nal Info		Focus AT,IS,		udents of the Master's programme Info	ormatik (Compu	ter Science, 12	o ECTS credits):		

10-l=AG-161-m01	Compu	tationa	l Geometr	у							
	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	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						
			- (-	AT,HC		udents of the Master's programme Informatik ((Computer Science, 12	o ECTS credits):			
10-l=APA-161-m01			n Algorith								
	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (2)	+ Ü (2)						
	Method of assessment			If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Additio	Additional Information			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,GE						
		d to in I		§ 22 l	§ 22 II Nr. 3 b)						
10-I=AUT-161-m01	Automa	ata The	ory								
	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate			
	Course			• • •	+ 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	nal Info	ormation	Focus	es available for st	udents of the Master's programme Informatik (Computer Science, 12	o ECTS credits): AT, IT, ES, HCI, GE			

10-I=AVS-161-m01	Avionics Systems										
	ECTS	5	Duration		ster	Method of grading	numerical grade	Modul level	graduate		
	Course	S		V (2) + Ü (2)		,		*			
	Method	d of ass		If announced to of one candidate). Language of as	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		Focuses availa ES,LR	ıble for s	tudents of the Master's	programme Informa	tik (Computer Science, 1	20 ECTS credits):		
10-HCI=M-	Multim	odal Us	er Interfa	ces		,					
MUI-161-m01	ECTS	5	Duration	1 semes	ster	Method of grading	numerical grade	Modul level	graduate		
	Course	S		V (2) + Ü (2)							
	Method of assessment			Language of a	resentation of project results (approx. 40 minutes) anguage of assessment: German and/or English reditable for bonus						
	Additional Information			Focuses availa	ıble for s	tudents of the Master's	programme Informa	tik (Computer Science, 1	20 ECTS credits): HCI,GE.		
	Referred to in LPO I			§ 22 II Nr. 3 b)							
10-l=BER-161-m01	Computability Theory										
	ECTS 5 Duratio			1 semes	ster	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 cardate). Language of assessment: German and/or English creditable for bonus							
	Additio	nal Info	rmation	Focuses availa AT,SE,IT,IS,GE	ıble for s	tudents of the Master's	programme Informa	tik (Computer Science, 1	20 ECTS credits):		
07-BI-161-m01	Bioinfo	rmatics	•								
	ECTS	5	Duration	1 semes	ster	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		V (2) + Ü (2)							
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							

10-l=CB-161-m01	Compi	ler Cons	struction								
	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es		V (2)	+ Ü (2)			•			
	Metho	d of ass	essment	If ann of on date) Langu	Language of assessment: German and/or English						
	Additio	onal Info	ormation	Focus	reditable for bonus Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,IS,GE						
10-I=DDB-161-m01	Deduct	tive Dat	abases					'			
	ECTS 8 Duratio			1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	es		V (4)	+ Ü (2)	•	•	•			
	method of dosessment			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,SE,IT,IS						
10-l=EL-161-m01	E-Lear	ning	'			'		'			
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	25		V (2)	V (2) + Ü (2)						
	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 examinatio of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi date). Language of assessment: German and/or English creditable for bonus						
	Additio	onal Info	ormation		ses available for stu IS,HCI,GE	udents of the Master'	s programme Informati	k (Computer Science, 12	o ECTS credits):		
10-MCS=H-	Introd	uction i	nto Humai	1-Com	puter Interaction						
Cl-161-m01	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	25		V (2)	+ Ü (2)						
	Metho	d of ass	essment	Langu	presentation of project results (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus						

10-I=ES-161-m01	Embed	ded Sys	stems								
	ECTS	8	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (4) ·	/ (4) + Ü (2)						
	Method	d of ass	essment	If ann of one date). Langu	written examination (approx. 60 to 120 minutes). f announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
				AT,SE	,ES,LR,GE	tudents of the Master's programme Informatik (Com	puter Science, 12	o ECTS credits):			
10-l=PA-161-m01	Analys	is and [esign of l	Progra	ms			-			
	ECTS 5 Duratio			1	1 semester	Method of grading numerical grade	Modul level	graduate			
	Courses			V (2) ·	+ Ü (2)						
	Method of assessment			If ann of one date). Langu credit	If announced by the lecturer at the beginning of the course, the written examination may be replaced by ar of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 m date). Language of assessment: German and/or English creditable for bonus						
	Additional Information				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IS,ES,GE						
10-l=IR-161-m01	Informa	ation R	etrieval								
	ECTS	5	Duration		1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (2) ·	V (2) + Ü (2)						
	Method	d of ass	essment	If ann of one date). Langu	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
	Additio	nal Info	rmation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,IS,HCI,GE						

