

Annex SFB

Studienfachbeschreibung (subject description, SFB) for Module studies (Bachelor) Mathematics

Responsible: Faculty of Mathematics and Computer Science

Responsible: Institute of Mathematics

Examination regulations version: 2019

Examination regulations version: 2019

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

= lecture

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

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

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

= list of modules

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

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

modules in this SFB: ditable for bonus.

Information on Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the meassessment procedures: thod of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all

individual assessments.

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

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

15-May-2019 (2019-36) 27-Jun-2019 (2019-41) 14-Nov-2019 (2019-52) 22-Jan-2020 (2020-13) o6-May-2020 (2020-39) 22-Jul-2020 (2020-57) 17-Dec-2020 (2020-110) 10-Mar-2021 (2021-17) 09-Jun-2021 (2021-58) 22-Dec-2021 (2021-85) 05-Jul-2022 (2022-52) 31-Jan-2023 (2022-86) 15-Jun-2023 (2023-58) 13-Dec-2023 (2023-107)

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:

Ab	obreviation	Module title	odule title											
		ECTS Durat			on	(in semesters)	Method of grading		Module level					
		Courses			To be spe	cified in the form X	(y) with course type >	Cabbreviated as specified abo	ve and number of we	ekly contact hours y				
		Method of as	sessm	ent										

	fter successful etion of	if applicable
Other	orerequisites	if applicable
Partici on of p	pants and allocati- laces	if applicable
Additio	onal information	if applicable
Referre	ed to in LPO I	if applicable (examination regulations for teaching-degree programmes)

Summer Term 2019	o ECTS cre	edits)							
10-M-SEM2-152-	Supplemen	ntary Semina	Mathematics						
mo1	ECTS 4	Duration	1 semester	1 semester Method of grading (not) successfully completed Modul level underg					
	Courses	•	S (2)						
	Method of	assessment	talk (60 to 120 minutes)						
			Language of assessmen	t: German and/or English					
Winter Term 2019	(o ECTS cred	its)							
10-M-SEM2-152-	Supplemen	ntary Semina	Mathematics						
mo1	ECTS 4	Duratio	1 semester	Method of grading (not) successfully completed Modul level	undergraduate				
	Courses		S (2)						
	Method of	assessment	talk (60 to 120 minutes)						
			Language of assessmen	t: German and/or English					
Summer Term 202	o (o ECTS cre	edits)							
10-M-ANA1-152-	Analysis 1								
mo1	ECTS 8	Duratio		Method of grading (not) successfully completed Modul level	undergraduate				
	Courses	,	V (4) + Ü (2)						
	Method of	assessment		prox. 90 to 180 minutes) and written exercises (approx. 12 exercise s	sheets with approx. 4 exercises				
			each)	A. Carrean and law English					
10-M-VHB1-152-	E Learning	and Dlandad		it: German and/or English					
10-М-VПВ1-152- mo1	E-Learning and Blended Learning Mathematics 1 ECTS 2 Duration 1 semester Method of grading (not) successfully completed Modul level undergraduate								
		Duration	Ü (2)	Method of grading (not) successfully completed Modul level	undergraduate				
	Courses			mostly Virtuelle Hochschule Bayern (vhb)					
	Method of	assessment	project (web-based, 15 to 20 hours)						
			Assessment offered: Once a year, winter semester						
10-M-VHB2-152-			Learning Mathematics 2						
mo1	ECTS 2	Duratio		Method of grading (not) successfully completed Modul level	undergraduate				
	Courses		Ü(2)						
	20 11 1 6			mostly Virtuelle Hochschule Bayern (vhb)	_				
	Method of	assessment	project (web-based, 15 to 20 hours)						
10-M-LNA1-152-	Linear Alge	 ehra 1	Assessment offered: Once a year, summer semester						
mo1	ECTS 8	Duration	1 semester Method of grading (not) successfully completed Modul level undergraduate						
	Courses	2 0.00.0	V (4) + Ü (2)	method of grading (new oddesserially completed modal teres					
		assessment	• • • • • • • • • • • • • • • • • • • •	prox. 90 to 180 minutes) and written exercises (approx. 12 exercises	sheets with approx. 4 exercises				
			each)						
			Language of assessmen	t: German and/or English					

