



Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Computational Mathematics as a Bachelor's with 1 major with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Institute of Mathematics

Examination regulations version: 2009

Abbreviations used:	Course types: \mathbf{E} = field trip, \mathbf{K} = colloquium, \mathbf{O} = conversatorium, \mathbf{P} = placement/lab course, \mathbf{R} = project, \mathbf{S} = seminar, \mathbf{T} = tutorial, $\mathbf{\ddot{U}}$ = exercise, \mathbf{V} = lecture
	Term: 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 modules in this SFB:	Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not cre- ditable for bonus.
Information on assessment procedures:	Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the me- thod of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.
	Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.
	Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with the general regulations governing the degree subject described in this module catalogue:

ASP02007

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

10-Aug-2009 (2009-62)

15-Mar-2010 (2010-10)

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		Duratio	n	(in semesters)	Method of grading		Module level			
	Courses		Т	To be spe	cified in the form X	(y) with course type >	Kabbreviated as specified abo	ove and number of we	ekly contact hours y		
	Method of assessment										
	Only after su completion c	ccessf	ul if	if applicable							
	Other prereq	uisites	if	if applicable							
	Participants and allocati on of places				ble						
	Additional in	format	ion if	fapplica	ble						
	Referred to in	n LPO I	if	if applicable (examination regulations for teaching-degree programmes)							

Compulsory Course	es (88 EC	CTS crea	lits)							
10-M-PPM-082-	Propae	deutics	of Mathe	matics	i					
m01	ECTS	2	Duration	ı	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Course	S		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	ailable)		
	Method of assessment			project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) Assessment offered: once a year, winter semester Language of assessment: German, English if agreed upon with the examiner						
	other prerequisites			Admis	Admission prerequisite to assessment: regular attendance of courses (as specified at the beginning of the course).					
10-M-NM1-082-	Numeri	ical Mat	hematics	1						
m01	ECTS	8	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Course	S		V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment			written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner						
	other prerequisites			Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respec- tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admissi- on to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to as- sessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the quali- fication for admission to assessment anew.						
	Referred to in LPO I			§ 73 (1) 5. Mathematik Ang	gewandte Mathemat	ik			

10-M-ANA-082-	Analys	Analysis									
m01	ECTS	17	Duratior	1 I	2 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses			 This module comprises 3 module components. Information on courses will be listed separately for each module component. 10-M-ANA-1-082: V + Ü (no information on SWS (weekly contact hours) and course language available) 10-M-ANA-2-082: V + Ü (no information on SWS (weekly contact hours) and course language available) 10-M-ANA-P-082: M (no information on SWS (weekly contact hours) and course language available) 							
	Method	of asse	ssment	Asses stated Asses Asses	sment in this modul otherwise, success sment in module con 8 ECTS, Method of g a) written examinat 20 minutes) or c) or Language of assess Other prerequisites sment in module con 7 ECTS, Method of g a) written examinat 20 minutes) or c) or Language of assess Other prerequisites ANA-1 is recommen sment in module con 2 ECTS, Method of g oral examination of Language of assess Only after successfu 10-M-ANA-1, 10-M-A	e comprises the asso ful completion of the grading: (not) success tion (approx. 90 min ral examination in gr sment: German, Engl : Modules 10-M-VKM mponent 10-M-ANA- grading: (not) success tion (approx. 90 min ral examination in gr sment: German, Engl : Modules 10-M-VKM ded for module com mponent 10-M-ANA- grading: numerical g fone candidate each sment: German, Engl al completion of mod NL-1, 10-M-ANA-2, 10	essments in the individual mode e module will require successful asfully completed utes; usually chosen) or b) oral oups (groups of 2, approx. 30 m ish if agreed upon with the exam and 10-M-PPM are recommend 2-082: Analysis 2 Analysis 2 sfully completed utes; usually chosen) or b) oral oups (groups of 2, approx. 30 m ish if agreed upon with the exam M and 10-M-PPM are recommer ponent 10-M-ANA-2. P-082: Examination in Analysis rade (approx. 30 minutes) ish if agreed upon with the exam ule components: Successful com po-M-ANL-2 is a prerequisite for p	examination of examination of ninutes) niner led. examination o ninutes) niner nded; in additi niner nded; in additi	s as specified below. Unless all individual assessments. f one candidate each (approx. f one candidate each (approx. on, module component 10-M-		
	other p	rerequis	ites	By way of exception, additional prerequisites are listed in the section on assessments.							
	Referre	d to in L	PO I	\$73 (:	ı) 1. Mathematik Ana	alysis					

10-M-LNA-082-	Linear	Algebra											
m01	ECTS	14	Duratio	n	2 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Courses			This n	nodule comprises 3 10-M-LNA-1-082: V 10-M-LNA-2-082: V 10-M-LNA-P-082: V	module components / + Ü (no information of / + Ü (no information of M (no information on S	. Information on courses will bo on SWS (weekly contact hours) on SWS (weekly contact hours) SWS (weekly contact hours) an	e listed separate and course lang and course lang d course langua	ely for each module component. guage available) guage available) ge available)				
	Methoo	d of asse	essment	Asses stated	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.								
				Asses • • • • •	ssment in module c 7 ECTS, Method of written examination oral examination of 30 minutes) Language of asses Other prerequisite students about th a declaration of w assessment over a dents who meet a assessment at a la ssment in module c 5 ECTS, Method of written examination oral examination of 30 minutes)	omponent 10-M-LNA- f grading: (not) success on (approx. 90 minutes of one candidate each assment: German, Engles: Certain prerequisite e respective details a vill to seek admission the course of the sem ater date, students wi omponent 10-M-LNA- f grading: (not) success on (approx. 90 minutes of one candidate each	1-082: Linear Algebra 1 Linear A sfully completed (approx. 20 minutes) or an oralish if agreed upon with the exact es must be met to qualify for add t the beginning of the course. to assessment. If students have the lecturer will put the e admitted to assessment in t l have to obtain the qualification 2-082: Linear Algebra 2 Linear sfully completed (approx. 20 minutes) or an oralist	Algebra 1 , the written exa al examination i miner mission to asses Registration for ve obtained the fir registration for he current or in on for admission Algebra 2 , the written exa al examination i	mination can be replaced by an in groups (groups of 2, approx. ssment. The lecturer will inform the course will be considered qualification for admission to or assessment into effect. Stu- the subsequent semester. For n to assessment anew. mination can be replaced by an in groups (groups of 2, approx.				
				Asses	Language of asses Other prerequisite students about th a declaration of w assessment over a dents who meet a assessment at a la ssment in module co 2 ECTS, Method of oral examination of Language of asses Only after success or module compon	ssment: German, Engl es: Certain prerequisité e respective details a vill to seek admission the course of the sem ater date, students wi omponent 10-M-LNA- I f grading: numerical g of one candidate each asment: German, Engl sful completion of mo nent 10-M-LNA-2 is a p	ish if agreed upon with the exa es must be met to qualify for ad- t the beginning of the course. to assessment. If students har eester, the lecturer will put the e admitted to assessment in t l have to obtain the qualification P-082: Examination in Linear A rade (approx. 30 minutes) ish if agreed upon with the exa dule components: Successful prerequisite for participation in	aminer mission to asses Registration for ve obtained the eir registration for he current or in on for admission lgebra aminer completion of n module compo	ssment. The lecturer will inform the course will be considered qualification for admission to or assessment into effect. Stu- the subsequent semester. For n to assessment anew.				
	other p	rerequis	sites	By wa	By way of exception, additional prerequisites are listed in the section on assessments.								
	Referre	d to in L	PO I	§73 (1) 2. Mathematik Li	neare Algebra, Algebr	a und Elemente der Zahlentheo	orie					

10-M-NM2-082-	Numer	umerical Mathematics 2									
m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		V + Ü	no information on S	WS (weekly contact	hours) and course language ava	ailable)			
	Metho	d of asse	essment	writte exami Langu	n examination (appr ination of one candio lage of assessment:	ox. 90 minutes); if ar date each (approx. 20 German, English if ag	nnounced by the lecturer, the w o minutes) or an oral examinatio greed upon with the examiner	ritten examinat on in groups (gr	ion can be replaced by an oral roups of 2, approx. 30 minutes)		
	other p	prerequis	ites	Certai tive d on to the le sessm ficatio	n prerequisites mus etails at the beginnin assessment. If stude cturer will put their r nent in the current or on for admission to a	t be met to qualify fo ng of the course. Reg ents have obtained th egistration for asses r in the subsequent s assessment anew.	r admission to assessment. The istration for the course will be c ne qualification for admission to sment into effect. Students who emester. For assessment at a la	e lecturer will in considered a de o assessment o o meet all prerec ater date, stude	form students about the respec- claration of will to seek admissi- ver the course of the semester, quisites will be admitted to as- nts will have to obtain the quali-		
	Referre	eferred to in LPO I § 73 (1) 5. Mathematik Angewandte Mathematik									

