

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Mathematics International as a Master's with 1 major with the Degree (120 ECTS credits)

Responsible: Institute of Mathematics

Examination regulations version: 2015

Abbreviations used: Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V**

= 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 assessment procedures:

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method 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-Jul-2015 (2015-17)

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	o 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	fapplicable							
	Other prereq	uisites	if applica	if applicable							
	Participants on of places		ocati- if applica	if applicable							
	Additional in	format	ion if applica	if applicable							
	Referred to in	n LPO I	if applica	if applicable (examination regulations for teaching-degree programmes)							

Compulsory Electiv	res (90 ECTS cre	dits)										
Mathematics (30-7	o ECTS credits)											
10-M=AAA-	Applied Analys	sis										
Nin-152-m01	ECTS 10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		Modu	V (4) + Ü (2) Module taught in: English								
	Method of asso	essment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=AAL-	Topics in Algel	ora										
Gin-152-m01	ECTS 10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (4) + Modu	- Ü (2) le taught in: English								
	Method of asso		a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=ADG-	Differential Ge						1					
Min-152-m01	ECTS 10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (4) + Ü (2) Module taught in: English									
	Method of asso	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=AFT-	Complex Analy	/sis										
Hin-152-m01	ECTS 10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses		V (4) + Ü (2) Module taught in: English									
	Method of asso	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									

10-M=AGM-	Geo	metric S	tructures					"					
Sin-152-m01	ECT:	S 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cou	rses	·		+ Ü (2) ıle taught in: English								
	Met	hod of a	ssessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=AI-	Indu	ıstrial S	tatistics 1					'					
STin-152-m01	ECT:	S 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Cou	rses			V (4) + Ü (2) Module taught in: English								
	Met	hod of a	ssessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=AL-	Lie Theory												
THin-152-m01	ECTS 10 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses				V (4) + Ü (2) Module taught in: English								
	Met	hod of a	ssessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate ea minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=ANG-	Nun	neric of L	arge Syste	ms of E	quations			,					
Gin-152-m01	ECT:	S 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ Ü (2) ıle taught in: English			,					
	Met	hod of a	ssessment	minut Asses Langu	tes) or c) oral examin ssment offered: In th	examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 or c) oral examination in groups (groups of 2, 15 minutes per candidate) ent offered: In the semester in which the course is offered and in the subsequent semester of assessment: English e for bonus							

10-M=AOP-	Basics	in Opti	mization			,		1				
Tin-152-m01	ECTS	10	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (2) ıle taught in: Engli	sh						
	Method	d of ass	essment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English Creditable for bonus							
10-M=AR-	Contro	Theory	<u> </u>	,								
THin-152-m01	ECTS	10	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (4) + Ü (2) Module taught in: English							
				minu Asses Langu credi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus							
10-M=ASM-	Stochastic Models of Risk Management											
Rin-152-m01	ECTS	10	Duratio			Method of grading	numerical grade	Modul level	graduate			
	Course	S		V (4) + Ü (2) Module taught in: English								
	Method	d of ass	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (a minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=AST-	Stocha	stical P	rocesses									
Pin-152-m01	ECTS	10	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	Courses			V (4) + Ü (2) Module taught in: English							
	Method of assessment			minu Asses Langi	tes) or c) oral exam	ination in groups (gro the semester in which	utes, usually chosen) or b) ups of 2, 15 minutes per ca the course is offered and ir	ndidate)	f one candidate each (approx. 20			

10-M=ATO-	Topolo	Topology												
Pin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	S			+ Ü (2) ıle taught in: English	1		·						
	Method	d of asso	essment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=AVS-	Insurar	ice Mat	hematics	1										
Min-152-m01	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	S			(4) + Ü (2) Nodule taught in: English									
	Method	d of asse	essment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=AZ-	Time Series Analysis 1													
RAin-152-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses				V (4) + Ü (2) Module taught in: English									
	Method	d of asso	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus											
10-M=AZTHin-152-	Numbe	r Theor	/											
mo1	ECTS	10	Duratio		1 semester	Method of grading	numerical grade	Modul level	graduate					
	Course	S			V (4) + Ü (2) Module taught in: English									
	Method of assessment			a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus										