Winter Term 2020	(o ECTS credits)										
10-M-ANA1-152-	Analysis 1										
mo1	ECTS 8 Duratio	n 1 semester Method of grading (not) successfully completed Modul level undergraduate									
	Courses	$V(4) + \ddot{U}(2)$									
	Method of assessment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises									
		each) Language of assessment: German and/or English									
10-M-ASM-152-	Reasoning and Writing										
mo1	ECTS 2 Duratio										
	Courses	$V(1) + \ddot{U}(1)$									
	Method of assessment	project (10 to 20 pages)									
	Method of assessment	Language of assessment: German and/or English									
10-M-VHB1-152-	E-Learning and Blended	Learning Mathematics 1									
mo1	ECTS 2 Duratio	n 1 semester Method of grading (not) successfully completed Modul level undergraduate									
	Courses	Ü (2)									
		ourse type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)									
	Method of assessment	project (web-based, 15 to 20 hours)									
	E I I DI I I	Assessment offered: Once a year, winter semester									
10-M-VHB2-152- mo1		Learning Mathematics 2									
11101		n 1 semester Method of grading (not) successfully completed Modul level undergraduate Ü (2)									
	Courses	Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)									
	Method of assessment	project (web-based, 15 to 20 hours)									
		Assessment offered: Once a year, summer semester									
10-M-GBM-152-	Basic Notions and Methods of Mathematical Reasoning										
mo1	ECTS 2 Duratio										
	Courses	$V(1) + \ddot{U}(1)$									
	Method of assessment	project (10 to 15 pages)									
	A 1 1''. 11 C	Language of assessment: German and/or English									
	Additional Information	Additional information on module duration: block taught prior to the beginning of the lecture period.									
	Referred to in LPO I	§ 22 Nr. 1 h) § 22 Nr. 2 f)									
10-M-LNA1-152-	Linear Algebra 1										
mo1	ECTS 8 Duratio	n 1 semester Method of grading (not) successfully completed Modul level undergraduate									
	Courses	V (4) + Ü (2)									
	Method of assessment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises									
		each)									
		Language of assessment: German and/or English									

Summer Term 202	1 (o ECTS credit	ts)								
10-M-ANA1-152-	Analysis 1									
mo1	ECTS 8	Duratio		Method of grading (not) successfully completed Modul level undergraduate						
	Courses		V (4) + Ü (2)							
	Method of ass	sessment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises							
			each) Language of assessment: German and/or English							
10-M-ASM-152-	Reasoning and Writing in Mathematics									
mo1	ECTS 2	Duratio		Method of grading (not) successfully completed Modul level undergraduate						
	Courses		V (1) + Ü (1)							
	Method of as:	sessment	project (10 to 20 pages	es) nent: German and/or English						
10-M-VHB1-152-	F-Learning an	d Blended	Learning Mathematics							
mo1	ECTS 2	Duratio		Method of grading (not) successfully completed Modul level undergraduate						
	Courses	1 - 31 - 31	Ü (2)	meaning of Grand (may continue of management)						
			ourse type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of ass	sessment	project (web-based, 15	15 to 20 hours) Once a year, winter semester						
10-M-VHB2-152-	E-Learning an	nd Blended	Learning Mathematics	, , ,						
mo1	ECTS 2	Duratio		Method of grading (not) successfully completed Modul level undergraduate						
	Courses		Ü (2) Course type: eLearning	ng, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of ass	sessment	project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester							
10-M-GBM-152-	Basic Notions	and Meth	ods of Mathematical Reasoning							
mo1	ECTS 2	Duratio	n 1 semester	Method of grading (not) successfully completed Modul level undergraduate						
	Courses		V (1) + Ü (1)							
	Method of ass	sessment		es) nent: German and/or English						
	Additional Inf	ormation	Additional information on module duration: block taught prior to the beginning of the lecture period.							
	Referred to in	LPO I	§ 22 Nr. 1 h) § 22 Nr. 2 f)							
10-M-LNA1-152-	Linear Algebr	a 1								
mo1	ECTS 8	Duratio	n 1 semester	Method of grading (not) successfully completed Modul level undergraduate						
	Courses		V (4) + Ü (2)							
	Method of as	sessment	written examination (a each)	(approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises						
				nent: German and/or English						