10-M-DFT-082-m01	Ordina	ry Differ	rential Equ	uations and	Complex Ana	lysis					
	ECTS	13	Duratior	2 Se	mester	Method of grading	numerical grade		Modul level	undergraduate	
	Course	2S		This modul • 10-N • 10-N • 10-N	e comprises 3 1-DFT-1-082: V 1-DFT-2-082: V 1-DFT-P-082: N	y module component + Ü (no information / + Ü (no information Λ (no information on	s. Information on co on SWS (weekly co on SWS (weekly co SWS (weekly conta	ourses will be ntact hours) a ontact hours) a act hours) and	e listed separate and course lang and course lang l course languag	ely for each module component. uage available) guage available) ge available)	
	Metho	d of asse	essment	Assessmer stated othe	nt in this modu erwise, succes	lle comprises the as sful completion of tl	sessments in the in ne module will requ	idividual mod ire successfu	lule components l completion of	s as specified below. Unless all individual assessments.	
				Assessmer 4 EC • writt oral 30 n • Lang • Othe stud a de asse dent asse Assessmer • 7 EC • writt oral 30 n • Lang • Othe • Stud • Othe • Othe • Stud • Othe • Ot	t in module c TS, Method of en examination examination of inutes) guage of asses er prerequisite lents about th eclaration of w essment over a ts who meet a essment at a la of in module c TS, Method of en examination examination of inutes) guage of asses er prerequisite	omponent 10-M-DFT f grading: (not) succe on (approx. 90 minut of one candidate eac assment: German, En- s: Certain prerequisi e respective details ill to seek admissio the course of the se atter date, students v omponent 10-M-DFT f grading: (not) succe on (approx. 90 minut of one candidate eac assment: German, En-	1-082: Ordinary Differst essfully completed es); if announced by th (approx. 20 minu- glish if agreed upon tes must be met to of at the beginning of n to assessment. If mester, the lecture be admitted to ass vill have to obtain th -2-082: Introduction essfully completed es); if announced by th (approx. 20 minu- glish if agreed upon tes must be met to o	fferential Equ y the lecturer, ites) or an ora with the exan qualify for adr f the course. I students hav r will put thei essment in th ne qualification n to Complex y the lecturer, ites) or an ora with the exan qualify for adr	ations Ordinary the written exar al examination i miner mission to asses Registration for ve obtained the ir registration for on for admission Analysis Introdu- the written exar al examination i miner mission to asses	Differential Equations nination can be replaced by an n groups (groups of 2, approx. sement. The lecturer will inform the course will be considered qualification for admission to or assessment into effect. Stu- the subsequent semester. For n to assessment anew. uction to Complex Analysis nination can be replaced by an n groups (groups of 2, approx.	
				stud a de asse dent asse	lents about th eclaration of w essment over t ts who meet a essment at a la	e respective details ill to seek admissio the course of the se ill prerequisites will ater date, students v	at the beginning of n to assessment. If mester, the lecture be admitted to ass vill have to obtain th	the course. students hav r will put thei essment in the ne qualification	Registration for ve obtained the ir registration for ne current or in on for admissior	the course will be considered qualification for admission to or assessment into effect. Stu- the subsequent semester. For n to assessment anew.	
				Assessmer	nt in module c	omponent 10-M-DFT	-P-082: Examinatio	n in Ordinary	Differential Equ	ations and Complex Analysis	
				 2 EC oral 	IS, Method of examination (f grading: numerical	grade h (approx, 30 minu	tes)			
				 Language of assessment: German, English if agreed upon with the examiner 							
				 Only mod 	after success lule componer	ful completion of mo nt 10-M-DFT-2 is a pr	odule components: erequisite for partic	Successful co	ompletion of mo odule componer	dule component 10-M-DFT-1 or It 10-M-DFT-P.	
	other p	orerequis	sites	By way of e	exception, add	itional prerequisites	are listed in the se	ction on asse	ssments.		
	Referre	ed to in L	PO I	§ 73 (1) 1. N	Aathematik Ar	nalysis					

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10-M-VAN-082-	Advanced Anal	ysis					1			
m01	ECTS 8	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		Ü + V	J + V (no information on SWS (weekly contact hours) and course language available)						
	Method of asse	essment	writte	vritten examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral						
			exam	examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)						
	other prerequis	sites	Certai	Cartain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the response						
		Siles	tive d	tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admissi-						
			on to	on to assessment. If students have obtained the qualification for admission to assessment over the course of the semester,						
			the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to as-							
			ficatio	fication for admission to assessment anew.						
	Referred to in L	PO I	§73 (73 (1) 1. Mathematik Analysis						
10-M-GAP-092-	Geometric Ana	lysis and	Partia	l Differential Equati	ons					
m01	ECTS 13	Duration	1	2 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		This r	nodule comprises 3	module components	. Information on courses will	be listed separate	ely for each module component.		
			•	 10-M-GAP-2-092: V + Ü (no information on SWS (weekly contact hours) and course language available) 10-M-GAP-2-092: V + Ü (no information on SWS (weekly contact hours) and course language available) 						
			•	10-M-GAP-P-092: N	Λ (no information on	SWS (weekly contact hours)	and course langua	ge available)		
	Method of asse	essment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.							
			 Assessment in module component 10-M-GAP-1-092: Geometric Analysis Geometric Analysis 7 ECTS, Method of grading: (not) successfully completed a) written examination (approx. 90 minutes; usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner 							
			٠	Other prerequisites	s: Modules 10-M-ANA	and 10-M-LNA are recomme	nded.			
			Asses	sment in module co	mponent 10-M-GAP-	2-092: Partial Differential Eq	uations Partial Dif	ferential Equations		
			 4 ECTS, Method of grading: (not) successfully completed a) written examination (approx. 90 minutes; usually chosen) or b) oral examination of one candidate each (approx. 90 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner 							
			•	Other prerequisite	s: Modules 10-M-ANA	and 10-M-LNA are recomme	nded.			
			Asses	ssment in module co 2 FCTS Method of	mponent 10-M-GAP-	P-092: Examination in Geom rade	etric Analysis and	Partial Differential Equations		
			•	oral examination o	of one candidate each	(approx. 30 minutes)				
			•	Language of asses	sment: German, Engl	ish if agreed upon with the e	xaminer			
			•	Only after success	iul completion of mo	dule components: 10-M-GAP	-1 Or 10-M-GAP-2			
	other prerequis	sites	By wa	y of exception, addi	itional prerequisites	are listed in the section on a	ssessments.			

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10-M-MWR-092-	Modelli	ng and	Computa	tional	Science						
m01	ECTS	8	Duratio	ı	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5	-	V + Ü	(no information or	SWS (weekly contact	hours) and course language a	vailable)	·		
	Method	ofasse	essment	a) wri	a) written examination (approx. 90 minutes; usually chosen) or b) oral examination of one candidate each (approx. 20 minu						
				tes) o	r c) oral examinati	on in groups (groups o	f 2, approx. 30 minutes)				
Compulsory Electiv	es (62 E	CTS cre	dits)								
Mathematics 1 (8 E	CTS cred	lits)									
Students must com	plete mo	odules v	worth no	less th	an 8 ECTS credits;	however, of the two m	odules 10-M-EZT and 10-M-ZAI	L no more than o	ne may be taken.		
10-M-EDM-072-	Introduction to Discrete Mathematics										
m01	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		V + Ü	(no information or	SWS (weekly contact	hours) and course language a	vailable)			
	Method	of asse	essment	writte	n examination (ap	prox. 90 minutes); if a	nnounced by the lecturer, the	written examinat	tion can be replaced by an oral		
				exam	ination of one can	didate each (approx. 2 t. Cormon, English if a	o minutes) or an oral examination	tion in groups (g	roups of 2, approx. 30 minutes)		
	ather prorequisites Cortain prorequisites must be mot to qualify for admission to assessment. The last way will inform stu								forme atual on to a bout the superior		
	other pi	rerequis	sites	tive d	in prerequisites mi	ust be met to quality to	or admission to assessment. If	ne lecturer will in considered a de	form students about the respec-		
				on to	assessment. If stu	dents have obtained t	he gualification for admission	to assessment of	over the course of the semester.		
				the le	cturer will put thei	r registration for asses	sment into effect. Students wh	no meet all prere	quisites will be admitted to as-		
				sessn	nent in the current	or in the subsequent s	semester. For assessment at a	later date, stude	ents will have to obtain the quali-		
				ficatio	on for admission to	assessment anew.					
	Referred	d to in L	.PO I	§73 (1) 2. Mathematik L	ineare Algebra, Algebr	a und Elemente der Zahlenthe	orie			
10-M-FAN-072-m01	Introdu	ction to	Function	al Ana	lysis		r				
	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5	_	V + Ü	(no information or	SWS (weekly contact	hours) and course language a	vailable)			
	Method	ofasse	essment	writte	n examination (ap	prox. 90 minutes); if a	nnounced by the lecturer, the	written examinat	tion can be replaced by an oral		
				exam	ination of one can	didate each (approx. 2	o minutes) or an oral examina	tion in groups (g	roups of 2, approx. 30 minutes)		
		<u> </u>	•.	Langu	lage of assessmen	t: German, English if a	greed upon with the examiner				
	other pi	rerequis	sites	Certa	in prerequisites mi	ust be met to qualify to	or admission to assessment. If	he lecturer will in	form students about the respec-		
				on to	assessment. If stu	dents have obtained t	he qualification for admission	to assessment of	over the course of the semester.		
				the le	cturer will put thei	r registration for asses	sment into effect. Students wh	no meet all prere	quisites will be admitted to as-		
				sessn	nent in the current	or in the subsequent s	semester. For assessment at a	later date, stude	ents will have to obtain the quali-		
				ficatio	on for admission to	assessment anew.					
	Referred	d to in L	.PO I	§73 (1) 1. Mathematik A	nalysis					