10-M=AGP-	Giovanni Pi	rodi Lecture	(Maste	er)	-							
Cin-152-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses	·		+ Ü (1) ıle taught in: English	1		,					
	Method of a	assessment	minu Asses Langi	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VA-	Selected To	pics in Anal	ysis									
NAin-152-mo1	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			4) + Ü (2) dule taught in: English								
	Method of a	assessment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VAT-	Algebraic T	opology										
Pin-152-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + Ü (2) Module taught in: English								
	Method of a	assessment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VFN-	Selected To	pics in Fina	ncial N	lathematics								
Min-152-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (4) + Ü (2) Module taught in: English								
	Method of a	assessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									

10-M=VGD-	Groups	and th	eir Repres	sentat	ions	'						
Sin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (2) ıle taught in: Englis	:h						
	Method	d of ass	essment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus							
10-M=VGE-	Geome	trical N	echanics	•								
Min-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (4) + Ü (2) Module taught in: English							
	Method	d of ass	essment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English Creditable for bonus							
10-M=VI-	Industi	rial Stat	istics 2	,								
STin-152-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	Courses			V (4) + Ü (2) Module taught in: English							
	Method	d of ass	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approximinutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VKA-	Field A	rithmet	ics	•								
Rin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	Courses			V (4) + Ü (2) Module taught in: English							
	Method of assessment			minu Asses Langi	tes) or c) oral exam	ination in groups (gro the semester in which	utes, usually chosen) or b) ora ups of 2, 15 minutes per candi the course is offered and in th	date)	f one candidate each (approx. 20			

10-M=VN-	Numeri	c of Par	tial Diffe	rential	Equations				-			
PEin-152-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			+ Ü (2) ıle taught in: Englis	h		-				
	Method	d of ass	essment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus							
10-M=VOP-	Selecte	d Topic	s in Optii	mizati	on			,				
Tin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				V (4) + Ü (2) Module taught in: English							
	Method	d of ass	essment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus							
10-M=V-	Statisti	ical Ana	lysis	,				,				
STAin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: English								
	Method	d of ass	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approximation or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VVS-	Insurar	ice Mat	hematics	2								
Min-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: English								
	Method of assessment			a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								

10-M=VZ-	Time Series Analysis 2												
RAin-152-mo1	ECTS :	10	Duration	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ Ü (2) ıle taught in: Englisl	n		,					
	Method	of asse	ssment	minu Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VDI-	Discrete	Mathe	matics										
Min-152-m01	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				(3) + Ü (1) odule taught in: English								
	Method	of asse	ssment	minu Asses Langu	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VDSY-	Dynamic	al Syst	ems										
in-152-m01	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (3) + Ü (1) Module taught in: English									
	Method	of asse	ssment	minu Asses Langu	tes) or c) oral exami	nation in groups (gro ne semester in which	tes, usually chosen) or b) o ups of 2, approx. 10 minute the course is offered and in	s per candidate)	one candidate each (approx. 15				
10-M=V-	Aspects	of Geo	metry										
GEOin-152-mo1	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (3) + Ü (1) Module taught in: English									
	Method of assessment			a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									

10-M=V-	Mathematical Continuum Mechanics												
KOMin-152-mo1	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	·		+ Ü (1) ıle taught in: Englisl	1								
	Method of a	ssessment	minu Asses Langi	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=VMB-	Mathematic	al Imaging											
Vin-152-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses			3) + Ü (1) odule taught in: English									
	Method of a	ssessment	minu Asses Langi) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 ninutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) ssessment offered: In the semester in which the course is offered and in the subsequent semester anguage of assessment: English reditable for bonus									
10-M=VM-	Selected Topics in Mathematical Physics												
PHin-152-m01	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses	,		V (4) + Ü (2) Module taught in: English									
	Method of a	ssessment	minu Asses Langi	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approminutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=V-	Selected To	pics in Cont	rol The	eory									
TRTin-152-mo1	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses			V (4) + Ü (2) Module taught in: English									
	Method of a	ssessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus										

10-M=VI-	Inver	Inverse Problems												
PRin-152-mo1	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Cour	ses			+ Ü (1) le taught in: English									
	Meth	od of as	sessment	minut Asses Langu	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English Creditable for bonus									
10-M=VMT-	Mod	ule Theo	ry											
Hin-152-mo1	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Cour	ses			V (3) + Ü (1) Module taught in: English									
	Meth	od of as	sessment	minut Asses Langu	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=VNA-	Non-linear Analysis													
Nin-152-m01	ECTS	5	Duratio	,	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Cour	ses			V (3) + Ü (1) Module taught in: English									
	Meth	od of as:	sessment	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus										
10-M=VO-	Optir	nal Cont	rol											
STin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate					
	Courses				V (3) + Ü (1) Module taught in: English									
	Meth	od of as	sessment	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus										

