

Module Catalogue

for the Subject

Mathematics

as a Bachelor's with 1 major with the degree "Bachelor of Science" (180 ECTS credits)

> Examination regulations version: 2012 Responsible: Institute of Mathematics

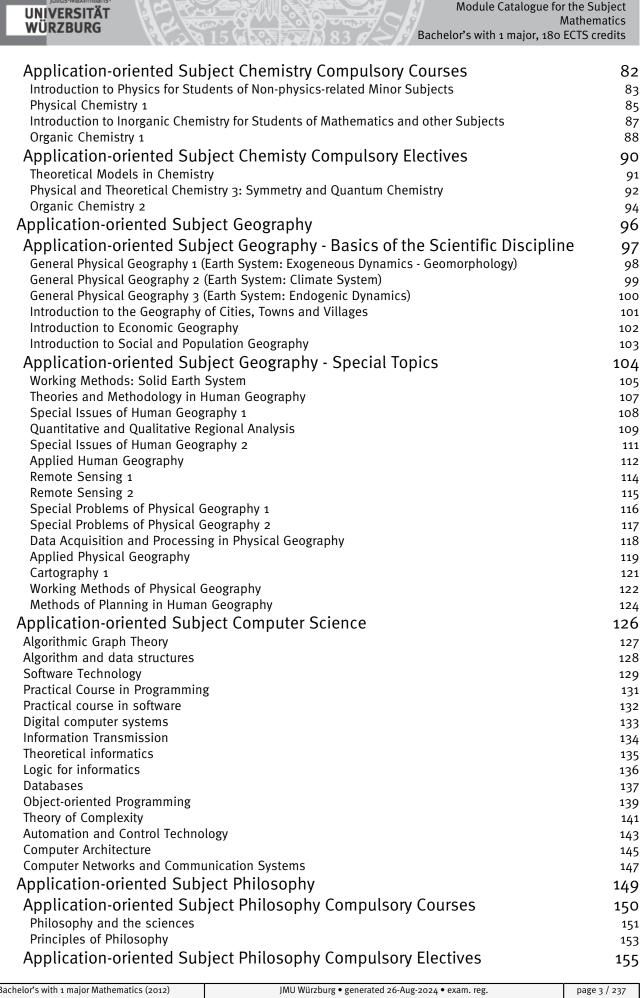
JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record 82|105|-|-|H|2012



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	data record Bachelor (180 ECTS) Mathematik - 2012	



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The subject is divided into

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Content and Objectives of the Programme

The mathematics Bachelor programme is offered by the Department of Mathematics, with a total of (currently: SS 2010) nine chairs. At the end of this course of study, the student should be familiar with the main branches of Mathematics, taught methods of mathematical reasoning and working as well as analytical thinking, abstract concepts and the ability to recognise and construct complex structures and interconnections. Through the course these skills, which the students acquires provides the basic knowledge required for a consecutive Bachelor-Masters degree. Moreover, they can later familiarise themselves with the many areas of society, in which mathematical methods can be applied to or be of use. This is supported through the study of an integrated elective application-oriented subject (biology, chemistry, geography, computer science, philosophy, physics or economics), in which the choice of the student is trusted to utilise the basic thoughts and technical skills of the subject, where there is an application of mathematical methods. In the mathematics Bachelor study, the main emphasis is put on basic mathematical knowledge, method knowledge and the development of the mental constructs which are typical for mathematics. The acquisition of special topics in different secondary branches of mathematics is subordinate. For the Bachelor thesis the student should work on a thematic and temporally closely limited frame in order to carry out a mathematical task, using well-known procedures and scientific criteria under guidance but, to a large extent, independently. The exam enables the acquisition of a comparable, international degree in the field of mathematics and provides the framework of a consecutive Bachelor-Masters degree as an initial professional qualification, which can be used as a means for entry into the working world or as preparation for further Masters study. The exam should ascertain whether the candidate overlooks the context of the basics in mathematics and possesses the ability to use the related scientific methods, with regards to mathematics and the selected elective application-oriented subjects.

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, $\ddot{\mathbf{U}}$ = 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

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Notes

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 the 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:

ASP02009

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

24-Oct-2012 (2012-167)

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.