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10-M-ORS-072-	Operat	Operations Research											
m01	ECTS	5	Duratio	า	1 semester	Method of grading numerical gr	rade	Modul level	undergraduate				
	Course	:S		V + Ü	V + Ü (no information on SWS (weekly contact hours) and course language available)								
	Metho	d of asse	essment	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner									
	other p	prerequis	sites	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respec- tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admissi- on to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to as- sessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the quali- fication for admission to assessment anew.									
	Referre	ed to in L	.PO I	§73 (73 (1) 5. Mathematik Angewandte Mathematik								
10-M-EZT-072-m01	Introdu	uction to	Number	Theory	leory								
	ECTS	5	Duration	1	1 semester	Method of grading numerical gr	rade	Modul level	undergraduate				
	Courses			V + Ü	(no information on S	SWS (weekly contact hours) and co	ourse language ava	ailable)					
	Method of assessment			a) written examination (90 minutes; usually chosen) or b) oral examination of one candidate each (20 minutes) or c) oral ex- amination in groups (groups of 2, 30 minutes)									
10-M-NLD-072-	Non-Linear Dynamics												
m01	ECTS	5	Duration	1	1 semester	Method of grading numerical gr	rade	Modul level	undergraduate				
	Course	s		V + Ü (no information on SWS (weekly contact hours) and course language available)									
	Metho	d of asse	essment	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner									
	other prerequisites			Certai tive d on to the le sessn ficatio	n prerequisites mus etails at the beginni assessment. If stude cturer will put their r nent in the current o on for admission to a	t be met to qualify for admission t ng of the course. Registration for t ents have obtained the qualification registration for assessment into ef r in the subsequent semester. For assessment anew.	to assessment. The he course will be c on for admission to fect. Students who assessment at a la	nent. The lecturer will inform students about the respec- will be considered a declaration of will to seek admissi- ission to assessment over the course of the semester, ents who meet all prerequisites will be admitted to as- nt at a later date, students will have to obtain the quali-					
	Referre	ea to in L	.PU I	873(1) 1. Mathematik Ana	alysis							

10-M-GEO-082-	Introduction to Geometry											
m01	ECTS	8	Duratio	on 1 semester Method of grading numerical grade Modul level undergraduate								
	Courses			 This module has 2 components; information on courses listed separately for each component. 10-M-GEO-1-082: V + Ü (no information on language and number of weekly contact hours available) 10-M-GEO-2-082: V + Ü (no information on language and number of weekly contact hours available) 								
	Metho	od of asso	essment	t This module has the following 2 assessment components. To pass the module as a whole students must pass one of the two assessment components.								
				 Assessment component to module component 10-M-GEO-1-082: Einführung in die Projektive Geometrie 8 ECTS credits, method of grading: numerical grade written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: English, German if agreed upon with the examiner Other prerequisites: Admission prerequisite to assessment: Successful completion of approx. 50% of exercises. Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment at a later date, students will have to obtain the qualification for admission to assessment at a later date, students will have to of grading: numerical grade written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: English, German if agreed upon with the examiner Other prerequisites: Admission prerequisite to assessment: successful completion of approx. 50% of exercises. Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. English, German if agr								
	other	prerequi	sites	By way of exception, additional prerequisites are listed in the section on assessments.								
	Referr	ed to in L	POI	§ 73 (1) 4. Mathematik Geometrie								

10-M-ZAL-082-m01	Number Theory and Algebra										
	ECTS 13 Duration			า	2 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Cours	es		 This module comprises 3 module components. Information on courses will be listed separately for each module component. 10-M-ZAL-1-082: V + Ü (no information on SWS (weekly contact hours) and course language available) 10-M-ZAL-2-082: V + Ü (no information on SWS (weekly contact hours) and course language available) 10-M-ZAL-P-082: M (no information on SWS (weekly contact hours) and course language available) 							
	Method of assessment			Asses stated	sment in this modu d otherwise, success	le comprises the ass sful completion of the	essments in the individual mo e module will require successf	dule components ful completion of	s as specified below. Unless all individual assessments.		
				 Assessment in module component 10-M-ZAL-1-082: Introduction to Number Theory Introduction to Number Theory 4 ECTS, Method of grading: (not) successfully completed written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. Assessment in module component 10-M-ZAL-2-082: Introduction to Algebra Introduction to Algebra 7 ECTS, Method of grading: (not) successfully completed written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes); Language of assessment to Grading: (not) successfully completed 							
				Asses	Other prerequisites students about the a declaration of wi assessment over t dents who meet al assessment at a la sement in module co 2 ECTS, Method of oral examination o Language of asses Only after success module componen	s: Certain prerequisite e respective details a ill to seek admission the course of the sen ll prerequisites will b iter date, students wi omponent 10-M-ZAL-I grading: numerical g of one candidate each sment: German, Engl ful completion of moo it 10-M-ZAL-2 is a pre	es must be met to qualify for ac at the beginning of the course to assessment. If students have nester, the lecturer will put the e admitted to assessment in ll have to obtain the qualificat P-082: Examination in Number rade (approx. 30 minutes) ish if agreed upon with the ex- dule components: Successful of requisite for participation in m	dmission to asses . Registration for ave obtained the eir registration fo the current or in ion for admissior r Theory and Alge aminer completion of mo todule componen	sment. The lecturer will inform the course will be considered qualification for admission to r assessment into effect. Stu- the subsequent semester. For to assessment anew. bra dule component 10-M-ZAL-1 or it 10-M-ZAL-P.		
	other	prerequis	sites	By wa	y of exception, addi	itional prerequisites a	are listed in the section on ass	sessments.			
	Referr	ed to in L	PO I	§73 (1) 2. Mathematik Lir	neare Algebra, Algebr	a und Elemente der Zahlenthe	eorie			