10-M-SEM2-152-	Supplem	entary	Seminar	Math	ematics								
mo1	ECTS Z	4	Duration	1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Courses			S (2)	5 (2)								
	Method	of asses	sment		talk (60 to 120 minutes)								
				Langu	age of assessment:	German and/or Engl	ish						
Winter Term 2021 (o ECTS cro	edits)											
10-M-ANA1-152-	Analysis 1												
mo1	ECTS 8	3	Duratior	1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Courses			V (4) -	+ Ü (2)								
	Method	of asses	sment	each)	. , ,	ox. 90 to 180 minute German and/or Engl		ox. 12 exercise s	sheets with approx. 4 exercises				
10-M-ASM-152-	Reasonii	ng and V	Writing i			- Cerman ana/or Engi	1311						
mo1	ECTS 2		Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Courses			V (1) +	$(1) + \ddot{U}(1)$								
	Method of assessment				project (10 to 20 pages) Language of assessment: German and/or English								
10-M-FAN-152-m01	Introduction to Functional Analysis												
	ECTS 9	9	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Courses			V (4) -	+ Ü (2)								
	Method of assessment			a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus									
	Referred	to in LP	01	§ 22 l	Nr. 3 f)								
10-M-FANP-152-	Introduc	tion to F	unction	onal Analysis for Mathematical Physics									
mo1	ECTS 1	10	Duratior	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Courses				+ Ü (2)								
	Method of assessment			a) oral examination of one candidate each (15 to 30 minutes) or b) oral examination in groups of 2 candidates (10 to 15 minutes each) Assessment will have reference to a topic in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-field Gesamtüberblick Mathematische Methoden (Overview Mathematical Methods) or in module group Ergänzung Mathematik (Supplementary Topics in Mathematics). Language of assessment: German and/or English creditable for bonus									

10-M-ZTH-152-m01	Introdu	iction t	o Number	Theory	neory								
	ECTS	9	Duration	ı	1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate				
	Course	S		V (4) -	+ Ü (2)			•					
	Method	Method of assessment		nutes Langu	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus								
10-M-ZTHP-152-	Introdu	ntroduction to Number Theory for Mathematical Physics											
mo1	ECTS	10	Duration	ı	1 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Course	S		V (4) -	+ Ü (2)	•			•				
	Method	d of ass	sessment	nutes Langu) or c) oral examina	pprox. 90 to 180 min tion in groups (group : German and/or Engl	utes, usually chosen) or b) or s of 2, 10 to 15 minutes per colish	ral examination o andidate)	f one candidate each	1 (15 to 30 mi-			
10-M-VHB1-152-	E-Learn	ning an	d Blended	Learn	ing Mathematics 1								
mo1	ECTS	2	Duration	1	1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate				
	Courses			Ü (2) Cours									
	Method	d of ass	sessment		ct (web-based, 15 to ssment offered: Onc	o 20 hours) ce a year, winter seme	ester						
10-M-VHB2-152-	E-Learn	ning an	d Blended	Learn	ing Mathematics 2								
mo1	ECTS	2	Duration	ı	1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate				
	Courses			Ü (2) Cours	e type: eLearning, r	mostly Virtuelle Hochs	schule Bayern (vhb)						
	Method of assessment		project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester										
10-M-SEM2-152-	Supple	mentai	ry Semina	r Math	Mathematics								
mo1	ECTS	4	Duration	า	1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate				
	Course	S		S (2)									
	Method	Method of assessment			talk (60 to 120 minutes) Language of assessment: German and/or English								
10-M-GBM-152-	Basic N	lotions	and Meth	ods of	Mathematical Reas	soning							
mo1	ECTS	2	Duration	ı	1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate				
	Course	S	•	V (1) +	V (1) + Ü (1)								
	Method	d of ass	sessment		project (10 to 15 pages) Language of assessment: German and/or English								
	Additio	nal Info	ormation	Addit	ional information o	n module duration: bl	ock taught prior to the begin	ning of the lectur	re period.				
	Referre	d to in	LPO I		l Nr. 1 h) l Nr. 2 f)								
Mathematics (2019)					1	"	JMU Würzburg • generated 24-Feb	-2024 • exam. reg. data	record MB 105 - - H 2019	page 8 / 16			