10-M=VVSY-	Networked Systems												
in-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			+ Ü (1) ıle taught in: Englisl	1		,					
	Method	l of ass	essment	minu Asses Langu	a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English Creditable for bonus								
10-M=VK-	Comple	x Geon	netry					'					
GEin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S	·		4) + Ü (2) dule taught in: English								
	Method	l of ass	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=VPD-	Partial	Differe	erential Equations of Mathematical Physics										
Pin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			Modu	V (4) + Ü (2) Module taught in: English								
	Method	d of ass	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (a minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
10-M=V-	Pseudo	Riema	nnian and	Riem	annian Geometry								
PRGin-152-mo1	Gin-152-m01 ECTS 10 Dur				1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S			V (4) + Ü (2) Module taught in: English								
	Method of assessment			a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									

10-M=AFA-	Fun	ctional Aı	nalysis			,						
Nin-152-m01	ECT	S 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				V (4) + Ü (2) Module taught in: English							
	Met	thod of as	sessment	minut Asses Langu	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus							
10-M=VAD-	App	Applied Differential Geometry										
Gin-152-m01	ECT	S 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cou	ırses			+ Ü (2) lle taught in: English							
				minut Asses Langu credit	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus							
10-M=VG-	Giovanni Prodi Lecture Selected Topics (Master)											
PSin-152-m01	ECT	S 10	Duratio	,	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: English								
	Met	thod of as	sessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (apminutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								
10-M=VG-	Gio	vanni Pro	di Lecture	Advand	vanced Topics (Master)							
PAin-152-mo1	ECT	S 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (4) + Ü (2) Module taught in: English								
	Met	thod of as	sessment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus								

10- M=VGPMin-152-	Giovanni	Prodi	Lecture I	Modern Topics (Master)									
	ECTS 1	.0	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
m01	Courses			Modu	V (4) + Ü (2) Module taught in: English								
	Method o	of asse	essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus									
Study Group and S	eminars (2	20-60	ECTS cree	dits)									
10-M=GAL-	Research in Groups - Algebra												
Gin-152-m01	ECTS 1	.0	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses				+ S (2) le taught in: English								
	Method o			Asses Langu	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								
10-M=GDI-	Research	Research in Groups - Discrete Mathematics											
Min-152-m01	ECTS 1	.0	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + S (2) Module taught in: English									
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English									
10-M=GDS-	Research in Groups - Dynamical Systems and Control Theory												
Cin-152-m01	ECTS 1	.0	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Courses			V (2) + S (2) Module taught in: English									
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English									
10-M=G-	Research	in Gr	oups - Co	mplex Analysis									
COAin-152-mo1	ECTS 10 Duration Courses Method of assessment				1 semester	Method of grading	numerical grade	Modul level	graduate				
				V (2) + S (2) Module taught in: English									
				Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								

10-M=GGM-	Resear	ch in Gr	oups - Ge	ometr	y and Topology			"				
Tin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S			+ S (2)							
	Metho	d of acc	essment		Module taught in: English							
	Wictio	u 01 a33	c33mcm	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=GMC-	Resear	ch in Gr	oups - Ma	athema	hematics in Context							
Xin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S			+ S (2) le taught in: English							
	Metho	d of asso	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=GMS-	Resear	ch in Gr	oups - Ma	athema	thematics in the Sciences							
Cin-152-m01	ECTS 10 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: English								
	Metho	d of asso	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								
10-M=GMAI-	Research in Groups - Measure and Integral											
in-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: English								
	Metho	d of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								
10-M=GN-	Resear	ch in Gr	oups - Νι	ımerica	al Mathematics and	Applied Analysis		,				
MAin-152-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	!S		V (2) + S (2) Module taught in: English								
	Method of assessment			talk (d	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							