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10-M-ST1-082-m01	no1 Stochastics 1									
	ECTS 8	Duratior	۱	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	(no information on	SWS (weekly contact	hours) and course language	available)			
	Method of asse	essment	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner							
	other prerequisites		Certai tive de on to a the lee sessm ficatio	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respec- tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admissi- on to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to as- sessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the quali- fication for admission to assessment anew.						
	Referred to in LPO I		§ 73 (:	.) 3. Mathematik St	ochastik					
10-M-ST2-082-m01	Stochastics 2									
	ECTS 5	Duratior	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	(no information on	SWS (weekly contact	hours) and course language	available)			
	Method of asse	essment	writter exami Langu	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner						
	other prerequis	sites	tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission for admission to assessment at a later date.							
	Referred to in L	PO I	§ 73 (:	l) 3. Mathematik St	athematik Stochastik					
Mathematics 2 (4 E	CTS credits)									
10-M-RCS-082-	Reading Course	e Stochas	stics							
m01	ECTS 4	Duratior	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		A (no	nformation on SWS	5 (weekly contact hou	irs) and course language ava	ilable)			
	Method of asse	essment	a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)							
10-M-RCD-082-	Reading Course	e Discrete	e Math	ematics	<u>.</u>					
m01	ECTS 4	Duration	۱	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		A (no	nformation on SWS	Տ (weekly contact hoւ	ırs) and course language ava	ilable)			
	Method of asse	essment	a) talk	(approx. 30 minut	es) or b) written elabo	oration (approx. 5 to 10 page	s)			
10-M-RCF-082-m01	Reading Course	e Functio	nal Ana	llysis						
	ECTS 4	Duration	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		A (no	nformation on SWS	S (weekly contact hou	irs) and course language ava	ilable)			
	Method of asse	essment	a) talk	(approx. 30 minut	es) or b) written elabo	pration (approx. 5 to 10 page	s)			
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10-M-RCO-082-	Reading Course Operations Research										
m01	ECTS 4 Duration		n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses A (no information on SWS (weekly contact hours) and course language available)										
	Method	Method of assessment a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)									
10-M-RCY-082-	Reading Course Dynamical Systems										
m01	ECTS 4 Duration			1 semester Method of grading numerical grade		Modul level	undergraduate				
	Courses			A (no	(no information on SWS (weekly contact hours) and course language available)						
	Method of assessment a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)										
10-M-RCP-082-	Reading	Cours	e Optimis	sation							
m01	ECTS 4 Duratio			1	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			A (no	information on SWS	(weekly contact hours) and course language availa	ble)				
	Method	Aethod of assessment a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)									
Mathematics 3 (5 E	CTS cred	its)									
10-M-BSA-072-	Seminar	' in Ana	alysis								
m01	ECTS 5 Duratio			n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			S (no	information on SWS	(weekly contact hours) and course language availa	ble)				
	Method of assessment			talk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Language of assessment: German, English if agreed upon with the examiner							
	Referred to in LPO I			§ 73 (§ 73 (1) 1. Mathematik Analysis						
10-M-BSL-072-m01	Seminar in Linear Algebra										
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			S (no information on SWS (weekly contact hours) and course language available)							
	Method of assessment			talk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Language of assessment: German, English if agreed upon with the examiner							
	Referred	to in L	.PO I	§ 73 (1) 2. Mathematik Lin	eare Algebra, Algebra und Elemente der Zahlentheo	orie				
10-M-BSE-072-	Seminar	' in Alg	ebra								
m01	ECTS	5	Duratio	1	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			S (no	information on SWS	(weekly contact hours) and course language availa	ble)				
	Method of assessment			talk (a Asses Langu	alk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Anguage of assessment: German, English if agreed upon with the examiner						
	Referred	to in L	PO I	§ 73 (1) 2. Mathematik Lin	eare Algebra, Algebra und Elemente der Zahlentheo	orie				

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10-M-BSG-072-	Semina	Seminar in Geometry										
mo1	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses	;		S (no	δ (no information on SWS (weekly contact hours) and course language available)							
	Method of assessment			talk (Asse: Langi	talk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Language of assessment: German, English if agreed upon with the examiner							
	Referred	Referred to in LPO I			3 73 (1) 4. Mathematik Geometrie							
10-M-BSZ-072-	Semina	r in Nu	mber The	ory								
m01	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses	;		S (no	information on SWS	(weekly contact hours) and course language	available)	·				
	Method of assessment			talk (Asse: Langi	talk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Language of assessment: German, English if agreed upon with the examiner							
	Referred	l to in l	PO I	§73	73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie							
10-M-BSW-072- m01	Semina	Seminar in Ordinary Differential Equations										
	ECTS 5 Duratio			n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses	i		S (no	information on SWS	6 (weekly contact hours) and course language	available)					
	Method of assessment			talk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Language of assessment: German, English if agreed upon with the examiner								
	Referred to in LPO I			§73	§ 73 (1) 1. Mathematik Analysis							
10-M-BSC-072-	Semina	r in Cor	nplex An	alysis								
m01	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses	;	-	S (no	S (no information on SWS (weekly contact hours) and course language available)							
	Method	ofass	essment	talk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Language of assessment: German, English if agreed upon with the examiner								
	Referred	l to in l	PO I	§73	(1) 1. Mathematik An	alysis						
10-M-BSN-072-	Semina	r in Nu	merical M	lathem	natics							
m01	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses		_	S (no	information on SWS	6 (weekly contact hours) and course language	available)					
	Method	of ass	essment	talk (Asses Langi	talk (approx. 60 minutes) Assessment offered: in the semester in which the course is offered Language of assessment: German, English if agreed upon with the examiner							
	Referred	l to in l	PO I	§73	§ 73 (1) 5. Mathematik Angewandte Mathematik							

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10-M-BSS-072-	Seminar in Stochastics										
m01	ECTS 5	Duratio	n	1 semester	Method of grading n	umerical grade	Modul level	undergraduate			
	Courses		S (no	information on SWS	(weekly contact hours)) and course language avail	able)				
	Method of	assessment	talk (talk (approx. 60 minutes)							
			Asses	Assessment offered: in the semester in which the course is offered							
	Deferred to		Langu	anguage of assessment. German, English if agreed upon with the examined							
			8730	1) 3. Mathematik Sto							
10-M-BSF-072-m01	Seminar in	Functional A	natysi	lysis							
	ECIS 5	Duratio	n	1 semester	Method of grading ni	iumerical grade	Modul level	undergraduate			
	Courses		S (no	Information on SWS	(weekly contact hours)	and course language avail	able)				
	Method of	Aethod of assessment talk (approx. 60 minutes)									
10-M-BSU-072-	Seminar in	Operation R	esearc	h							
mor	ECIS 5	Duratio	n La í	1 semester	Method of grading ni	iumerical grade	Modul level	undergraduate			
	Courses		S (no	information on SWS	(weekly contact hours)) and course language avail	able)				
	Method of assessment talk (approx. 60 minutes)										
10-M-BSD-072-	Seminar in	Discrete Ma	thema	tics							
moi	ECIS 5 Duratio		n	1 semester	Method of grading n	umerical grade	Modul level	undergraduate			
	Courses		S (no	information on SWS	(weekly contact hours)) and course language avail	able)				
	Method of	assessment	talk (approx. 60 minutes)							
Application-oriente	ed Subject (3	35 ECTS credi	its)	d auchia ata (Diala aia	(Dialage) Chamia (Cha	uninter) lafo una otila (Como a st					
fied mandatory cou	rses and/or	application-o mandatory e	elective	a subjects (Biologie	(Biology), Chemie (Chei	emistry), informatik (Comput	er Science) and	Physik (Physics)) with the speci-			
Application-oriente	d Subject C	hemistry (35	ECTS	credits)							
Application-oriente	ed Subject C	hemistry Cor	npulso	ry Courses (26 ECTS	credits)						
11-EFNF-072-m01	Introductio	on to Physics	for Stu	dents of Non-physic	cs-related Minor Subjee	cts					
	ECTS 7	Duratio	n	2 semester	Method of grading n	umerical grade	Modul level	undergraduate			
	Courses	N.	V + V	(no information on S	SWS (weekly contact ho	ours) and course language a	vailable)	<u>`</u>			
	Method of	assessment	writte	n examination (app	rox. 120 minutes)						
	Participant cation of p	s and allo- laces	Only	as part of pool of ger	neral key skills (ASQ): 1	10 places. Places will be allo	ocated by lot.				
08-CM1-072-m01	General Ch	emistry for M	N athen	natics Majors							
	ECTS 6	Duratio	n	1 semester	Method of grading n	umerical grade	Modul level	undergraduate			
	Courses	<u>.</u>	V (no	information on SWS	(weekly contact hours)) and course language avail	able)				
	Method of	assessment	writte	en examination (app	rox. 60 minutes)						

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08-PC1-092-m01	Physical Chemistry 1													
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate					
	Course	S		V + Ü	/ + Ü + V + Ü (no information on SWS (weekly contact hours) and course language available)									
	Method of assessment			a) 1 to	a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3									
				tion ii	tion in groups (groups of 2, approx. 30 minutes)									
	other prerequisites			Admis ning o a max	dmission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the begin- ning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually maximum of 2 incidents of unexcused absence).									
08-0C1-092-m01	Organi	Organic Chemistry 1												
	ECTS	5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate					
	Course	S		V + Ü	(no information on	SWS (weekly contact	hours) and course language av	ailable)						
	Method of assessment			a) 1 to writte tion ii	a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examina- tion in groups (groups of 2, approx. 30 minutes)									
	other prerequisites			Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the begin- ning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).										
	Referred to in LPO I			§62 (1) 2. Chemie "Orgar	nische und Bioorgani	sche Chemie"							
Application-oriente	ed Subje	ct Chem	nisty Com	pulsor	y Electives (9 ECTS	credits)								
08-0C2-092-m01	Organic Chemistry 2													
	ECTS	9	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate					
	Course	S		V + Ü	+ V (no information	on SWS (weekly con	tact hours) and course language	e available)						
	Metho	d of ass	essment	a) 1 to exam	3 written examinat inations: 60 minute	tions (1 written exami es each) or b) oral exa	nation: 90 minutes; 2 written ex mination in groups (groups of 2	xaminations: 6c 2, approx. 30 mi	o or 90 minutes each; 3 written nutes)					
08-TC-092-m01	Theore	tical Mo	odels in C	hemist	ry									
	ECTS	3	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate					
	Course	S		V + Ü	(no information on	SWS (weekly contact	hours) and course language av	ailable)						
	Method of assessment			a) 1 to each; c) ora	3 written examinat 3 written examinat l examination in gro	tions (1 written exami ions: approx. 60 min oups (groups of 2, ap	nation: approx. 90 minutes; 2 v utes each) or b) oral examinatio prox. 30 minutes)	vritten examination n of one candid	tions: approx. 60 or 90 minutes late each (approx. 20 minutes) or					
	other prerequisites			Admis ning o a max	ssion prerequisite to of the course (usual simum of 2 incident	o assessment: succe ly 70% of exercises to s of unexcused abse	ssful completion of exercises in b be successfully completed) as nce).	the respective well as regular	classes as specified at the begin- attendance of exercises (usually					

