

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

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

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

individual assessments.

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

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) 07-Aug-2024 (2024-82) 22-Jan-2025 (2025-1)

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:

Module title

Abbreviation

/ IDDI CVIACIOII	module title		
Mathematics (2019)		JMU Würzburg • generated 19-Apr-2025 • exam. reg. data record MB 105 - - H 2019	page 2 / 18

ECTS	Du	ration	(in semesters)	Method of grading		Module level	
Courses		To be spe	ecified in the form X	(y) with course type X	abbreviated as specified abo	ove and number of we	ekly contact hours y
Method of a	ssessment		-				
Only after successful completion of		if applica	able				
Other prered	quisites	if applica	able				
•	Participants and allocation of places		able				
Additional information		if applica	able				
Referred to i	Referred to in LPO I		able (examination re	gulations for teaching	-degree programmes)		

Summer Term 2019)									
10-M-SEM2-152-	Supplementar	y Semina	Mathematics							
mo1	ECTS 4	Duratio	1 semester	Method of grading (not) successfully completed Modul level	undergraduate					
	Courses	•	S (2)	· · · · · · · · · · · · · · · · · · ·						
	Method of ass	essment	talk (60 to 120 minute:							
			Language of assessme	ent: German and/or English						
Winter Term 2019										
10-M-SEM2-152-	Supplementary Seminar Mathematics									
mo1	ECTS 4	Duratio		Method of grading (not) successfully completed Modul level	undergraduate					
	Courses		S (2)							
	Method of ass	essment	talk (60 to 120 minutes							
			Language of assessme	ent: German and/or English						
Summer Term 202										
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	essment		pprox. 90 to 180 minutes) and written exercises (approx. 12 exercise sh	eets with approx. 4 exercises					
			each)	ent: German and/or English						
10-M-VHB1-152-	F-I earning and	d Blandad	Learning Mathematics							
mo1	ECTS 2	Duratio		.	undergraduate					
	Courses	Daratio	Ü (2)	method of glading (not) successfully completed modulitevel	andergraduate					
	Courses			g, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of ass	essment	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)							
	AA .1			g, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of ass	essment	project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester							
10-M-LNA1-152-	Linear Algebra	1 1	7133633ment onered. O	nice a year, summer semester						
mo1	ECTS 8	Duratio	1 semester	Method of grading (not) successfully completed Modul level	undergraduate					
	Courses		V (4) + Ü (2)							
	Method of ass	essment		pprox. 90 to 180 minutes) and written exercises (approx. 12 exercise sh	eets with approx. 4 exercises					
		220	each)							
			Language of assessme	ent: German and/or English						

Winter Term 2020											
10-M-ANA1-152-	Analysis 1										
mo1	ECTS 8	Duratio		Method of grading (n	ot) 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)	nt: German and/or English							
10-M-ASM-152-	Reasoning and Writing in Mathematics										
mo1	ECTS 2	Duratio		Method of grading (n	ot) successfully completed	Modul level	undergraduate				
	Courses		V (1) + Ü (1)	1 0 01	, ,		, ,				
	Method of as	ssessment	project (10 to 20 pages								
				nt: German and/or English							
10-M-VHB1-152-		_	Learning Mathematics								
mo1	ECTS 2	Duratio		Method of grading (n	ot) successfully completed	Modul level	undergraduate				
	Courses		Ü (2)	mostly Virtualla Hachsch	ula Rayarn (vhh)						
	Mothod of as	coccmont	Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb) project (web-based, 15 to 20 hours)								
	Method of as	336331116111		nce a year, winter semeste	r						
10-M-VHB2-152-	E-Learning and Blended Learning Mathematics 2										
mo1	ECTS 2	Duratio	n 1 semester	Method of grading (n	ot) successfully completed	Modul level	undergraduate				
	Courses		Ü (2) Course type: eLearning	, mostly Virtuelle Hochsch	ule Bavern (vhb)	-					
	Method of as	ssessment	project (web-based, 15 to 20 hours)								
10 M CDM 150	Dagie Notion	a and Math	Assessment offered: Once a year, summer semester ods of Mathematical Reasoning								
10-M-GBM-152- mo1	ECTS 2	Duratio			ot) successfully completed	Modul level	undergraduate				
	Courses	Duratio	1 semester V (1) + Ü (1)	Method of grading (ii	ot) successibility completed	Modul level	undergraduate				
	Method of as	caccment					_				
	Method of as	330331110111	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	n LPO I	§ 22 Nr. 1 h) § 22 Nr. 2 f)								
10-M-LNA1-152-	Linear Algeb	ra 1	, ,			1					
mo1	ECTS 8	Duratio	n 1 semester	Method of grading (n	ot) successfully completed	Modul level	undergraduate				
	Courses		V (4) + Ü (2)								
	Method of as	ssessment		prox. 90 to 180 minutes)	and written exercises (appro	ox. 12 exercise s	sheets with approx. 4 exercises				
			each)	at. Corman and for English							
			Language of assessme	nt: German and/or English							