-	3D User Inter	faces									
mo1	ECTS 5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses		V (2) -	+ Ü (2)							
	Method of as	sessment		presentation of project results (approx. 30 minutes)							
				Language of assessment: German and/or English creditable for bonus							
	Additional In	formation			dents of the Master's programme Informatik (Co	mnutar Science 12	o FCTS cradits). HCL GF				
	Referred to in			Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI,GE. § 22 II Nr. 3 b)							
10-l=KT2-161-m01	Computation										
101 112 101 11101	ECTS 5	Duratio		1 semester Method of grading numerical grade Modul level graduate							
	Courses	2 4. 40.0	V (2) -	<u> </u>	method of Stating name to at State	1110000110101	Januario				
	Method of as	sessment			rox. 60 to 120 minutes).		-				
			If ann	ounced by the lectu	rer at the beginning of the course, the written ex						
			of one date).	•	pprox. 20 minutes) or an oral examination in gro	oups of 2 candidate	s (approx. 15 minutes per candi-				
					: German and/or English						
			credit	editable for bonus							
	Additional In		Focus	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, SE, IT, ES							
10-l=Kl1-161-m01	Artificial Intelligence 1										
	ECTS 5	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses		V (2) -				_				
	Method of as	sessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination							
			of one	of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi-							
			date).								
	Additional In	formation			dents of the Master's programme Informatik (Co	mnutor Ccionco 40	o ECTS crodits).				
	Additional in	IOIIIIatioii		,IS,HCI	dents of the master's programme informatik (Co	inputer Science, 12	o EC13 cleatis):				
10-l=Kl2-161-m01	Artificial Inte	lligence 2									
	ECTS 5	Duratio	,	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses		V (2) -			,					
	Method of as	sessment			rox. 60 to 120 minutes).						
			of one	ounced by the lectu e candidate each (a	rer at the beginning of the course, the written express, 20 minutes) or an oral examination in gro	kamination may be ouns of 2 candidate	replaced by an oral examination s (approx. 15 minutes per candi-				
			date).	f one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candiate).							
				Language of assessment: German and/or English creditable for bonus							
	Additional In	formation		es available for stu ,IS,HCI,GE	dents of the Master's programme Informatik (Co	mputer Science, 12	o ECTS credits):				

10-I=LVS-161-m01	Perform	nance l	Evaluation	of Dis	stributed Systems	<u> </u>		,				
	ECTS	8	Duration		1 semester	•	numerical grade	Modul level	graduate			
	Course	S	,	V (4)	+ Ü (2)	•						
	Method	d of ass	essment	If and 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							
	Additio	nal Info	ormation	Focu AT,IT		tudents of the Master'	s programme Informati	k (Computer Science, 12	o ECTS credits):			
10-l=ML-161-m01	Mather	matical	Logic									
	ECTS 5 Duration			1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2)	(2) + Ü (2)							
				of on date) Lang credi	e candidate each). uage of assessme table for bonus	replaced by an oral examination s (approx. 15 minutes per candi-						
	Additional Information				Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IS,ES							
10-l=Ml-161-m01	Medica	al Inform	natics									
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course				V (2) + Ü (2)							
	Method	d of ass	sessment	If and 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							
	Additio	nal Info	ormation		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,IS,HCI,GE							

10-I=PEB-161-m01	Performance	e Engineerin	g & Benchmarking of	Computer Systems	,						
	ECTS 5	Duratio	n 1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses		V (2) + Ü (2)	·							
	Method of a	ssessment	If announced by the loof one candidate each date). Language of assessm	Language of assessment: German and/or English							
	Additional Ir	nformation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,ES,HCI,GE								
10-I=RAM-161-m01	Computer Arithmetic										
	ECTS 5	Duratio	n 1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses		V (2) + Ü (2)	·	•						
	Method of a		If announced by the lo of one candidate each date). Language of assessm creditable for bonus	anguage of assessment: German and/or English reditable for bonus							
	Additional Ir	nformation	Focuses available for AT,ES	students of the Master's programme Informatik (C	Computer Science, 12	o ECTS credits):					
10-l=RO1-152-mo1	Robotics 1										
	ECTS 8	Duration	n 1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses		V (4) + Ü (2)								
	Method of a	ssessment	written examination (approx. 60 to 90 minutes) creditable for bonus								
	Additional Ir	nformation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IS,ES,LR,HCI								
	Referred to i	n LPO I	§ 22 II Nr. 3 b)								
10-l=RO2-152-mo1	Robotics 2										
	ECTS 8	Duratio	n 1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses		V (4) + Ü (2)		·						
	Method of a	ssessment	written examination (approx. 60 to 90 minutes) creditable for bonus								
	Additional Ir	nformation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT, ES, LR								
	Referred to i	n LPO I	§ 22 II Nr. 3 b)								