08-PC3-092-m01	Physical	l and Tl	heoretica	l Chen	nistry 3: Symmetry	and Quantum Chemis	stry			
	ECTS	6	Duration	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			V + Ü	V + Ü + V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method	of asse	essment	a) 1 to	o 3 written examina	tions (1 written exami	nation: 90 minutes; 2 written e	xaminations: 60	o or 90 minutes each; 3 written	
				exam	inations: 60 minute	es each) or b) oral exa	mination of one candidate eac	h (approx. 20 m	inutes) or c) oral examination in	
	other nre	erequis	ites	Admi	ssion prerequisite t	o assessment: succes	ssful completion of exercises in	the respective	classes as specified at the begin-	
	other pro	crequit	Jie J	ning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of a maximum of 2 incidents of unexcused absence).						
Application-oriente	ation-oriented Subject Computer Science (35 ECTS credits)									
Students are recom	imended	to sele	ct one of	the fol	llowing four combin	ations: (a) 10-I-RAL, 1	0-I-ST, 10-I-AR, 10-I-RAK, 10-I-RI	<, (b) 10-I-ADS, 1	10-I-ST, 10-I-PP, 10-I-SWP, (c) 10-I-	
ADS, 10-I-SI, 10-I-D	B, 10-I-WI	MS, 10-	-1-00P, (c	1) 10-l-	ADS, 10-I-II, 10-I-LU	IG, 10-I-G I, 10-I-K I				
Application-oriente	ed Subject	t Comp	outer Scie	ence Co	ompulsory Electives	s (35 ECTS credits)				
10-I-IU-072-m01	Informat	tion tra	insmissio	on	1		· · ·	1	· · ·	
	ECTS	8	Duration	1 	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			V + U	(no information on	SWS (weekly contact	hours) and course language av	vailable)		
	Method of assessment written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups 40 minutes)								ips of 2: 30 minutes, groups of 3:	
10-I-RAL-072-m01	Digital c	comput	er systen	ns						
	ECTS	8	Duration	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			V + Ü	(no information on	SWS (weekly contact	hours) and course language av	vailable)		
	Method	ofasse	essment	writte 40 mi	en examination (80 inutes)	minutes) or oral exam	ination (one candidate each: 2	o minutes, grou	ips of 2: 30 minutes, groups of 3:	
10-I-TI-072-m01	Theoreti	ical info	ormatics							
	ECTS 8	8	Duration	<u>1</u>	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			V + Ü	(no information on	SWS (weekly contact	hours) and course language av	vailable)		
	Method	ofasse	essment	writte 40 mi	en examination (80 inutes)	minutes) or oral exam	ination (one candidate each: 2	o minutes, grou	ips of 2: 30 minutes, groups of 3:	
10-I-ADS-072-m01	Algorith	m and	data stru	ctures						
	ECTS	8	Duration	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			V + Ü	(no information on	SWS (weekly contact	hours) and course language av	vailable)		
	Method	of asse	essment	writte 40 mi	en examination (80 inutes)	minutes) or oral exam	ination (one candidate each: 2	o minutes, grou	ips of 2: 30 minutes, groups of 3:	
10-I-AR-072-m01	Automat	tion an	d control	techn	ology					
	ECTS	8	Duration	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			V + Ü	(no information on	SWS (weekly contact	hours) and course language av	vailable)		
	Method	ofasse	essment	writte	en examination (80	minutes)				

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10-I-DB-072-m01	Data bases										
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	/ + Ü (no information on SWS (weekly contact hours) and course language available)							
	Method of assessment		writte 25 mi	written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)							
10-I-GT-072-m01	Graphtheor	retical conce	pts and	d algorithms							
	ECTS 8 Duration		n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	ailable)				
	Method of a	assessment	writte 40 mi	written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)							
10-I-KT-072-m01	Theory of c	omplexity									
	ECTS 8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	ailable)				
	Method of assessment		writte 40 mi	written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)							
10-I-LOG-072-m01	Logic for in	formatics									
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	ailable)				
	Method of assessment		writte 25 mi	written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)							
10-I-00P-072-m01	Object orie	nted prograr	nming								
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	V + Ü (no information on SWS (weekly contact hours) and course language available)							
	Method of a	assessment	written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)								
10-I-PP-072-m01	Practical co	ourse in prog	rammi	amming							
	ECTS 9	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Courses		P (no	information on SWS	(weekly contact hou	rs) and course language availal	ole)				
	Method of a	assessment	comp minut	completion of programming exercises (expenditure of time as specified) and final examination: written examination (60 to 90 minutes) or oral examination (one candidate each: 10 to 15 minutes, groups of 2: 20 minutes, groups of 3: 30 minutes)							
10-I-RAK-072-m01	Computer a	rchitecture									
	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	ailable)				
	Method of a	assessment	writte 40 mi	n examination (8o n nutes)	ninutes) or oral exam	ination (one candidate each: 20	o minutes, grou	ips of 2: 30 minutes, groups of 3:			