Summer Term 202	21								
10-M-ANA1-152-	Analysis 1								
mo1	ECTS 8	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (4) + Ü (2)						
	Method of asse	essment	` ' '	prox. 90 to 180 minute	s) and written exercises (appr	ox. 12 exercise s	sheets with approx. 4 exercises		
			each) Language of assessment: German and/or English						
10-M-ASM-152-	Reasoning and	-							
mo1	ECTS 2	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	Baration	V (1) + Ü (1)	method of glading	(not) successibility completed	Modulitevel	andergraduate		
	Method of asse	essment	project (10 to 20 pages)						
			Language of assessmen		ish				
10-M-VHB1-152-	E-Learning and	Blended	Learning Mathematics 1						
mo1	ECTS 2	Duratio		Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2)						
	AA (1 C		Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb) project (web-based, 15 to 20 hours)						
	Method of asse	essment	Assessment offered: On		ster				
10-M-VHB2-152-	E-Learning and Blended Learning Mathematics 2								
mo1	ECTS 2 Duratio				(not) successfully completed	Modul level	undergraduate		
	Courses	1	Ü (2)	, 5	, , , , , ,	ļ	-		
			Course type: eLearning,		chule Bayern (vhb)				
	Method of asse	essment	project (web-based, 15 to 20 hours)						
12 M CDM 172	Dania Nationa		Assessment offered: Once a year, summer semester ods of Mathematical Reasoning						
10-M-GBM-152- mo1		1			(not) successfully completed	Madulland	Lundavaradusta		
11101	ECTS 2	Duration	1 semester V (1) + Ü (1)	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses Method of asse	occmont					_		
	Method of asse	essinent	project (10 to 15 pages) Language of assessment: German and/or English						
	Additional Info	rmation	Additional information on module duration: block taught prior to the beginning of the lecture period.						
	Referred to in L	PO I	§ 22 II Nr. 1 h)						
	,		§ 22 II Nr. 2 f)						
10-M-LNA1-152-	Linear Algebra								
mo1	ECTS 8	Duratio		Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (4) + Ü (2)				_		
	Method of asse	essment	written examination (ap	prox. 90 to 180 minute	s) and written exercises (appro	ox. 12 exercise s	sheets with approx. 4 exercises		
			Language of assessmen	t: German and/or Engl	ish				
<u> </u>			00						