Compulsory Courses

(109 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 9 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title			Abbreviation			
Analysis		10-M-ANA-122-m01				
Module coordinator		Module offered by				
Dean o	f Studi	es Mathematik (Mathem	natics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
20	nume	rical grade				
Duratio		Module level	Other prerequisites			
2 seme	ester	undergraduate			isites are listed in th	e section on
Conten	ts					
		and completeness, bas al and integral calculus				
Intend	ed lear	ning outcomes				
The stu mather	ident k natical	nows and masters the e arguments and present nethods and concepts i	them adequately in w	ritten and oral form.	He/She is acquainted	ed with the
Course	S (type, r	number of weekly contact hours	, language — if other than Ger	man)		
compo	nent. o-M-AN o-M-AN o-M-AN	omprises 3 module con IA-1-122: V + Ü (no infor IA-2-122: V + Ü (no infor IA-P-122: M (no informa Sessment (type, scope, langu	mation on SWS (weekl mation on SWS (week tion on SWS (weekly c	y contact hours) and ly contact hours) and ontact hours) and co	l course language av d course language av ourse language avail	vailable) vailable) able)
		le for bonus)	,		,,	
	nless st	n this module comprises ated otherwise, success ments.				
 Assessment in module component 10-M-ANA-1-122: Analysis 1 Analysis 1 8 ECTS, Method of grading: (not) successfully completed written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination in groups (groups of 2, approx. 30 minutes). Module will also be considered successfully completed if the module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. 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 at a later date, students will have to obtain the qualification for admission to assessment anew. Assessment in module component 10⁻M-ANA-2-122: Analysis 2 Analysis 2 8 ECTS, Method of grading: (not) successfully completed written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination in groups (groups of 2, approx. 30 minutes). Module will also be considered a later date, students will have to obtain the qualification for admission to assessment anew. 						
·	Language of assessment: German, English if agreed upon with the examiner					
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 10 / 237

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 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 anew.

Assessment in module component 10-M-ANA-P-122: Examination in Analysis

- 4 ECTS, Method of grading: numerical grade
- oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-ANA-1 and 10-M-ANA-2
- Language of assessment: German, English if agreed upon with the examiner
- Only after successful completion of module components: Successful completion of the written examination in any one of the other two module components is a prerequisite for participation in module component 10-M-ANA-P.

Allocation of places

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Additional information

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Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 73 (1) 1. Mathematik Analysis

Module appears in

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Mathematical Physics (2012)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg ● generated 26-Aug-2024 ● exam. reg.	page 11 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title			Abbreviation			
Applied Mathematics 10-M-ANW-122-m01				1		
Module coordinator		Module offered by				
Dean of Studies Mathematik (Mathematics)		Institute of Mathem	natics			
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)		
20	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
2 seme	ester	undergraduate	By way of exception assessments.	, additional prerequi	isites are listed in th	e section on
Conter	nts					
Two of the following topics in applied mathematics: Numerical Mathematics 1 (Solution of systems of linear equations and curve fitting problems, nonlinear equations and systems of equations, interpolation with polynomials, splines and trigonometric functions, numerical integration) Numerical Mathematics 2 (Solution methods and applications for eigenvalue problems, linear programming, initial value problems for ordinary differential equations, boundary value problems) Stochastics 1 (Combinatorics, Laplace models, selected discrete distributions, elementary measure and integration theory, continuous distributions: normal distribution, random variable, distribution function, product measures and stochastic independence, elementary conditional probability, characteristics of distributions: expected value and variance, limit theorems: law of large numbers, central limit theorem) Stochastics 2 (Elements of data analysis, statistics of data in normal and other distributions, elements of multivariate statistics) Intended learning outcomes The student is acquainted with the fundamental concepts and notions of some field in applied mathematics. He/ she is able to interconnect these concepts and and realises the advantages of thinking across the borders of different branches in mathematics.						
	_	number of weekly contact hours,				
• 1 § • 1 Metho	io-M-Nl guage a io-M-Al d of ass	as 5 components; inforr JM-1-122, 10-M-NUM-2-1 nd number of weekly con JW-P-112: M (no informat sessment (type, scope, langu- le for bonus)	22, 10-M-STO-1-122, a ntact hours available) tion on language and	nd 10-M-STO-2-122: number of weekly co	V + Ü (no informati ontact hours availab	le)
 This module has the following 5 assessment components. To pass this module, students must pass one out of the 4 assessment components that are first in the list below and the assessment component that is last in the list below. Assessment in module component 10-M-NUM-1-122: Numerische Mathematik 1 (Numerical Mathematics 1), in module component 10-M-NUM-2-122: Numerische Mathematik 2 (Numerical Mathematics 2), in module component 10-M-STO-1-122: Stochastik 1 (Stochastics 1), and in module component 10-M-STO-2-122: Stochastik 2 (Stochastics 2) : 8 ECTS credits, pass / fail written examination (approx. 90 to 180 minutes). If announced by the lecturer, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 30 minutes). The module component will also be considered successfully completed if it is selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed. 						
 Module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed. Language of assessment: German; English if agreed upon with examiner(s) Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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 stu- 						
Bachelor's	s with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathemat	-	page 12 / 237

dents 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 anew.