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10-I-RK-072-m01	Computer netw	orks and	comm	unication systems						
	ECTS 8	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	(no information on	SWS (weekly contact	hours) and course language av	/ailable)			
	Method of asse	essment	writte 40 mi	written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)						
10-I-ST-072-m01	Software techn	ology								
	ECTS 8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of asse	essment	writte 40 mi	vritten examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: to minutes)						
10-I-SWP-072-m01	Practical cours	e in softv	vare							
	ECTS 10	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	J	P (no	information on SWS	S (weekly contact hou	rs) and course language availa	ble)			
	Method of asse	essment	perioo poner vidua per gr	dic presentations o nts (software) and t l student required; oup)	n project progress wit he documentation of software and project o	h regard to detailing problem s these; if project is completed i documentation as specified in	pecifications, tl n groups, proof assignment, fin	ne corresponding solution con of contributions made by the al presentation (10 to 15 minu	m- indi- ıtes	
10-I-WMS-072-m01	101 Knowledge management systems and data mining									
	ECTS 10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	+ Ü (no information	on SWS (weekly cont	tact hours) and course languag	e available)			
	Method of asse	essment	writte 40 mi	n examination (80 nutes)	minutes) or oral exam	ination (one candidate each: 2	o minutes, grou	ips of 2: 30 minutes, groups o	of 3:	
Application-oriente If consent is obtain dits each).	ed Subject Physi ed from the examination examination of the examinatio	i cs (35 EC mination	TS cre comm	dits) ittee, modules 11-El	NNF1 and 11-ENNF2 (7	ECTS credits each) may be rep	laced with mod	ules 11-E1 and 11-E2 (8 ECTS c	:re-	
Application-oriente	d Subject Physi	cs Comp	ulsory	Courses (16 ECTS c	redits)					
11-ENNF1-062-m01	Introduction to	Physics	Part 1	for students of Phy	sics Related Minor Su	ıbjects				
	ECTS 7	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	(no information on	SWS (weekly contact	hours) and course language av	/ailable)			
	Method of asse	essment	writte	n examination (app	orox. 120 minutes)					
	Participants an cation of places	d allo- s	Only a	as part of pool of ge	eneral key skills (ASQ)	: 20 places. Places will be allo	cated by lot.			
11-ENNF2-062-m01	Introduction to	Physics	Part 2	for students of Phy	sics Related Minor Su	ubjects				
	ECTS 7	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	no information on	SWS (weekly contact	hours) and course language av	/ailable)			
	Method of asse	essment	writte	n examination (app	orox. 120 minutes)					
	Participants an cation of places	d allo- s	Only a	as part of pool of ge	eneral key skills (ASQ)	: 20 places. Places will be allo	cated by lot.			
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11-PFR-072-m01	Measurements	and Data	a Analy	vsis							
	ECTS 2	Duration	۱	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	vailable)				
	Method of asse	essment	writte	n examination (app	rox. 120 minutes)						
Application-oriente	d Subject Physi	ics Comp	ulsory	Electives 1 (3 ECTS	credits)						
11-PNNF-062-m01	Physics Labora	tory Cou	r <mark>se for</mark>	students of Physics	s Related Minor Subj	ects					
	ECTS 3	Duratior	۱	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Courses		P (no	(no information on SWS (weekly contact hours) and course language available)							
	Method of asse	essment	a) ora	l test (approx. 15 mi	inutes) during experi	ment and b) ungraded written e	examination (ap	prox. 90 minutes)			
	Participants an cation of place	d allo- s	Only a	Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot.							
11-PG-IAF-072-m01	Practical Cours	e									
	ECTS 4	Duratior	1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Courses Method of asse	essment	Beisp weekl Klassi Elektr Welle Atom- Comp This n 1. Lab Tes cou 2. Lab a Te the Stude Stude Stude To pa: Stude	iele aus Mechanik, y contact hours) sche Physik (Classi izitätslehre und Sch noptik (Physical Op- und Kernphysik (At uter und Messtechr nodule has the follo o course in part 1: a) tat (exam) is passed irse (approx. 30 min o course in part 2: a) estat (exam) is passe course (approx. 30 ents must register fo onts will be offered o pass both elements ss this module, stud ast this module, stud	Warmelehre und Elek cal Physics, KLP): P (haltungen (Electricity tics, WOP): P (2 week tomic and Nuclear Ph hik (Computers and N wing assessment con Preparing, performin d. b) Talk (with discu- sutes). Preparing, performir ed. b) Talk (with discu- minutes). r assessment compo- one opportunity to ref a) and b). dents must successfu M, KLP or ELS course dents must pass both	ctrik (Examples from Mechanics 2 weekly contact hours) and Circuits, ELS): P (2 weekly cly contact hours) ysics, AKP): P (2 weekly contact Measurement Technology, CMT) mponents og and evaluating the experime ssion) to test the students' un and evaluating the experime ussion) to test the students' un nents 1 and 2 online (registrati cake element a) and/or elemen ully complete two out of the six s prior to attending WOP, AKP of assessment component 1 and	s, Thermodynan contact hours) ct hours) ct hours) cr P (2 weekly co ents will be cons lerstanding of the ents will be cons nderstanding of on deadline to l t b). To pass an courses. or CMT courses. l assessment co	nics and Electricity, BAM): P (2 entact hours) idered successfully completed if a ne physics-related contents of the sidered successfully completed if the physics-related contents of be announced). assessment component, they			
Application oriente	other prerequis		Modu	Electives a (46 ECTS	aradita)						
	Exporte onto 1	cs comp		Cuentum Dhanam	one Introduction At	omic Dhucice)					
11-E3-072-m01		Duration	(Optic:	s, Quantum Phenom	Mothod of grading	omic Physics)	Madullaval	undorgraduato			
		Duration	ι V, Ü	no information on (SWS (wookly contact	hours) and course language as		undergraduate			
	Mothod of acco	comont	v + U	n oxamination (ann	roy 120 minutoc)	nours) and course language a	vallable)	_			
	method of asse	essment	white	ii examination (app							
Bachelor's with 1 major C	omputational Mathem	atics (2009)				JMU Würzburg • generated 26-Aug-2	024 • exam. reg. data	record 82 f24 - - H 2009 page 21 / 32			

11-T1-072-m01	Theoretical	Physics 1 (T	heoreti	ical Mechanics)						
	ECTS 8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	/ + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of a	ssessment	writte	written examination (approx. 120 minutes)						
11-T2-072-m01	Theoretical Physics 2 (Theoretical Electrostatics and Electrodynamics)									
	ECTS 8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	+ Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of a	issessment	writte	n examination (appr	ox. 120 minutes)					
11-T3-072-m01	Theoretical	Physics 3 (T	heoret	eoretical Quantum Mechanics)						
	ECTS 8 Duration		n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	ailable)			
	Method of a	issessment	written examination (approx. 120 minutes)							
11-T4-072-m01	Theoretical Physics 4 (Theoretical Thermodynamics and Statistics)									
	ECTS 8	Duration	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)							
	Method of a	issessment	written examination (approx. 120 minutes)							
11-E5-082-m01	Experimenta	al Physics 5	(Introd	luction to Solid State	e Physics)					
	ECTS 8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course language av	ailable)			
	Method of a	ssessment	writte	n examination (appr	ox. 120 minutes)					

Application-oriented Subject Biology (35 ECTS credits)

There is a restricted number of places in the application-oriented subject Biologie (Biology). Only those students that have submitted a written application and have obtained prior approval from the subject coordinator (Studienfachverantwortliche(r)) will be able to attend courses offered as part of modules from this application-oriented subject. A decision as to what applicants will be granted approval will be made as follows: applicants will be ranked by lottery and the places offered by the Faculty of Biology in the respective academic year will be allocated according to this ranking. Approval will cover in particular the courses offered as part of modules / module components from the area of mandatory courses. Approval may be withdrawn if students spent two consecutive semesters without completing any modules / module components from the application-oriented subject Biologie (Biology). In the case of students changing degree subjects, approval will become void.

Application-oriented Subject Biology Compulsory Courses (10 ECTS credits)

07-2A2GN-	Genetics, Neurobiology, Behaviour											
V-072-m01	ECTS 6	Duration	1 semester		Method of grading	numerical grade	Modul level	undergraduate				
	Courses	ſ	 This module comprises 3 module components. Information on courses will be listed separately for each module component. o7-2A2GNV-1G-072: V + Ü (no information on SWS (weekly contact hours) and course language available) o7-2A2GNV-2N-072: V + Ü (no information on SWS (weekly contact hours) and course language available) o7-2A2GNV-3V-072: V + Ü (no information on SWS (weekly contact hours) and course language available) 									
	Method of assessment		Assessment in thi stated otherwise,	s modul success	e comprises the asso ful completion of the	essments in the indiv module will require	idual module component successful completion of	s as specified below. Unless all individual assessments.				
			 Assessment in module component o7-2A2GNV-1G-072: Basic Genetics Basic Genetics 2 ECTS, Method of grading: numerical grade written examination (approx. 30 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course. Assessment in module component o7-2A2GNV-2N-072: Basic Neurobiology Basic Neurobiology 2 ECTS, Method of grading: numerical grade written examination (approx. 30 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course. Assessment in module component o7-2A2GNV-2N-072: Basic Neurobiology Basic Neurobiology 2 ECTS, Method of grading: numerical grade written examination (approx. 30 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course. Assessment in module component o7-2A2GNV-3V-072: Behavioural Biology Behavioural Biology 2 ECTS, Method of grading: numerical grade written examination (approx. 30 minutes, word problems and/or multiple choice questions) Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful comple- 									
	other prerequi	sites E	By way of exception, additional prerequisites are listed in the section on assessments.									
	Participants and allo- cation of places		Only as part of "spezielles Studienangebot": 10 places.									
07-1A1Z-072-m01	Structure and	Function of	Cells									
	ECTS 4 Duration		1 semester		Method of grading	numerical grade	Modul level	undergraduate				
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)									
	Method of ass	essment v	written examinati	on (60 m	ninutes)							
	other prerequi	sites A	Admission prereq as specified at the	uisite to beginni	assessment: regular ing of the course.	attendance of exerc	ises and successful comp	oletion of the respective exercises				

Application-oriented Subject Biology Compulsory Electives (25 ECTS credits) Students must take two out of the following three modules: 07-1A1E, 07-1A1P, 07-1A1T. When taking up their studies, students are highly recommended to consult with the course advisory service Biology that will help them choose appropriate modules from the remaining modules.