10-l=ST-161-m01	Discrete	Event	Simulation	on .	,		, 					
	ECTS	8	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (4)	+ Ü (2)							
	Method	of ass	essment	written examination (approx. 60 to 120 minutes).								
				If ann	If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination							
				date)	f one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candiate).							
				Langu	Language of assessment: German and/or English							
					creditable for bonus							
10-HCI=RIS-161-	Addition	nal Info	rmation	Focus IT,IS,I		dents of the Master's programme Informatik (Comp	outer Science, 12	o ECTS credits):				
	Real-Time Interactive Systems											
mo1	ECTS 5 Duratio			1	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (2)	+ Ü (2)							
	Method	of asso	essment	writte	n examination (app	rox. 60 to 120 minutes).						
				If ann	ounced by the lectu	rer at the beginning of the course, the written exan oprox. 20 minutes) or an oral examination in group	nination may be	replaced by an oral examination				
				date)		pprox. 20 illinutes) of all oral examination in group	is of 2 candidate.	s (approx. 15 illiliates per callul-				
					anguage of assessment: German and/or English							
				credit	able for bonus							
10-I=SAR-161-m01			1		1	1	1					
	ECTS 5 Duratio				1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses				+ Ü (2)							
	Method	of asso	essment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination								
					of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candi-							
					date).							
				Language of assessment: German and/or English creditable for bonus								
	Addition	nal Info	rmation	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,ES								
	Referred	l to in L	PO I	§ 22 l	§ 22 II Nr. 3 b)							
10-HCI=M-	Machine	e Learn	ing (for U	ser Int	terfaces)							
LUI-161-m01	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (2)	+ Ü (2)							
	Method	of ass	essment			sults (approx. 40 minutes)						
				Language of assessment: German and/or English creditable for bonus								
	Addition	nal Info	rmation	Focus	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI,GE.							
	Referred	l to in I	PO I	§ 22 l	I Nr. 3 b)							
								<u> </u>				

10-l=VG-161-m01	Visuali	zation (of Graphs			-		1	-	
	ECTS	5	Duration	1	1 semester	Method of grading numerical gra	ade	Modul level	graduate	
	Course	S		V (2)	+ Ü (2)					
	Method	l of ass	essment	If anr of on date) Lange	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 candilate). anguage of assessment: German and/or English reditable for bonus					
	Additional Information			AT,IT,	HCI,GE	tudents of the Master's programme In	ıformatik (Compu	iter Science, 120	o ECTS credits):	
	Referre			_	II Nr. 3 b)			,		
10-I=AKA-161-m01	Selecte	d Topic	s in Algo	rithms						
	ECTS	5	Duration		1 semester	Method of grading numerical gra	ade	Modul level	graduate	
	Course	S		V (2)	+ Ü (2)					
	Method of assessment			If anr of on date) Lange	If announced by the lecturer at the beginning of the course, the written examination may be replaced by an ora of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minut date). Language of assessment: German and/or English creditable for bonus					
	Additional Information			Focus AT	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT					
10-l=AKT-161-m01	Selecte	d Topic	s in Theo	ry						
	ECTS	5	Duration		1 semester	Method of grading numerical gra	ade	Modul level	graduate	
	Course	S		V (2)	+ Ü (2)					
	Method	l of ass	essment	If anr of on date) Lange	nounced by the leach e candidate each	pprox. 60 to 120 minutes). cturer at the beginning of the course, t (approx. 20 minutes) or an oral exami nt: German and/or English				
	Additio	nal Info	rmation	Focus AT	ses available for s	tudents of the Master's programme In	ıformatik (Compu	iter Science, 120	o ECTS credits):	

Application Subject	t Physik											
11-BSV-161-mo1	Image a	and Sig	nal Proce	ssing i	in Physics							
	ECTS	6	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S	,		V (2) + Ü (2) Module taught in: German or English							
	Method of assessment			a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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-QUI-161-m01	Quantum Information Technology											
	ECTS 6 Duration			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (3) + R (1) Module taught in: German or English								
	Method of assessment			a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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-PMM-161-mo1	Physics	of Adva	anced Ma	terials								
	ECTS	6	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (3) +			,					
					le taught in: Germ							
	Method	of asse		a) writ	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes).							
				e) pres	sentation/taik (af itten examinatior	oprox. 30 minutes). I was chosen as method of assessment, this may	be changed and ass	sessment may instead take the				
				form o	of an oral examina	ation of one candidate each or an oral examinatio	on in groups. If the m	ethod of assessment is changed,				
						n students about this by four weeks prior to the o	riginal examination	date at the latest.				
						nt: German and/or English the semester in which the course is offered and i	in the subsequent se	emester				
11-SPI-161-m01	Spintror	nics										
	ECTS	6	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (3) + Modul	R (1) le taught in: Germ	nan or English						
	Method	of asse		a) writ	a) written examination (approx. 90 to 120 minutes) or							
				b) oral	b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or							
				d) project report (approx. 8 to 10 pages) or								
				e) pres	e) presentation/talk (approx. 30 minutes).							
					If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed,							
					he lecturer must inform students about this by four weeks prior to the original examination date at the latest.							
				Langu	anguage of assessment: German and/or English							
-14	0.11.0			Asses	Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-FK2-161-m01	Solid St			ſ			TAA 1 11 1	<u> </u>				
		8	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (4) + R (2) Module taught in: German or English								
	Method	of asse				(approx. 90 to 120 minutes) or						
						one candidate each (approx. 30 minutes) or groups (groups of 2, approx. 30 minutes per cand	idate) or					
				d) proj	ject report (appro	x. 8 to 10 pages) or						
						oprox. 30 minutes).	. h. a.					
				If a written examination was chosen as method of assessment, this may be changed and assessment may instead take to form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is character to 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	Sment offerea: In	the semester in which the course is offered and i	in the subsequent se	emester				