10-M-LNA1-152-	Linear A	Algebra	1 1									
mo1	ECTS	8	Duratio	า	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Course	S		V (4)	+ Ü (2)							
	Method	of ass	essment	writte	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises							
				each)		:: German and/or English						
10-M-SEM-152-	Somina	r Math	ematics	Lange	age of assessifierit	.: German and/or English		-				
mo1		5	Duration	1	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course		Duration	S (2)	1 Semester	Method of grading numerical grade	Modulitevel	undergraduate				
			essment		60 to 120 minutes)							
	Method	2 01 433	essinent			: German and/or English						
	Referre	d to in I	LPO I	§ 22 l	l Nr. 3 f)		,					
Summer Term 202	2 (o ECTS	3 137										
10-M-ANA1-152-	Analysi	is 1										
mo1	ECTS 8 Duration			า	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Course	S	-1	V (4)	' (4) + Ü (2)							
	Method	d of ass	essment	writte	n examination (app	prox. 90 to 180 minutes) and written exercises (appr	ox. 12 exercise s	sheets with approx. 4 exercises				
				each)		Carrage and law Fundials						
10-M-ASM-152-	Pancan	ing and	d Writing			: German and/or English						
mo1	\vdash	2	Duration		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Course				1 Semester - Ü (1)	Method of grading (not) successfully completed	Modulitevel	undergraduate				
			essment		ct (10 to 20 pages)			_				
	Method	ı 01 a33	CSSIIICIII	Language of assessment: German and/or English								
10-M-VHB1-152-	E-Learning and Blended Learning Mathematics 1											
mo1	ECTS	2	Duratio	ı	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Course	S		Ü (2)								
				Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)								
	Method	d of ass	essment		project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester							
10-M-VHB2-152-	E-Loarn	ing and	d Blandad		ing Mathematics 2	e a year, writter semester		-				
mo1	$\overline{}$	2	Duration		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Course		Daration	Ü (2)	Tacinester	method of glading (not) successibility completed	Modulitevel	undergraduate				
	Course	•			e type: eLearning, i	mostly Virtuelle Hochschule Bayern (vhb)						
	Method	d of ass	essment		ct (web-based, 15 to							
				Asses	sment offered: Onc	ce a year, summer semester						

10-M-GBM-152-	Basic Notions and Methods of Mathematical Reasoning											
mo1	ECTS	2	Duration	1 semes	ter	Method of grading	(not) successfully co	ompleted	Modul level	undergraduate		
	Course	s	•	V (1) + Ü (1)					•	•		
	Method of assessment			project (10 to 15 pages)								
						German and/or Eng						
			rmation		rmation on	module duration: b	lock taught prior to th	ne beginnir	ng of the lectur	e period.		
	Referre	d to in l	_PO I	§ 22 Nr. 1 h) § 22 Nr. 2 f)								
10-M-LNA1-152-	Linear A	Algebra	1									
mo1	ECTS	8	Duration	1 semes	ter	Method of grading	(not) successfully co	ompleted	Modul level	undergraduate		
	Course	S		V (4) + Ü (2)					,			
	Method	d of ass	essment	each)		rox. 90 to 180 minut German and/or Eng		ses (appro	ox. 12 exercise s	sheets with approx. 4 exercises		
Winter Term 2022	(o ECTS o	credits)		Language of as	ssessment.	German and/or Life	3(13)1					
10-M-ANA1-152-	Analysi											
mo1	_	8	Duration	1 semes	ter	Method of grading	(not) successfully co	ompleted	Modul level	undergraduate		
	Courses			V (4) + Ü (2)		, 5	,					
	Method of assessment			each)		rox. 90 to 180 minut German and/or Eng		ses (appro	ox. 12 exercise s	sheets with approx. 4 exercises		
10-M-ASM-152-	Reason	ing and	Writing i	n Mathematics								
mo1	ECTS	2	Duration	1 semes	ter	Method of grading	(not) successfully co	ompleted	Modul level	undergraduate		
	Course	S	•	V (1) + Ü (1)		•	•		•	•		
	Method of assessment		essment	project (10 to 20 pages) Language of assessment: German and/or English								
10-M-VHB1-152-	E-Learn	ing and	Blended	Learning Mathematics 1								
mo1	ECTS	2	Duration	ı 1 semes	ter	Method of grading	(not) successfully co	ompleted	Modul level	undergraduate		
	Course	S	•	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)								
	Method	d of ass	essment	project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester								
10-M-VHB2-152-	E-Learn	ing and	Blended	Learning Math	ematics 2							
mo1	ECTS	2	Duration	1 semes	ter	Method of grading	(not) successfully co	ompleted	Modul level	undergraduate		
	Course	S		Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)								
	Method	d of ass	essment	project (web-b Assessment of		20 hours) e a year, summer se	mester					