07-3A3BI-072-m01	Bioir	nformatics	i								
	ECTS	2	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Cour	ses		This n	This module comprises 2 module components. Information on courses will be listed separately for each module component.						
				•	07-3A3BI-1B-072: \$	5 (no information on	SWS (weekly contact hour	rs) and course langua	ge available)		
	Meth	od of asse	essment	Asses stated	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.						
				 Assessment in module component o7-3A3BI-1B-072: Bioinformatics (Lecture) 1 ECTS, Method of grading: numerical grade written examination (approx. 20 minutes) Assessment in module component o7-3A3BI-2B-072: Bioinformatics (Seminar) 1 ECTS, Method of grading: (not) successfully completed term paper (approx. 5 to 10 pages) 							
	Parti catio	cipants an n of place	id allo- s	Only a	is part of Biochemis	try Master's: 5 places	s. Places will be allocated	l by lot.			
07-3A30E-072-	Ecology of plants and animals										
m01	ECTS	6	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses			 Inis module comprises 2 module components. Information on courses will be listed separately for each module component. o7-3A3OE-1T-072: V + Ü (no information on SWS (weekly contact hours) and course language available) o7-3A3OE-2P-072: V + Ü (no information on SWS (weekly contact hours) and course language available) 							
	Method of assessment			Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.							
				Assessment in module component o7-3A3OE-1T-072: Ecology of Animals (Lecture and Practice) Ecology of Animals (Lecture and Practice)							
				 written examination (45 minutes) Assessment in module component 07-3A3OE-2P-072: Ecology of Plant (Lecture and Practice) Ecology of Plant (Lecture and 							
				Practice) 3 ECTS, Method of grading: numerical grade written examination (60 minutes) 							
07-4BFMZ4-092-	Bioir	nformatics	for adva	nced st	udents						
m01	ECTS	5	Duration	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Cour	ses		V + Ü	(no information on S	SWS (weekly contact	hours) and course langua	age available)			
ľ	Meth	od of asse	essment	log (a	pprox. 10 to 20 page	es)					

07-4BFN-	Ecology of Ani	mals for a	dvance	ed students							
V03-092-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course lang	uage available)	_			
	Method of ass	essment	writte	written examination (60 minutes)							
07-4BF-	Biophysics - B	asic cour	se								
PS2-092-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on S	SWS (weekly contact	hours) and course langu	uage available)				
	Method of ass	essment	writte	n examination (60 r	minutes)						
07-4S1M-	Special Bioinf	ormatics									
Z6-092-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V + Ü	⊢Ü (no information on SWS (weekly contact hours) and course language available)							
	Method of ass	essment	log (a	og (approx. 10 to 20 pages)							
07-4S1N-	Neurobiology	I									
V01-092-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		P (no	information on SWS	δ (weekly contact hoι	rs) and course language	e available)				
	Method of ass	essment	log (a	pprox. 10 to 20 page	es)						
07-4S1N-	Ecology of pop	oulations									
V05-092-m01	ECTS 5	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		 This module comprises 2 module components. Information on courses will be listed separately for each module component. 07-4S1NV05-1PO-092: V + Ü (no information on SWS (weekly contact hours) and course language available) 07-4S1NV05-2PO-092: S (no information on SWS (weekly contact hours) and course language available) 								
07-451PS1-002-	Method of ass	essment	Asses statec Asses Popul Asses	sment in this modu d otherwise, success sment in module co ations (Lecture, Pra- 4 ECTS, Method of written examinatio sment in module co 1 ECTS, Method of presentation (appr	le comprises the ass sful completion of th omponent o7-4S1NV(ctice) grading: numerical g on (45 minutes) omponent o7-4S1NV(grading: (not) succes rox. 20 to 30 minutes	essments in the individu e module will require su D5-1PO-092: Basic Ecolo grade D5-2PO-092: Ecology of sofully completed)	ual module component ccessful completion of gy of Populations (Lect Populations (Seminar)	is as specified below. Unless all individual assessments. ture, Practice) Basic Ecology of			
m01		Duration		1 comostor	Method of grading	numerical grade	Modul level	undergraduate			
		Duration	V±Ü	(no information on t	SWS (weekly contact	hours) and course lange					
	Mothod of acc	ocemont	v + U	utorisod practical or	vamination (4 hours)	nouis) and course lange	uaze avaliance)				
	method of ass	essment	Comp	atenseu plactical ex	Annihation (4 nours)						

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07-5S2M-	Specific B	ioinformatics	11							
Z3-092-m01	ECTS 10	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses		V + Ü	/ + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of	assessment	a) wri) written examination (approx. 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each						
			(appr	approx. 30 minutes) or d) oral examination in groups (groups of up to 3 candidates, approx. 60 minutes) or e) presentation						
	F 1 1		(appr	ox. 20 to 30 minutes	s)					
07-1A1E-072-m01	Evolution	- Basics and I	rincip							
	ECIS 1	Duratio	n Loca	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses		U (no	information on SWS	(weekly contact hours) and course language availa	ble)	_			
	Method of	assessment	writte	n examination (30 r	ninutes)					
07-1A1T-072-m01	The Anima	al Kingdom								
	ECTS 4	Duratio	n 	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses		V + Ű	(no information on	SWS (weekly contact hours) and course language av	ailable)				
	Method of assessment		writte	ritten examination (approx. 60 minutes)						
	other prer	equisites	Admis of the	ssion prerequisite to respective exercise	o assessment: regular attendance of and participatic is as specified at the beginning of the course.	on in exercises a	as well as successful completion			
07-1A1P-072-m01	The Plant	Kingdom								
	ECTS 4 Duration		n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses		V + Ü	(no information on	SWS (weekly contact hours) and course language av	ailable)				
	Method of	assessment	writte	written examination (approx. 60 minutes)						
	other prer	equisites	Admi: exerc	Admission prerequisite to assessment: regular attendance of exercises as well as successful completion of the respective exercises.						
07-3A3GE-072-	Genetics									
m01	ECTS 2	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses		V + S	no information on s	SWS (weekly contact hours) and course language av	ailable)				
	Method of	assessment	writte	n examination (30 r	ninutes)					
Thesis (10 ECTS cre	dits)									
10-M-BAC-092-	Thesis Co	mputational N	Nather	natics (Bachelor The	esis)	0				
m01	ECTS 10	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses		(no in	formation on SWS (weekly contact hours) and course language availabl	e)				
	Method of	assessment	writte Langu	n thesis lage of assessment:	German, English if agreed upon with the examiner					
	other prer	equisites	Regis	tration for assessme	ent: as specified.					

Subject-specific Ke	y Skills (15 ECT	S credits)								
Key Skills 1 (Comp Students must take COMg).	ulsory) (10 ECTS the following n	o credits) nodules: :	10-M-V	KM and 10-M-BAKC	as well as either (10	-M-PRG and 10-M-COM)	or (10-MF	PRGk and 10-M	I-COMg) or (10-M-PRG and 10-M-	
10-M-COMg-082-	Computationa	l Mathem	atics, a	atics, advanced						
m01	ECTS 4	Duratio	n	1 semester Method of grading (not) successfully completed Modul level undergraduate				undergraduate		
	Courses		Ü + V	+ V (no information on SWS (weekly contact hours) and course language available)						
	Method of ass	essment	projec the co Asses Langu	project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course) Assessment offered: once a year, summer semester Language of assessment: German, English if agreed upon with the examiner						
	other prerequi	sites	Admis unexc	ssion prerequisite t used absence).	to assessment: regul	ar attendance of exercise	es (attend	lance monitor	ed, a maximum of one incident of	
	Referred to in I	_PO I	§ 73 (1) 5. Mathematik A	ngewandte Mathema	tik				
10-M-PRGk-082-	Programming	course fo	r stude	nts of Mathematic	s and other subjects	simple			<u>.</u>	
m01	ECTS 2	Duratio	n	1 semester	Method of grading	(not) successfully com	pleted	Modul level	undergraduate	
	Courses	_	P (no	(no information on SWS (weekly contact hours) and course language available)						
	Method of ass	essment	project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course) Language of assessment: German, English if agreed upon with the examiner							
	other prerequisites		Admission prerequisite to assessment: regular attendance (attendance monitored, a maximum of one incident of unexcused absence).							
	Referred to in LPO I		§ 73 (1) 5. Mathematik Angewandte Mathematik							
10-M-VKM-082-	Preparatory Co	ourse Mat	hemat	iematics						
m01	ECTS 1	Duratio	n	1 semester	Method of grading	(not) successfully com	pleted	Modul level	undergraduate	
	Courses		V + Ü	(no information on	SWS (weekly contac	t hours) and course lang	guage ava	ilable)		
	Method of assessment		project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) Assessment offered: once a year, winter semester Language of assessment: German, English if agreed upon with the examiner							
	other prerequi	sites	Admis	ssion prerequisite I	to assessment: regul	ar attendance of courses	s (as spec	ified at the be	ginning of the course).	
10-M-PRG-082-	Programming	course fo	r stude	nts of Mathematic	s and other subjects					
m01	ECTS 3	Duratio	n	1 semester	Method of grading	(not) successfully com	pleted	Modul level	undergraduate	
	Courses		P (no	information on SW	S (weekly contact ho	urs) and course language	e availab	le)		
	Method of ass	essment	projeo Langu	ct in the form of pro lage of assessmen	ogramming exercises t: German, English if	(as specified at the begi agreed upon with the exa	inning of aminer	the course)		
	other prerequi	sites	Admis abser	ssion prerequisite (nce).	to assessment: regul	ar attendance (attendand	ce monito	pred, a maxim	um of one incident of unexcused	
	Referred to in LPO I		§73 (1) 5. Mathematik A	ngewandte Mathema	tik				

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	Bachelor's with 1 major Computational Mathematics (2009)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record 82 f24 - - H 2009	page 27 / 32