11-FKS-161-m01	Solid Sta	ate Spect	trocopy	•								
	ECTS	6 C	Ouration)	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses				+ R (1)							
					Module taught in: German or English							
	Method	of assess		a) wri	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or							
				d) pro								
				e) pre	esentation/talk (a	pprox. 30 minutes)	h - ah					
						n was chosen as method of assessment, this may ation of one candidate each or an oral examinatio						
						n students about this by four weeks prior to the o						
						nt: German and/or English						
				Asses	ssment offered: In	the semester in which the course is offered and i	n the subsequent se	emester				
11-MAG-161-m01	Magneti						1					
			Ouration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses				(3) + R (1) Nodule taught in: German or English							
	Method	of assess		a) wri	a) written examination (approx. 90 to 120 minutes) or							
					b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or							
				d) project report (approx. 8 to 10 pages) or								
				e) pre	e) presentation/talk (approx. 30 minutes).							
					If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the							
					orm of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, he lecturer must inform students about this by four weeks prior to the original examination date at the latest. .anguage of assessment: German and/or English							
				Asses	Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-HLPH-161-m01	Semicon	nductor P	hysics				'					
	ECTS	6 [Ouration)	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses				+ R (1)							
				Module taught in: German or English								
	Method	of assess				(approx. 90 to 120 minutes) or one candidate each (approx. 30 minutes) or						
						groups (groups of 2, approx. 30 minutes) of	date) or					
				d) pro	oject report (appro	ox. 8 to 10 pages) or	2010) 0.					
					e) presentation/talk (approx. 30 minutes).							
					f a written examination was chosen as method of assessment, this may be changed and assessment may instead take the							
					orm of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, he lecturer must inform students about this by four weeks prior to the original examination date at the latest.							
				Langu	anguage of assessment: German and/or English							
				Asses	sment offered: In	the semester in which the course is offered and i	n the subsequent se	emester				

11-HNS-161-m01	Optical	Propert	ties of Ser	miconductor Nanostru	ctures							
	ECTS	6	Duration	1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses			V (3) + R (1)		•						
					lodule taught in: German or English							
	Method	of 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								
				e) presentation/talk (a	approx. 30 minutes). on was chosen as method of assessment, this ma	w he changed and ass	secoment may inclosed take the					
					nation of one candidate each or an oral examinati							
				the lecturer must info	rm students about this by four weeks prior to the							
					ent: German and/or English n the semester in which the course is offered and	Lin the subsequent s	omastar					
11-QTH-161-m01	Quantur	n Trans		Assessment onereu: 1	il the selliester in which the course is offered and	i iii tiie subsequeiit se	eniestei					
		6	Duration	1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses		J	V (3) + R (1)	method of glading humened glade	Modulitevel	Siddate					
					(3) + K (1) Iodule taught in: German or English							
	Method	of asse) written examination (approx. 90 to 120 minutes) or								
				b) oral examination of	oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or							
				d) project report (approx. 8 to 10 pages) or								
				e) presentation/talk (a	e) presentation/talk (approx. 30 minutes).							
				f a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed,								
				he lecturer must inform students about this by four weeks prior to the original examination date at the latest. .anguage of assessment: German and/or English								
				Assessment offered: In the semester in which the course is offered and in the subsequent semester								
11-ASM-161-mo1				al Astronomy								
	ECTS	6	Duration		Method of grading numerical grade	Modul level	graduate					
	Courses			V (3) + R (1)	man av English							
	Mathad	of occo		Module taught in: German or English a) written examination (approx. 90 to 120 minutes) or								
	Method	oi asse			f one candidate each (approx. 30 minutes) or							
				c) oral examination in	groups (groups of 2, approx. 30 minutes per cand	didate) or						
				d) project report (appr								
					e) 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.								
				anguage of assessment: German and/or English ssessment offered: In the semester in which the course is offered and in the subsequent semester								
				Assessment unerea: 1	in the semester in which the course is offered and	i iii tiie subsequelit st	emester					