10-M-SEM2-152-	Supplementary	/ Seminar	r Math	ematics						
mo1	ECTS 4	Duration	n .	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		S (2)							
	Method of asse	essment		talk (60 to 120 minutes)						
			Langu	Language of assessment: German and/or English						
Winter Term 2021										
10-M-ANA1-152-	Analysis 1									
mo1	ECTS 8	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (4) +							
	Method of asse	essment		n examination (appr	ox. 90 to 180 minute	s) and written exercises (appro	ox. 12 exercise s	sheets with approx. 4 exercises		
				each) Language of assessment: German and/or English						
10-M-ASM-152-	Reasoning and	Writing i			German and/or Engi	1311				
mo1	ECTS 2	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	Daration	V (1) +		memod or grading	(not) successivity completed	modul tevel	andergradate		
		essment		ct (10 to 20 pages)						
					German and/or Engl	ish				
10-M-FAN-152-m01	Introduction to	Function	al Ana	lysis						
	ECTS 9	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (4) -							
	Method of asse	essment	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						
				able for bonus						
	Referred to in L			l Nr. 3 f)						
10-M-FANP-152-	Introduction to	Function	al Ana	lysis for Mathematic	 					
mo1	ECTS 10	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses		V (4) +							
	Method of asse	essment			e candidate each (15					
						(10 to 15 minutes each)	on with the exar	miner. Fach tonic may only be se-		
			lected	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).						
				age of assessment: able for bonus	German and/or Engl	ish				
			creuit	מטוכ וטו טטוועט						

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10-M-ZTH-152-m01		o Number	Theory	•							
	ECTS 9	Duration	n	1 semester	Method of grading (no	ot) successfully completed	Modul level	undergraduate			
	Courses		V (4) -	V (4) + Ü (2)							
	Method of ass	essment	b) ora c) ora 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-	Introduction to	o Number	Theory	for Mathematical P	Physics						
mo1	ECTS 10	Duratio	n	1 semester	Method of grading nu	merical grade	Modul level	undergraduate			
	Courses		V (4) -	- + Ü (2)	<u>. </u>						
			b) ora c) ora Langu credit	n) written examination (approx. 90 to 180 minutes, usually chosen) or n) oral examination of one candidate each (15 to 30 minutes) or n) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) n.anguage of assessment: German and/or English treditable for bonus							
10-M-VHB1-152-	E-Learning and Blended Learning Mathematics 1										
mo1	ECTS 2 Duration		n	1 semester	Method of grading (no	ot) successfully completed	Modul level	undergraduate			
			Ü (2) Cours	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of ass	essment		project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester							
10-M-VHB2-152-	E-Learning and Blended Learning Mathematics 2										
mo1	ECTS 2	Duratio	n	1 semester	Method of grading (no	ot) successfully completed	Modul level	undergraduate			
	Courses	•	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)								
	Method of ass	essment		project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester							
10-M-SEM2-152-	Supplementar	y Semina	r Math	,							
mo1	ECTS 4 Duratio		n	1 semester	Method of grading (no	ot) successfully completed	Modul level	undergraduate			
	Courses		S (2)	-	·						
	Method of ass	essment		talk (60 to 120 minutes) Language of assessment: German and/or English							