10-M-SEM2-152-												
mo1	ECTS 4	Duration	1 19	semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses	-	S (2)									
	Method of asse	essment		to 120 minutes) e of assessment:	German and/or English							
10-M-GBM-152-	Basic Notions a	and Meth	ods of Ma	ds of Mathematical Reasoning								
mo1	ECTS 2	Duration	1 19	semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		V (1) + Ü	(1)		-						
	Method of asse	essment			German and/or English							
	Additional Info	rmation	Addition	al information on	module duration: block taught prior to the beginn	ing of the lecture	period.					
	Referred to in L	PO I	§ 22 Nr § 22 Nr									
10-M-LNA1-152-	Linear Algebra	1										
mo1	ECTS 8	Duration	1 19	semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		V (4) + Ü	(2)								
	Method of asse	essment		examination (appr	ox. 90 to 180 minutes) and written exercises (appr	ox. 12 exercise s	heets with approx. 4 exercises					
			each)	o of accocement.	Gorman and for English							
10-M-SEM-152-	Language of assessment: German and/or English Seminar Mathematics											
mo1	ECTS 5	Duration	1 10	semester	Method of grading numerical grade	Modul level	undergraduate					
	Courses	Daration	S (2)	<u> </u>	method of grading mamerical grade	modul tevel	and organization					
	Method of asse	essment		talk (60 to 120 minutes)								
					German and/or English							
	Referred to in L	.PO I	§ 22 II Nr	r. 3 f)								
Summer Term 202	3 (o ECTS credits	s)										
10-M-ANA1-152-	Analysis 1											
mo1	ECTS 8	Duration	1 19	semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		V (4) + Ü	• •								
	Method of asse	essment		examination (appr	ox. 90 to 180 minutes) and written exercises (appr	ox. 12 exercise s	heets with approx. 4 exercises					
			,	each) Language of assessment: German and/or English								
10-M-ANA2-152-	Analysis 2		Language	c or assessment.	German and/or English							
mo1		Duration	1 10	semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses	Buration	V (4) + Ü		memod of grading (not) successionly completed	moduliterei	Turide i Si dudace					
		essment		written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises								
			each)									
			Language	e of assessment:	German and/or English							
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Reasoning and	Writing	in Mathematics		'					
ECTS 2	Duration	n 1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
Courses		V (1) + Ü (1)							
Method of asso	essment								
	*			1					
	Duration	,	Method of grading (not) successfully completed	Modul level	undergraduate				
		* * * * * * * * * * * * * * * * * * * *							
Method of asso	essment	project (10 to 15 pages) Language of assessmen	t: German and/or English						
Additional Info	rmation	Additional information of	on module duration: block taught prior to the beginn	ing of the lectur	e period.				
Referred to in L	PO I	§ 22 Nr. 1 h) § 22 Nr. 2 f)							
Linear Algebra	1								
ECTS 8	Duratio	n 1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
Courses		V (4) + Ü (2)							
Method of asso	essment		prox. 90 to 180 minutes) and written exercises (app	rox. 12 exercise s	sheets with approx. 4 exercises				
			t. Carman and lar English						
		n 1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Duration		Method of glading (not) successfully completed	Modul level	undergraduate				
	eccment		written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises						
Method of assi	c 3 3 i i C i i C	each)							
		Language of assessment: German and/or English							
E-Learning and	Blended	Learning Mathematics 1							
ECTS 2	Duratio		Method of grading (not) successfully completed	Modul level	undergraduate				
Courses									
AA () C				,					
Method of asso	essment								
F-I earning and	l Blended		·						
				Modul level	undergraduate				
	Baration		method of glading (not) successfully completed	Modulitevel	undergraduate				
Courses			mostly Virtuelle Hochschule Bayern (vhb)						
Method of asso	essment	project (web-based, 15 t							
	ECTS 2 Courses Method of asso ECTS 2 Courses Method of asso Additional Info Referred to in L Linear Algebra ECTS 8 Courses Method of asso Linear Algebra ECTS 8 Courses Method of asso E-Learning and ECTS 2 Courses Method of asso E-Learning and ECTS 2 Courses Method of asso E-Learning and ECTS 2 Courses	ECTS 2 Duratio Courses Method of assessment Basic Notions and Method ECTS 2 Duratio Courses Method of assessment Additional Information Referred to in LPO I Linear Algebra 1 ECTS 8 Duratio Courses Method of assessment Linear Algebra 2 ECTS 8 Duratio Courses Method of assessment E-Learning and Blended ECTS 2 Duratio Courses Method of assessment E-Learning and Blended ECTS 2 Duratio Courses Method of assessment	Courses V (1) + Ü (1) Method of assessment project (10 to 20 pages) Language of assessmene Basic Notions and Methods of Mathematical Real ECTS 2 Duration 1 semester Courses V (1) + Ü (1) Method of assessment project (10 to 15 pages) Language of assessmenenenenenenenenenenenenenenenenen	ECTS 2 Duration 1 semester Method of grading (not) successfully completed	ECTS 2 Duration 1 semester Method of grading (not) successfully completed Modul level				