11-TPE-161-m01	Experimenta	l Particle P	hysics			,					
	ECTS 6	Duratio	n 1	semester	Method of grading numerical grade	Modul level	graduate				
	Courses		V (3) + R								
				taught in: Germ							
	Method of as	ssessment	a) writte) 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							
			d) projed	d) project report (approx. 8 to 10 pages) or							
			e) prese	ntation/talk (ap	oprox. 30 minutes).						
					n was chosen as method of assessment, this may be ation of one candidate each or an oral examination						
					n students about this by four weeks prior to the orig						
			Languag	ge of assessme	nt: German and/or English						
				nent offered: In	the semester in which the course is offered and in	the subsequent se	emester				
11-ASP-161-m01	Introduction										
	ECTS 6	Duratio		semester	Method of grading numerical grade	Modul level	graduate				
	Courses			(3) + R (1) odule taught in: German or English							
	Method of as	ssessment	a) writte	a) written examination (approx. 90 to 120 minutes) or							
			b) oral e	b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or							
			d) project report (approx. 8 to 10 pages) or								
			e) prese	e) 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							
			Assessm								
11-MAS-161-mo1	Multi-wavele	ength Astro	nomy			1					
	ECTS 6	Duratio	n 1	semester	Method of grading numerical grade	Modul level	graduate				
	Courses		V (3) + R								
			Module taught in: German or English								
	Method of as	ssessment			(approx. 90 to 120 minutes) or one candidate each (approx. 30 minutes) or						
					groups (groups of 2, approx. 30 minutes) of	ate) or					
			d) projec	ct report (appro	x. 8 to 10 pages) or	200, 0.					
					oprox. 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.								
			Languag	anguage of assessment: German and/or English							
			Assessm	Assessment offered: In the semester in which the course is offered and in the subsequent semester							

11-QM2-161-m01	Quantu	m Mec	hanics II				,					
	ECTS	8	Duration	ı	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses	S	,		+ R (2)		,					
	20.01				Module taught in: German or English							
	Method	l of ass	essment	a) wr	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes).							
				c) ora								
				e) pre	esentation/taik (a) ritten examinatior	oprox. 30 minutes). I was chosen as method of assessment, this may	he changed and ass	sessment may instead take the				
				form	of an oral examina	ation of one candidate each or an oral examinatio	n in groups. If the m	ethod of assessment is changed,				
						n students about this by four weeks prior to the o	riginal examination	date at the latest.				
						nt: German and/or English the semester in which the course is offered and i	n the subsequent se	emester				
11-RTT-161-m01	Theory	of Rela	tivity	7.000			······································					
		6	Duration	ı	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses	Courses			(3) + R (1) odule taught in: German or English							
	Method of assessment			b) ora c) ora d) pro e) pro If a w	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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							
				Langi								
11-QVTP-161-m01	Many B	ody Qu	ıantum Th		- dicied: iii	the semester in which the course is offered and i	The Subsequent so	- Intester				
	ECTS	8	Duration	1	1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses	S	,	V (4) + R (2) Module taught in: German or English								
	Method	l of ass	essment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is chattelecturer 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-PKS-161-m01	Physics of Complex Systems											
	ECTS	6	Duration	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 asse	b) o c) oi d) p e) p If a v form the Lang	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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-161-m01	Quantum Information and Quantum Computing											
		6	Duration	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	S		V (3) + R (1) Module taught in: German or English								
	Method of assessmen			ral examination of cal examination in g roject report (appro resentation/talk (ap written examination of an oral examina ecturer must inforn guage of assessmen essment offered: In	(approx. 90 to 120 minutes) or one candidate each (approx. 30 minutes) or roups (groups of 2, approx. 30 minutes per cand x. 8 to 10 pages) or oprox. 30 minutes). I was chosen as method of assessment, this may ation of one candidate each or an oral examination students about this by four weeks prior to the ont: German and/or English the semester in which the course is offered and	/ be changed and ass on in groups. If the m original examination (ethod of assessment is changed, date at the latest.					
	Module comple		ssfully 11-Q	M2 or 11-TFK								