10-M-GBM-152-	Basic Notion	s and Meth	nods of Mathematical Re	easoning						
mo1	ECTS 2	Duratio	n 1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Courses		V (1) + Ü (1)		`					
	Method of as	sessment	11 , \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \							
				ent: German and/or English						
	Additional In			Additional information on module duration: block taught prior to the beginning of the lecture period.						
	Referred to in	1 LPO I	§ 22 Nr. 1 h)							
10-M-LNA1-152-	Linear Algeb	ro 4	§ 22 II Nr. 2 f)		-1-					
mo1	ECTS 8	Duratio	n 1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Courses	Duratio	V (4) + Ü (2)	Method of grading (not) successfully completed	Modul level	undergraduate				
	Method of as	caccment		pprox. 90 to 180 minutes) and written exercises (appro	v 12 evercise s	sheets with approx / evercises				
	Method of as	556551116111	each)	pprox. 90 to 100 minutes) and written exercises (appro	JA. 12 EXERCISE S	sneets with approx. 4 exercises				
			Language of assessme	ent: German and/or English						
10-M-SEM-152-	Seminar Mat	hematics								
mo1	ECTS 5	Duratio		Method of grading numerical grade	Modul level	undergraduate				
	Courses		S (2)							
	Method of as	ssessment								
	D. C	1001		ent: German and/or English		_				
	Referred to in	1 LPU I	§ 22 II Nr. 3 f)							
Summer Term 20:										
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 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-ASM-152-	Reasoning a	nd Writing	in Mathematics	, 0						
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	5)						
			Language of assessment: German and/or English							
10-M-VHB1-152-			Learning Mathematics							
mo1	ECTS 2	Duratio		Method of grading (not) successfully completed	Modul level	undergraduate				
	Courses			Ü (2)						
			Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of as	ssessment	project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester							
		-	7.55655illent offered. C							
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10-M-VHB2-152-	E-Learn	ing and	Blended	Learn	ing Mathematics 2						
mo1	ECTS	2	Duration	1	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Course	S		Ü (2)			,				
						mostly Virtuelle Hochschule Bayern (vhb)					
	Method of assessment				project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester						
12 M CDM 172	Dania N		d AA - 4 h								
10-M-GBM-152- mo1					s of Mathematical Reasoning						
11101	ECTS	2	Duration		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Course	-		V (1) +				_			
	Method	or ass	essment		ct (10 to 15 pages)	:: German and/or English					
	Additio	nal Info	rmation			n module duration: block taught prior to the beginni	ng of the lectur	e neriod			
	Referre				I Nr. 1 h)	m module duration. Block taught phor to the beginning	ng of the tectur	e period.			
	Kerene	a to iii i			l Nr. 2 f)						
10-M-LNA1-152-	Linear	Algebra	1				1				
mo1	ECTS	8	Duration	1	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Course	S	•	V (4) -	+ Ü (2)	·					
	Method of assessment			writte	n examination (app	prox. 90 to 180 minutes) and written exercises (appro	ox. 12 exercise s	sheets with approx. 4 exercises			
				each)							
				Langu	lage of assessment	t: German and/or English					
Winter Term 2022											
10-M-ANA1-152-	Analysi										
mo1	ECTS	8	Duration		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Course			V (4) -							
	Method of assessment		essment	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-	Reason	ing and	d Writing i			definant and/or English					
mo1		2	Duration		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Course		Baration			method of glading (not) successfully completed	Modulitevel	undergraduate			
			essment	V (1) + Ü (1) project (10 to 20 pages)							
	Method	a 01 uss	Cooment	Language of assessment: German and/or English							
10-M-VHB1-152-	E-Learn	ing and	d Blended	_	ing Mathematics 1		1				
mo1	ECTS	2	Duration	1	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Course	S	_	Ü (2)	•	<u>.</u>		·			
						mostly Virtuelle Hochschule Bayern (vhb)					
	Method	d of ass	essment		ct (web-based, 15 to	o 20 hours) ce a year, winter semester					
1				. ^ ~ ~ ~ ~	cmont attarad. On	a a year winter comecter					

10-M-VHB2-152-	E-Learning an	E-Learning and Blended Learning Mathematics 2										
mo1	ECTS 2	Duratio	n	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate					
İ	Courses		Ü (2)		· · · · · · · · · · · · · · · · · · ·	•						
					nostly Virtuelle Hochschule Bayern (vhb)							
	Method of ass	essment		t (web-based, 15 to								
					e a year, summer semester							
10-M-SEM2-152- mo1		<u> </u>		lathematics								
11101	ECTS 4	Duratio		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		S (2)				_					
	Method of ass	sessment		50 to 120 minutes)	German and/or English							
10-M-GBM-152-	Pasis Nations	and Math		Mathematical Reas	,							
10-M-GBM-152- mo1		Duratio				Modul level	undorgraduato					
		Duratio		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		V (1) +									
	Method of ass	sessment		oroject (10 to 15 pages) anguage of assessment: German and/or English								
	Additional Inf	ormation		anguage of assessment. German and/or English additional information on module duration: block taught prior to the beginning of the lecture period.								
	Referred to in	_		§ 22 Nr. 1 h)								
	Referred to III			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 ass	essment	writte	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises								
			each)	· · · · · ·								
14.0514	6		Langu	Language of assessment: German and/or English								
10-M-SEM-152- mo1	Seminar Math	1				I	· · · · ·					
IIIOI	ECTS 5	Duratio		1 semester	Method of grading numerical grade	Modul level	undergraduate					
	Courses		S (2)		,							
	Method of ass	essment		talk (60 to 120 minutes)								
	Referred to in	I DO I		Language of assessment: German and/or English								
Summer Towns		LFUI	3 22 11	§ 22 II Nr. 3 f)								
Summer Term 202												
10-M-ANA1-152-	Analysis 1					I						
mo1	ECTS 8	Duratio	,	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		V (4) +									
	Method of ass	essment		n examination (app	rox. 90 to 180 minutes) and written exercises (appro	x. 12 exercise s	sheets with approx. 4 exercises					
			each) Language of assessment: German and/or English									
			Lungu	age of assessinell.								
Mathematics (2019)					JMU Würzburg • generated 19-Apr-20:	25 • exam. reg. data r	ecord MB 105 - - H 2019 page 11 / 18					