10-M=GRO-	Resear	rch in Gr	oups - Ro	botics	botics, Optimization and Control Theory							
Cin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses				V (2) + S (2) Module taught in: English							
	Metho	d of asse	essment	talk (6	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=GT-	Resear	rch in Gr	oups - Ma	athema	hematics in the Sciences							
SAin-152-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	es		V (2) - Modu	+ S (2) le taught in: English							
	Metho	d of asse	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=G-	Resear	rch in Gr	oups - St	atistic	tistics							
STAin-152-mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: English								
	Metho	d of asse	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=GNTHin-152-	Research in Groups - Number Theory											
mo1	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Courses			V (2) + S (2) Module taught in: English								
	Metho	d of asse	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								
10-M=GCQ-	Resear	rch in Gr	oups - Co	ntrol T	heory of Quantum N	lechanical Systems		"				
Sin-152-m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	25			V (2) + S (2) Module taught in: English							
	Metho	d of asse	essment	talk (6	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							

10-M=GD-	Resea	arch in G	oups - Dif	ferent	ial Geometry							
GEin-152-m01	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es			V (2) + S (2) Module taught in: English							
	Metho	od of ass	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=GDF-	Research in Groups - Deformation Quantization											
Qin-152-m01	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es			+ S (2) le taught in: English							
	Metho	od of ass	essment	Asses	alk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=GN-	Resea	arch in G	oups - No	n-line	n-linear Analysis							
LAin-152-m01	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es		V (2) + S (2) Module taught in: English								
	Metho	od of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								
10-M=GO-	Research in Groups - Operator Algebras											
PAin-152-mo1	ECTS	10	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es		V (2) + S (2) Module taught in: English								
	Metho	od of ass	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English								
10-M=SAD-	Semi	nar in Ap	plied Diffe	erential Geometry								
Gin-152-m01			Duration	า	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Cours	es		S (2) Module taught in: English								
	Metho	od of ass	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							

10-M=SAL-	Semina	ar in Alg	ebra					1			
Gin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	Courses			S (2) Module taught in: English						
	Method	d of asse	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English						
10-M=SDS-	Semina	ar in Dyr	namical S	ystem	stems and Control						
Cin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S	•	S (2) Modu	le taught in: English						
	Method of assessment			Asses	Calk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English						
10-M=S-	Semina	ar in Cor	nplex An	alysis	ysis						
COAin-152-mo1	ECTS	ECTS 5 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	Courses		S (2) Module taught in: English							
	Method of assessment			talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=SFI-	Seminar in Financial and Insurance Mathematics										
Min-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	Courses			S (2) Module taught in: English						
	Method	d of asse	essment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=SGTO-	Semina	ar in Geo	metry ar	nd Topo	d Topology						
in-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Course	S		S (2) Modu	S (2) Module taught in: English						
	Method of assessment			talk (d	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English						

10-M=SGP-	Giova	anni Prod	di Seminar	(Mast	er)	'		,			
Cin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cour	Courses			S (2) Module taught in: English						
	Meth	od of ass	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English						
10-M=SID-	Inter	disciplin	ary Semin	ar				'			
Cin-152-m01	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cour	ses	•	S (2) Modu	le taught in: English						
	Meth	od of ass	sessment	Asses	calk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English						
10-M=SMS-	Semi	inar Math	nematics i	n the S	the Sciences						
Cin-152-m01	ECTS 5 Duratio			n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			S (2) Module taught in: English							
	Meth	od of ass	sessment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=SN-	Seminar in Numerical Mathematics and Applied Analysis										
MAin-152-mo1	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			S (2) Module taught in: English							
	Meth	od of ass	sessment	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
10-M=SOP-	Semi	inar in Op	otimizatio	n							
Tin-152-m01	ECTS	ECTS 5 Duratio		n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Cour	ses		S (2) Modu	S (2) Module taught in: English						
	Meth	od of ass	sessment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English						

10-M=S-	Semina	ar in Sta	tistics								
STAin-152-mo1	ECTS	ECTS 5 Duration		n	1 semester	Method of grading	numerical grade	Modul level	graduate		
	Courses			S (2) Modu	S (2) Module taught in: English						
	Method	d of ass	essment	Asses	talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English						
10-M=SN-	Semina	ar in No	n-linear A	nalysis	5						
LAin-152-m01	ECTS	5	Duratio	<u> </u>	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) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English							
Thesis (30 ECTS cr	edits)										
10-M=MA-	Master	Thesis	Mathema	tics International							
MI-152-m01	ECTS	30	Duratio	1		Method of grading	numerical grade	Modul level	graduate		
	Courses			No courses assigned to module							
	Method of assessment			Regist	Master's thesis (750 to 900 hours total) Registration and assignment of topic in consultation with supervisor. Language of assessment: English						