11-TFK-161-m01	Theore	tical So	lid State F	Physics		,						
	ECTS	8	Duration	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	!S		V (4) + R (2)	orman or English	·						
	Motho	d of acc			Module taught in: German or English a) written examination (approx. 90 to 120 minutes) or							
	Wethor	u 01 a33		b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or								
				If a written examinat form of an oral exam the lecturer must inf Language of assessr) presentation/talk (approx. 30 minutes). The a written examination was chosen as method of assessment, this may be changed and assessment may instead take the parm 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. The anguage of assessment: German and/or English assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-TFK2-161-m01	Theore	tical So	lid State F	Physics 2		-						
	ECTS	8	Duration	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	!S		V (4) + R (2) Module taught in: Ge								
	Method of assessment			a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester								
11-FTFK-161-m01				te Physics		,						
	ECTS	8	Duration		Method of grading numerical grade	Modul level	graduate					
	Course	!S		V (4) + R (2) Module taught in: German or English								
	Method	d of ass		a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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 chanthe 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-TOPO-161-mo1	Topolo	gical O	rder				,				
	ECTS	6	Duration	ı	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	:S	·		+ R (1)		•				
	20.11	1 (Module taught in: German or English a) written examination (approx. 90 to 120 minutes) or						
	Method	d or ass	essment	b) ora c) ora d) pro e) pro If a w form	b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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,						
				Langu	uage of assessme	n students about this by four weeks prior to the or nt: German and/or English the semester in which the course is offered and ir					
11-TFP-161-m01	Topolo	gy in S	olid State	Physic	CS .		,				
	ECTS	6	Duration	ı	1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	·S			(3) + R (1) odule taught in: German or English						
	Method of assessment			b) ora c) ora d) pro e) pro If a w form the le Langu	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may insteform 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. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
11-TSL-161-m01			erconduct								
	ECTS	6	Duration		1 semester	Method of grading numerical grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English							
	Metho	d of ass	essment	b) ora c) ora d) pro e) pre If a w form the le Langu	al examination of only examination in going the second of	(approx. 90 to 120 minutes) or one candidate each (approx. 30 minutes) or groups (groups of 2, approx. 30 minutes per candidate. 8 to 10 pages) or opprox. 30 minutes). In was chosen as method of assessment, this may lation of one candidate each or an oral examination in students about this by four weeks prior to the orant: German and/or English the semester in which the course is offered and in	be changed and as n in groups. If the m iginal examination	ethod of assessment is changed, date at the latest.			

11-CMS-161-mo1	Comput	Computational Materials Science (DFT)												
	ECTS	8	Duration		1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses	5		V (4) +		·								
			-		Module taught in: German or English									
	Method	of ass	essment	a) writt	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 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									
				d) proj	d) project report (approx. 8 to 10 pages) or									
				e) pres	entation/talk (ap	oprox. 30 minutes).								
						n was chosen as method of assessment, this may bation of one candidate each or an oral examination								
						n students about this by four weeks prior to the or								
						nt: German and/or English								
				Assess	sment offered: In	the semester in which the course is offered and in	the subsequent se	emester						
11-KFT-161-m01			d Theory											
		6	Duration		1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses			Modul	(3) + R (1) lodule taught in: German or English									
	Method of assessment			a) writt	a) written examination (approx. 90 to 120 minutes) or									
				b) oral	b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or									
				d) project report (approx. 8 to 10 pages) or										
				e) 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									
				Langua										
					Assessment offered: In the semester in which the course is offered and in the subsequent semester									
11-KFT2-161-m01			d Theory 2											
	ECTS	6	Duration		1 semester	Method of grading numerical grade	Modul level	graduate						
	Courses	5		V (3) +		e 191								
į	AA - 411			Module taught in: German or English										
	Method	or ass				(approx. 90 to 120 minutes) or one candidate each (approx. 30 minutes) or								
						groups (groups of 2, approx. 30 minutes per candid	date) or							
				d) proj	ect report (appro	x. 8 to 10 pages) or	•							
				e) pres	e) 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.										
				Langua	Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester									
				Assess	sment offered: In	the semester in which the course is offered and in	the subsequent se	emester						

11-MSF-161-m01	Magnetism and Spin Fluids ECTS C Duration A competer Method of grading numerical grade Medul level graduate											
	ECTS 6	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses			+ R (1)								
				ıle taught in: Germ								
	Method of a	ssessment	a) wr	n) written examination (approx. 90 to 120 minutes) or								
				o) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or								
			d) pro	d) project report (approx. 8 to 10 pages) or								
			e) pre	esentation/talk (ap	oprox. 30 minutes).							
					was chosen as method of assessment, this may ation of one candidate each or an oral examinatio							
					n students about this by four weeks prior to the o							
			Lang	uage of assessmer	nt: German and/or English							
					the semester in which the course is offered and i	in the subsequent so	emester					
11-TQP-161-m01	Topological	-		1								
	ECTS 6	Duratio		1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses			(3) + R (1) odule taught in: German or English								
	Method of a	ssessment	a) wr	a) written examination (approx. 90 to 120 minutes) or								
			b) ora	o) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or								
			d) pro	d) project report (approx. 8 to 10 pages) or								
			e) pre	e) 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-CRP-161-mo1	Renormaliza	tion Group	and C	ritical Phenomena								
	ECTS 6	Duratio	n	1 semester	Method of grading numerical grade	Modul level	graduate					
	Courses			+ R (1)								
			Module taught in: German or English									
	Method of a	ssessment			(approx. 90 to 120 minutes) or one candidate each (approx. 30 minutes) or							
					roups (groups of 2, approx. 30 minutes) of	idate) or						
			d) pro	oject report (appro	x. 8 to 10 pages) or							
			e) pre	esentation/talk (ap	pprox. 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.									
				anguage of assessment: German and/or English								
			Asses	Assessment offered: In the semester in which the course is offered and in the subsequent semester								