Winter Term 2022	(o ECTS credit	ts)								
10-M-ANA1-152-	Analysis 1									
mo1	ECTS 8	Duratio	1	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Courses		V (4) -	+ Ü (2)	·					
	Method of a	ssessment		ritten examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises						
			each)	ach) anguage of assessment: German and/or English						
10 M ANAO 150	Analysis		Langu	lage of assessment	: German and/or English					
10-M-ANA2-152- mo1	Analysis 2 ECTS 8	Duratio		4 comostor	Method of grading (not) successfully completed	Modul level	Lundorgraduato			
		Duratio	V (4) -	1 semester	Metriod of grading (not) successfully completed	Modul level	undergraduate			
	Courses Method of a	ccaccmont	- ' '		rox. 90 to 180 minutes) and written exercises (appr	ov 42 oversise (shoots with approx 4 aversions			
	Method of a	SSESSIIIEIIL	each)	п ехапппацоп (арр	iox. 90 to 180 illiliutes) and written exercises (appr	ux. 12 exercise s	sneets with approx. 4 exercises			
			Langu	age of assessment	: German and/or English					
10-M-ASM-152-	Reasoning a	and Writing	in Matl	nematics						
mo1	ECTS 2	Duratio		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Courses			/ (1) + Ü (1)						
	Method of a	ssessment		project (10 to 20 pages) Language of assessment: German and/or English						
					: German and/or English					
10-M-VHB1-152- mo1				ng Mathematics 1		Tag 1 11 1				
11101	ECTS 2	Duratio	1 Ü (2)	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Courses		Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of a	ssessment	project (web-based, 15 to 20 hours)							
			Assessment offered: Once a year, winter semester							
10-M-VHB2-152-				Learning Mathematics 2						
mo1	ECTS 2	Duratio		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Courses		Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of a	ssessment	project (web-based, 15 to 20 hours)							
				Assessment offered: Once a year, summer semester						
10-M-DGL-152-m01	Ordinary Dif	fferential Eq	uation	5						
	ECTS 9	Duratio	n	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Courses		V (4) -	+ Ü (2)						
	Method of a	ssessment	nutes Langu	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus						