Analysis 2											
ECTS 8 Duration			1	1 semester	Method of grading	(not) successfully comple	ted Modul level	undergraduate			
Course	S	•	V (4)	+ Ü (2)			-				
Method	d of ass	essment		written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises							
			,	each)							
Poscor	ing and	Writing									
		Duration			Method of grading	(not) successfully comple	tea Modul level	undergraduate			
			٠,,								
Method	u oi ass	essment			: German and/or Eng	lish					
Basic N	lotions	and Meth				<u> </u>					
ECTS	2	Duration	1	1 semester	Method of grading	(not) successfully comple	ted Modul level	undergraduate			
Course	S		V (1) -	- Ü (1)							
Method of assessment											
Additio	nal Info	rmation			n module duration: b	lock taught prior to the beg	inning of the lectur	e period.			
Referre	d to in I	-PO I									
Lincor	Alaabaa		§ 22 I	I Nr. 2 f)							
		Duration			Method of grading	(not) successfully comple	tea Modul level	undergraduate			
					rov. oo to 100 minut	as) and written eversions (a	nnray 10 avaraisa	chasts with approxy (avaraises			
Method of assessment											
			,		: German and/or Eng	lish					
Linear	Algebra	2									
ECTS	8	Duration	ı	1 semester	Method of grading	(not) successfully comple	ted Modul level	undergraduate			
Course	s	,	V (4)	+ Ü (2)		•	•				
Method	d of ass	essment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises								
			each)								
F 1	•	10111									
					NA - 411 - 6 1:	(t)t-111-	tad Madulland	Torrida nome do esta			
-		Duration		1 semester	Method of grading	(not) successfully comple	tea Modul level	undergraduate			
Course	S			e tyne: el earning in	nostly Virtuelle Hoch	schule Bavern (vhh)					
Method	d of ass	essment				Jenate Bayeni (viib)		_			
metriot	a 01 u33	Cooment				ester					
	Reasor ECTS Course Method Basic N ECTS Course Method Addition Referre Linear ECTS Course Method Linear ECTS Course Method Linear ECTS Course Method Linear ECTS Course Method	ECTS 8 Courses Method of ass Reasoning and ECTS 2 Courses Method of ass Basic Notions ECTS 2 Courses Method of ass Additional Information and Inform	ECTS 8 Duration Courses Method of assessment Reasoning and Writing is ECTS 2 Duration Courses Method of assessment Basic Notions and Meth ECTS 2 Duration Courses Method of assessment Additional Information Referred to in LPO I Linear Algebra 1 ECTS 8 Duration Courses Method of assessment Linear Algebra 2 ECTS 8 Duration Courses Method of assessment Linear Algebra 2 ECTS 8 Duration Courses Method of assessment E-Learning and Blended ECTS 2 Duration	ECTS 8 Duration Courses V (4) - Method of assessment writte each) Langu Reasoning and Writing in Mathematical ECTS 2 Duration Courses V (1) - Method of assessment project Langu Additional Information Additional Information Additional Information Referred to in LPO I \$ 2 2 1 \$ 2 2 2 1 \$ 2 2 2 1 \$ 2 2 2 1 \$ 2 2 2 1 \$ 2 2 2 2	Courses	Courses	Courses	ECTS 8			