10-M-COM-082-	Comput	erorien	ted Math	ematio	CS						
m01	ECTS	3	Duration	1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses			V + Ü	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment project in the form of programming exercises (as specified at the beginning of the course) Assessment offered: once a year, summer semester										
	other pr	oroquic	itos	Admie	sion prerequisite to	accessment. regular	r attendance of exercises (atter	dance monitor	red a maximum of one incident of		
		erequis		unexc	used absence).	assessment. regula	allendance of exercises (aller				
	Referred	l to in L	PO I	§ 73 (1) 5. Mathematik An	gewandte Mathemat	ik				
10-M-BAKC-092-	Defense	of Bac	helor The	esis in	Computational Mat	hematics					
m01	ECTS	3	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses			A (no	information on SWS	6 (weekly contact hou	rs) and course language availa	ble)			
	Method	ofasse	essment	talk (a	approx. 15 minutes)	with subsequent dise	cussion (approx. 15 minutes)				
Key Skills 2 (Electiv	(ey Skills 2 (Elective) (10 ECTS credits)										
10-M-BSA-072-	Semina	r in Ana	lvsis	uy 1001	Chi the area of man						
mo1	FCTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	<u>,</u>	Duration	S (no	information on SWS	S (weekly contact hou	rs) and course language availa	hle)	undergraduate		
	Method of assessment			talk (approx. 60 minutes)							
Assessment offered: in the semester in which th				the course is offered							
	Language of assessment: German, English if agreed upon with the examiner										
	Referred	l to in L	PO I	§ 73 (1) 1. Mathematik An	alysis					
10-M-BSL-072-m01	Semina	r in Line	ear Algeb	ra							
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses			S (no	S (no information on SWS (weekly contact hours) and course language available)						
	Method	of asse	essment	talk (a	talk (approx. 60 minutes)						
				Assessment onered: In the semester in which the course is offered							
	Referred	l to in L	PO I	§ 73 (1) 2. Mathematik Lir	neare Algebra, Algebr	a und Elemente der Zahlentheo	orie			
10-M-BSF-072- Seminar in Algebra											
mo1	ECTS	5	Duratio	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	-		S (no	information on SWS	(weekly contact hou	rs) and course language availa	ble)			
	Method	ofasse	essment	talk (a	approx. 60 minutes)	. ,	ý <u> </u>				
				Asses	sment offered: in th	e semester in which	the course is offered				
				Langu	age of assessment:	German, English if a	greed upon with the examiner				
	Referred to in LPO I			§ 73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie							

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10-M-BSG-072-	Semina										
m01	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			S (no	S (no information on SWS (weekly contact hours) and course language available)						
	Method	ofasse	essment	talk (approx. 60 minutes)					
	Deferred to in LDO L			Asses	Assessment offered: in the semester in which the course is offered						
				Language of assessment: German, English if agreed upon with the examiner 8 zo (1) 4. Mathematik Geometric							
10-M-BSC-072-	Seminar	r in Con	nnlex An:	alvsis	1) 4. Mathematik 0						
m01	FCTS	5	Duration	1	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses	<u>,</u>	Duration	S (no	information on SW	S (weekly contact hours) and course language avail	ilable)				
	Method	ofasse	essment	talk (approx. 60 minutes)					
				Asses	ssment offered: in t	he semester in which the course is offered					
				Langu	uage of assessment	: German, English if agreed upon with the examine	er				
	Referred	l to in L	.PO I	§73 ((1) 1. Mathematik Ar	nalysis					
10-M-BSF-072-m01	Semina	r in Fun	ctional A	nalysi	lalysis						
	ECTS 5 Duration			n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			S (no information on SWS (weekly contact hours) and course language available)							
-	Method	ofasse	essment	talk (approx. 60 minutes)					
10-M-BSD-072-	Seminar in Discrete Mathematics										
	ECTS 5 Duration			1	1 semester Method of grading numerical grade Modul level undergraduate						
	Courses			S (no information on SWS (weekly contact hours) and course language available)							
	Method	ofasse	essment	talk (approx. 60 minutes)							
10-M-EDM-072-	Introduc	ction to	Discrete	Math	ematics						
	ECTS	5	Duration	1	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			V + U (no information on SWS (weekly contact hours) and course language available)							
	Method	of asse	essment	writte	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral						
				Langi	lage of assessment	: German. English if agreed upon with the examine	er	groups of 2, approx. 30 minutes)			
	other pr	erequis	sites	Certa	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respec-						
		•		tive d	etails at the beginn	ing of the course. Registration for the course will b	e considered a d	eclaration of will to seek admissi-			
				on to	on to assessment. If students have obtained the qualification for admission to assessment over the course of the semester,						
				sessr	nent in the current of	or in the subsequent semester. For assessment at	a later date, stud	ents will have to obtain the quali-			
				ficatio	cation for admission to assessment anew.						
	Referred to in LPO I			§73 (1) 2. Mathematik Li	neare Algebra, Algebra und Elemente der Zahlenth	ieorie				

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10-M-FAN-072-m01	Intro	Introduction to Functional Analysis									
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses				Ü (no information on SWS (weekly contact hours) and course language available)						
	Meth	od of ass	essment	writte exami Langu	itten examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral amination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) nguage of assessment: German, English if agreed upon with the examiner						
	other	prerequi	sites	Certai tive d on to the le sessm ficatio	rtain prerequisites must be met to quality for admission to assessment. The lecturer will inform students about the respec e details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admissi to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, e lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to as- ssment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the quali ation for admission to assessment anew.						
	Refer	red to in l	POI	§ 73 (1) 1. Mathematik An	alysis					
10-M-ORS-072-	Opera	ations Re	search								
m01	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Cours	ses		V + U (no information on SWS (weekly contact hours) and course language available)							
	Method of assessment			written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner							
other prerequisites				Certai tive d on to the le sessm ficatio	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respec- tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admissi- on to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to as- sessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the quali- fication for admission to assessment anew.						
	Refer	red to in l	PO I	§ 73 (1) 5. Mathematik An	gewandte Mathematik					
10-M-EZT-072-m01	Intro	duction to	Number	Theory	/						
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Cours	ses		V + Ü	(no information on S	SWS (weekly contact hours) and course language av	/ailable)				
	Meth	od of ass	essment	a) written examination (90 minutes; usually chosen) or b) oral examination of one candidate each (20 minutes) or c) oral ex- amination in groups (groups of 2, 30 minutes)							

10-M-NLD-072- Non-Linear Dynamics											
m01	ECTS	5	Duratior	l	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		V + Ü (no information on SWS (weekly contact hours) and course language available)							
	Method	of asse	essment	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)							
	other prerequisites			Certai tive de on to a the lee sessm ficatio	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respec- tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admissi- on to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to as- sessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the quali- fication for admission to assessment anew.						
	Referree	d to in L	POI	§ 73 (73 (1) 1. Mathematik Analysis						
10-M-ST2-082-m01	Stochas	stics 2	-								
	ECTS	5	Duratior	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		V + U	(no information on S	SWS (weekly contact	hours) and course language	available)			
	Method of assessment			written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner							
	other prerequisites			tive details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment at a later date.					nform students about the respec- eclaration of will to seek admissi- over the course of the semester, equisites will be admitted to as- ents will have to obtain the quali-		
	Referred to in LPO I			§ 73 (1) 3. Mathematik Stochastik							
10-M-RCS-082-	Reading	g Course	e Stochas	stics							
m01	ECTS	4	Duratior	۱	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		A (no	information on SWS	(weekly contact hou	rs) and course language ava	ilable)			
	Method of assessment a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)										
10-M-RCD-082-	Reading	g Course	e Discrete	e Math	ematics						
m01	ECTS	4	Duratior	۱	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		A (no	information on SWS	6 (weekly contact hou	rs) and course language ava	ilable)			
	Method	ofasse	essment	a) talk	x (approx. 30 minute	es) or b) written elabo	oration (approx. 5 to 10 page	s)			
10-M-RCF-082-m01	Reading	g Course	e Functio	nal Ana	alysis						
	ECTS	4	Duratior	l I	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		A (no	information on SWS	6 (weekly contact hou	rs) and course language ava	ilable)			
	Method	of asse	ssment	a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)							

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10-M-RCO-082-	Readir	ng Cours	e Operati	ions Re	esearch						
m01	ECTS	4	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	es	_	A (no	A (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment			a) tall	a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)						
10-M-RCY-082-	Readir	ng Cours	e Dynami	ical Sys	stems						
m01	ECTS	4 Duration		n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses			A (no information on SWS (weekly contact hours) and course language available)							
	Method of assessment			a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)							
10-M-RCP-082-	Readir	ng Cours	e Optimis	sation							
m01	ECTS	4	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		A (no information on SWS (weekly contact hours) and course language available)								
	Metho	d of asse	essment	a) tall	a) talk (approx. 30 minutes) or b) written elaboration (approx. 5 to 10 pages)						