10-M-GBM-152-	Basic Notions and Methods of Mathematical Reasoning									
mo1	ECTS 2 Duration			า	1 semester	Method of grading (not)	successfully completed	Modul level	undergraduate	
	Courses			V (1) +	- Ü (1)					
				project (10 to 15 pages)						
				Language of assessment: German and/or English						
				Additional information on module duration: block taught prior to the beginning of the lecture period.						
	Referred to in LPO I			§ 22 Nr. 1 h) § 22 Nr. 2 f)						
10-M-LNA1-152-	Linear Algebra 1									
mo1	ECTS	8	Duration	1	1 semester	Method of grading (not)	successfully completed	Modul level	undergraduate	
	Courses			V (4) -	+ Ü (2)			•		
	Method of assessment			written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises						
				each) Language of assessment: German and/or English						
10-M-LNA2-152-	Linear Algebra 2									
mo1			Duration	1	1 semester	Method of grading (not)	successfully completed	Modul level	undergraduate	
	Courses			V (4) -	+ Ü (2)			•		
	Method of assessment			written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises each) Language of assessment: German and/or English						
10-M-VAN-152-m01	Advanced Analysis									
	ECTS 7 Duratio		1	1 semester	Method of grading nume	erical grade	Modul level	undergraduate		
	Courses			V (4) -	+ Ü (2)					
	Method of assessment			a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus						
Summer Term 202	4 (o ECTS	credits)							
10-M-ANA1-152-	Analysis	1								
mo1	ECTS 8 Duration			1	1 semester	Method of grading (not)	$successfully\ completed$	Modul level	undergraduate	
	Courses			V (4) + Ü (2)						
	Method of assessment			written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises each) Language of assessment: German and/or English						

10-M-ANA2-152-	Analysis 2									
mo1	ECTS 8 Duratio		1 semester	Method of grading (not) successfully completed Modul level undergraduate						
	Courses		V (4) + Ü (2)							
	Method of as	ssessment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises							
			each)							
12 14 15 14 15 1	Decemina		Language of assessment: German and/or English							
10-M-ASM-152- mo1			n Mathematics							
mor	ECTS 2 Duratio			Method of grading (not) successfully completed Modul level undergraduate						
	Courses Method of assessment		V (1) + Ü (1)							
			project (10 to 20 pages) Language of assessment: German and/or English							
10-M-VHB1-152-	E-Learning a	nd Blended	Learning Mathema	atics 1						
mo1	ECTS 2 Duratio		1 semester	Method of grading (not) successfully completed Modul level undergraduate						
	Courses		Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of assessment		project (web-based, 15 to 20 hours)							
10-M-VHB2-152-	Assessment offered: Once a year, winter semester E-Learning and Blended Learning Mathematics 2									
10-M-V 10-M-V		Duration								
		Duratio	1 semester	Method of grading (not) successfully completed Modul level undergraduate						
	Courses		Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of assessment		project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester							
10-M-GBM-152-	Basic Notions and Methods of Mathematical Reasoning									
mo1	ECTS 2 Duratio		1 semester	Method of grading (not) successfully completed Modul level undergraduate						
	Courses		$V(1) + \ddot{U}(1)$							
	Method of as	ssessment	project (10 to 15 pages) Language of assessment: German and/or English							
	Additional In	formation	Additional information on module duration: block taught prior to the beginning of the lecture period.							
	Referred to in		§ 22 Nr. 1 h)							
			§ 22 Nr. 2 f)							
10-M-LNA1-152-	Linear Algebra 1									
mo1	ECTS 8	Duratio	1 semester	Method of grading (not) successfully completed Modul level undergraduate						
	Courses		$V(4) + \ddot{U}(2)$							
	Method of as	ssessment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises each)							
			Language of assessment: German and/or English							

10-M-LNA2-152-	Linear A	Algebra	2							
mo1	ECTS	8	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses			V (4) + Ü (2)						
				writte each)	n examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises					
				Langu	anguage of assessment: German and/or English					