Bosonisation and Interactions in One Dimension																			
ECTS	6	Duration	1 S 6	emester	Method of grading numerical grade	Modul level	graduate												
Course	S																		
					_		_												
Method	d of ass		a) written	examination (a	approx. 90 to 120 minutes) or														
						te) or													
			d) project	report (approx	a. 8 to 10 pages) or	,													
			e) present	ation/talk (ap	prox. 30 minutes). was chosen as method of assessment, this may be	changed and ac	saccment may inclosed take the												
			the lecture	er must inform	students about this by four weeks prior to the original														
						ha subsaguant s	omastar												
Gauge	Theorie		Assessine	iit onereu: iii t	The semester in which the course is offered and in t		eniestei												
			1 1 5 6	mester	Method of grading numerical grade	Modul level	graduate												
		J			Method of grading humeneat grade	Modulitevel	graduate												
Course	3		V (3) + R (1) Module taught in: German or English																
Method	d of ass		a) written examination (approx. 90 to 120 minutes) or																
			b) oral examination of one candidate each (approx. 30 minutes) or																
			c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or																
			e) 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																
											1		Assessment offered: In the semester in which the course is offered and in the subsequent semester						
														lity					
										ECTS	8				Method of grading numerical grade	Modul level	graduate		
Courses			V (4) + R (2) Module taught in: German or English																
Method of assessment			a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or																
						illat examination	uate at the latest.												
						he subsequent se	emester												
	Gauge ECTS Course Method Method Introdu ECTS Course	Gauge Theorie ECTS 6 Courses Method of ass Method of ass Introduction to ECTS 8 Courses	ECTS 6 Duration Courses Method of assessment Gauge Theories ECTS 6 Duration Courses Method of assessment Introduction to Gauge/GECTS 8 Duration Courses Method of assessment	Courses V (3) + R (5) Module ta Method of assessment a) written b) oral exacc) oral exacd) project e) present If a writter form of an the lecture Language Assessment Method of assessment a) written b) oral exacc) oral exacd) project e) present If a written form of an the lecture Language Assessment a) written b) oral exacc) oral exacd) project e) present If a writter form of an the lecture Language Assessment Introduction to Gauge/Gravity Dual ECTS 8 Duration 1 second and the lecture Language Assessment a) written b) oral exacc) oral exa	Method of assessment	ECTS 6 Duration 1 semester Method of grading numerical grade	Courses												

11-EFQ-161-m01	Introduction to Fractional Quantisation												
	ECTS	6	Duration	1 semester	Method of grading numerical grade	Modul level	graduate						
	Course	S		V (3) + R (1)									
				Module taught in: Ger									
	Method	d of ass	essment	a) written examination of	n (approx. 90 to 120 minutes) or								
				b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or									
				d) project report (appr	rox. 8 to 10 pages) or	,							
				e) presentation/talk (approx. 30 minutes). on was chosen as method of assessment, this may	he changed and acc	sassment may instead take the						
					nation of one candidate each or an oral examination								
				the lecturer must info	rm students about this by four weeks prior to the o								
					ent: German and/or English n the semester in which the course is offered and i	in the subsequent so	master						
11-TEF-161-m01	Topolo	gical Ef		ectronic Systems	if the semester in which the course is offered and i	iii tiie subsequeiit se	eniestei						
11-161-101-11101		6	Duration		Method of grading numerical grade	Modul level	graduate						
	Course		1	V (3) + R (1)	Method of grading Indinencal grade	Modulitevel	graduate						
	Course	3		V (3) + R (1) Module taught in: German or English									
	Method	d of ass		a) written examination (approx. 90 to 120 minutes) or									
				b) oral examination of one candidate each (approx. 30 minutes) or									
				c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or									
				e) 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-FTAS-161-m01				s of Solid State Physic	.								
	ECTS	6	Duration		Method of grading numerical grade	Modul level	graduate						
	Course	S		V (3) + R (1)									
				Module taught in: German or English									
	Method of assessment			a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or									
				c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or									
				e) presentation/talk (approx. 30 minutes). On was chosen as method of assessment, this may	ho changed and acc	sossment may instead take the						
				form of an oral examin	nation of one candidate each or an oral examination	on in groups. If the m	nethod of assessment is changed.						
				the lecturer must info	rm students about this by four weeks prior to the o								
					ent: German and/or English	:							
				Assessment offered: I	n the semester in which the course is offered and i	in the subsequent se	emester						