10-M-VHB2-152-	E-Learning and Blended Learning Mathematics 2										
mo1	ECTS 2	Duratio	n 1 semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses	 ,	Ü (2)		-						
			Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)								
	Method of as	sessment		project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester							
Winter Term 2023			Assessment onered. On	te a year, summer semester							
10-M-ANA1-152-	Analysis										
10-M-ANA1-152- mo1	Analysis 1 ECTS 8	Duratio	n la comoctor	Method of grading (not) successfully completed	Modul level	undergraduate					
11101	Courses	Duratio	n 1 semester V (4) + Ü (2)	Method of grading (hot) successfully completed	Modul level	undergraduate					
	Method of as	coccmont	11/	prox. 90 to 180 minutes) and written exercises (appro	y 42 oversise (shoots with approx / oversises					
	Method of as	sessillelli	each)	prox. 90 to 160 minutes) and written exercises (appro	ix. 12 exercise s	sheets with approx. 4 exercises					
				t: German and/or English							
10-M-ANA2-152-	Analysis 2										
mo1	ECTS 8	Duratio		Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		V (4) + Ü (2)								
	Method of as	sessment	1	prox. 90 to 180 minutes) and written exercises (appro	x. 12 exercise s	sheets with approx. 4 exercises					
			each)	t: German and/or English							
10-M-ASM-152-	Possoning at	nd Writing	in Mathematics	t. German and/or English							
mo1	ECTS 2	Duratio		Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses	Duratio	V (1) + Ü (1)	Method of grading (not) successfully completed	Modulitevel	undergraduate					
	Method of as	sessment		project (10 to 20 pages)							
	Method of ds	Sessinent	Language of assessment: German and/or English								
10-M-VHB1-152-	E-Learning a	nd Blended	Learning Mathematics 1								
mo1	ECTS 2	Duratio	n 1 semester	Method of grading (not) successfully completed	Modul level	undergraduate					
	Courses		Ü (2)								
			Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)								
	Method of as	sessment		project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester							
10-M-VHB2-152-	E Loorning or	nd Blandad	Learning Mathematics 2		-						
10-M-VIIB2-152- mo1	ECTS 2	Duratio			Modul level	undergraduate					
	Courses	Duratio	Ü (2)	Method of grading (hot) successfully completed	Modul level	undergraduate					
	Courses			mostly Virtuelle Hochschule Bayern (vhb)							
	Method of as	sessment	project (web-based, 15 t								
				ce a year, summer semester							

10-M-DGL-152-m01	Ordinary Differential Equations									
	ECTS 9 Duration		n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	·	V (4) -	V (4) + Ü (2)						
	Method of as	sessment	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	s and Meth	ods of	Mathematical Reas	oning		,			
mo1	ECTS 2	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (1) +	· Ü (1)			*			
	Method of as	sessment	project (10 to 15 pages) Language of assessment: German and/or English							
	Additional Information		Additi	onal information or	module duration: blo	ock taught prior to the beginn	ing of the lectur	e period.		
	Referred to in LPO I		§ 22 Nr. 1 h) § 22 Nr. 2 f)							
10-M-LNA1-152-	Linear Algebr	ra 1					,			
mo1	ECTS 8	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (4) -	V (4) + Ü (2)						
	Method of as	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-LNA2-152-	Linear Algebra 2									
mo1	ECTS 8 Duration		n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (4) + Ü (2)							
	Method of as	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-VAN-152-m01	Advanced An	alysis								
	ECTS 7 Duration		n	1 semester	Method of grading	numerical 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								
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)							
10-M-ANA2-152-	Analysis 2	Language of assessment: German and/or English							
mo1	ECTS 8 Duratio	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							
	Wethod of assessment	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)							
	Language of assessment: German and/or English								
10-M-VHB1-152- mo1		Learning Mathematics 1							
11101	ECTS 2 Duratio								
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of assessment	project (web-based, 15 to 20 hours)							
	method of discissing in	Assessment offered: Once a year, winter semester							
10-M-VHB2-152-	E-Learning and Blended Learning Mathematics 2								
mo1	ECTS 2 Duratio	n 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) Assessment offered: Once a year, summer semester							
10-M-GBM-152-	Rasic Notions and Moth	nods of Mathematical Reasoning							
mo1	ECTS 2 Duratio								
	Courses	$V(1) + \ddot{U}(1)$							
	Method of assessment	project (10 to 15 pages)							
	Method of assessment	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 II Nr. 1 h)							
		§ 22 II 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) + Ü (2)										
	Method of	assessment		n (approx. 90 to 180 minutes) and written exercises (approx. 12 exercise sheets with approx. 4 exercises									
			each)										
10-M-LNA2-152-	Linear Alge	hra a	Language of assessment: German and/or English										
mo1	ECTS 8	Duration	1 semester Method of grading (not) successfully completed Modul level undergraduate										
		Duration	1 semester V (4) + Ü (2)	Method of grading (not) successfully completed Modul level undergraduate									
	Courses	assessment		n (annroy as to 40 a minutes) and written exercises (annroy 42 exercise sheets with annroy 4 exercises									
	Method of	assessineiii	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										
Winter Term 2024													
10-M-ANA1-152-	Analysis 1	Analysis 1											
mo1	ECTS 8	Duratio	1 semester	Method of grading (not) successfully completed Modul level undergraduate									
	Courses	,	V (4) + Ü (2)	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)										
	A I		Language of asses	sment: German and/or English									
10-M-ANA2-152- mo1	Analysis 2												
11101	ECTS 8	Duratio											
	Courses		$V(4) + \ddot{U}(2)$										
	Method of a	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 in Mathematics												
mo1	ECTS 2	Duratio	n 1 semester	Method of grading (not) successfully completed Modul level undergraduate									
	Courses		$V(1) + \ddot{U}(1)$										
	Method of assessment		project (10 to 20 pages)										
			Language of assessment: German and/or English										
10-M-VHB1-152-			Learning Mathematics 1										
mo1	ECTS 2	Duratio		Method of grading (not) successfully completed Modul level undergraduate									
	Courses		Ü (2)										
	Mothodof	assessment	Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb) project (web-based, 15 to 20 hours)										
	Method of a	assessineill	Assessment offered: Once a year, winter semester										
	Assessment office a year, winter semester												

10-M-VHB2-152-	E-Learning and Blended Learning Mathematics 2										
mo1	ECTS 2	CTS 2 Duration		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 Differential Equations										
	ECTS 9 Duration		n	1 semester	Method of grading ((not) successfully completed	Modul level	undergraduate			
	Courses		V (4) +	+ Ü (2)							
			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 Notion	is and Meth	ods of	ods of Mathematical Reasoning							
mo1	ECTS 2	Duratio	n	1 semester	Method of grading ((not) successfully completed	Modul level	undergraduate			
	Courses V (1)		V (1) +								
				project (10 to 15 pages) Language of assessment: German and/or English							
	Additional Information A		Additi	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		$V(4) + \ddot{U}(2)$								
			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 Algeb	ra 2									
mo1	ECTS 8 Duration		n	1 semester	Method of grading ((not) successfully completed	Modul level	undergraduate			
	Courses		V (4) + Ü (2)								
	Method of assessment		each)	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-n	101 Advance	Advanced Analysis											
	ECTS 7	ECTS 7 Duration		ı	1 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Courses V (4) + Ü (2)												
	Method o	of asse		b) ora c) oral Langu	l examination of one l examination in grou	candidate each (15	o 15 minutes per candidate)						