11-AKM-161-m01	Cosmology											
	ECTS	6	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (3) + R (1) Module taught in: German or English								
	Method	of asses	ssment	a) wri	tten examination	(approx. 90 to 120 minutes) or						
				b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or								
				d) pro	ject report (appro	ox. 8 to 10 pages) or						
				e) pre	esentation/talk (a	pprox. 30 minutes).	ha shangad and as	saccoment may instead take the				
						n was chosen as method of assessment, this may ation of one candidate each or an oral examinatio						
				the le	cturer must inforr	n students about this by four weeks prior to the o						
						nt: German and/or English						
ACT	Th 43	A			ssment offered: In	the semester in which the course is offered and i	in the subsequent se	emester				
11-AST-161-m01	Theoreti		<u> </u>		1	Make a a few adia a lava ani a a lawa da	Madullanal	Lawa durata				
			Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (2) + R (2) Module taught in: German or English								
	Method	of asses		a) written examination (approx. 90 to 120 minutes) or								
				b) oral examination of one candidate each (approx. 30 minutes) or								
				c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or								
				e) 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-APL-161-m01	High Ene							,				
	ECTS	6	Duration		1 semester	Method of grading numerical grade	Modul level	graduate				
	Courses			V (3) + R (1)								
				Module taught in: German or English								
	Method of assessment			a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or								
				c) oral examination of one candidate each (approx. 30 minutes) or candidate) or								
				d) project report (approx. 8 to 10 pages) or e) 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								
						ation of one candidate each or an oral examinatio						
				the le	cturer must inforr	n students about this by four weeks prior to the o						
						nt: German and/or English						
				Asses	ssment offered: In	the semester in which the course is offered and i	in the subsequent se	emester				

11-RQFT-161-m01	Relativistic Quantum Field Theory												
	ECTS	8	Duration	1 se	mester	Method of grading numerical grade	Modul level	graduate					
	Courses	5		V (4) + R (2) Module taught in: German or English									
	00 a 4 la a al	l - 6				_							
	Method	i or asse		a) written e	examination mination of ((approx. 90 to 120 minutes) or one candidate each (approx. 30 minutes) or							
				c) oral exam	mination in g	groups (groups of 2, approx. 30 minutes per o	candidate) or						
						x. 8 to 10 pages) or							
				If a written	examination	oprox. 30 minutes). I was chosen as method of assessment, this	may be changed and as	sessment may instead take the					
				form of an	oral examina	ation of one candidate each or an oral exami	nation in groups. If the n	nethod of assessment is changed,					
						n students about this by four weeks prior to t nt: German and/or English	the original examination	date at the latest.					
							and in the subsequent s	emester					
11-QFT2-161-m01	Quantu	Assessment offered: In the semester in which the course is offered and in the subsequent semester Quantum Field Theory II											
	ECTS	8	Duration	1 se	mester	Method of grading numerical grade	Modul level	graduate					
	Courses	5		V (4) + R (2) Module taught in: German or English									
	Method	l of asse		a) written examination (approx. 90 to 120 minutes) or									
					b) oral examination of one candidate each (approx. 30 minutes) or								
				c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or									
				e) 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-TEP-161-m01				Particle Phy		Markhard of and discount and an area	I Mandad Laval	Laws docate					
		8	Duration		mester	Method of grading numerical grade	Modul level	graduate					
	Courses			V (4) + R (2) Module taught in: German or English									
	Method	l of asse		a) written examination (approx. 90 to 120 minutes) or									
				b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or									
				d) project report (approx. 8 to 10 pages) or									
				e) 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									
						n was chosen as method of assessment, this ation of one candidate each or an oral exami							
						n students about this by four weeks prior to t							
				Language of	of assessme	nt: German and/or English	•						
				Assessmer	it offered: In	the semester in which the course is offered	and in the subsequent s	emester					

11-ATTP-161-m01	Selected Topics of Theoretical Elementary Particle Physics												
	ECTS	6	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
					V (3) + R (1) Module taught in: German or English								
				a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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-BSM-161-m01				ndard Model of Elementary Particle Physics									
	ECTS	6	Duration		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			b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) 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									
Internship													
10-M=E-		hip Mat	hematics										
PRK-161-m01	ECTS	ECTS 10 Duratio			1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	Courses			P (o)								
	Method of assessment			a) placement report (15 to 30 pages) or b) talk (30 to 60 minutes)									
	other prerequisites			In advance, please consult with a lecturer who agrees to be your supervisor.									

Thesis (30 ECTS credits)											
10-M=MAAR-161-	Master Thesis Mathematics										
mo1	ECTS	30	Duratio	ı	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S	-	No courses assigned to module							
	Method	d of asse		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	rerequis			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							