Assessment in module component 10-M-ANW-P-112: Prüfung Angewandte Mathematik (Assessment Applied Mathematics)

- 4 ECTS credits, numerical grading
- oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in the two module components selected by students.
- Language of assessment: German; English if agreed upon with examiner(s)
- Only after successful completion of module components: Module component 10-M-ANW-P can only be taken by students who passed the written examination in one of the other four module components.

Allocation of places

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Additional information

Additional information on module duration: 1 to 2 semesters.

Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)

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	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation
Linear Algebra		10-M-LNA-122-m01			
Module coordinator Module offered by		Module offered by			
Dean of Studies Mathematik (Mathematics) Institute of Mathematics		atics			
ECTS Method of grading Only after succ. compl. of modu		npl. of module(s)			
20	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
2 seme	ester	undergraduate	By way of exception, additional prerequisites are listed in the section on assessments.		

Contents

Basic notions and structures; vector spaces, linear maps and systems of linear equations; theory of matrices and determinants; eigenvalue theory; bilinear forms and Euclidean/unitary vector spaces; diagonalisability and Jordan normal form.

Intended learning outcomes

The student knows and masters the basic notions and essential methods of linear algebra. He/She is able to perform easy mathematical arguments independently, and can present them adequately in written and oral form. He/She is able to apply the central proof methods and concepts of linear algebra and knows about their algebraic and geometric background.

Courses (type, number of weekly contact hours, language – if other than German)

This module comprises 3 module components. Information on courses will be listed separately for each module component.

- 10-M-LNA-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 10-M-LNA-2-122: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 10-M-LNA-P-122: M (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

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-LNA-1-122: Linear Algebra 1 Linear Algebra 1

- 8 ECTS, Method of grading: (not) successfully completed
- written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed.
- 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 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 anew.

Assessment in module component 10-M-LNA-2-122: Linear Algebra 2 Linear Algebra 2

- 8 ECTS, Method of grading: (not) successfully completed
- written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the

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module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed.

- 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 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 anew.

Assessment in module component 10-M-LNA-P-122: Examination in Linear Algebra

- 4 ECTS, Method of grading: numerical grade
- oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-LNA-1 and 10-M-LNA-2
- Language of assessment: German, English if agreed upon with the examiner
- Only after successful completion of module components: Successful completion of the written examination in any one of the other two module components is a prerequisite for participation in module component 10-M-LNA-P.

Allocation of places

UNIVERSITÄT

WÜRZBURG

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Additional information

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Workload

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie

Module appears in

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Mathematical Physics (2012)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

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	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title			Abbreviation			
Pure N	lathema	atics			10-M-REI-122-m01	
Modul	e coord	inator		Module offered by		
Dean c	of Studio	es Mathematik (Mathem	atics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
20	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
2 seme	ester	undergraduate	By way of exception assessments.	, additional prerequi	sites are listed in th	e section on
Conter	nts					
Introduction, so metries Ordina itial va higher Introductegrals theore Geome ke's th Introduction sargue Intend	uction t ubmani s, main ny Diffe lues, sy order) uction t and Ca m and a etric An eorem a uction t s, fund ed learn udent is	o Algebra (Fundamental o Differential Geometry folds in Euclidean space theorem on local surface orential Equations (Existent stems of linear different o Complex Analysis (Con auchy integral theorems, applications, Weierstraß alysis (Fundamentals in and applications in vecto o Projective Geometry (F amental theorems for pro- ning outcomes acquainted with fundar epts with one another, a	(Curves in Euclidean es, hypersurfaces in p e theory, special classence and uniqueness tial equations, matrix mplex differentiability isolated singularities product theorem and analysis on manifold or analysis and topolo Projective and affine p ojective spaces, dual	spaces, curvature, Fr articular, curvature o ses of surfaces) theorem; continuous exponential series, l and Cauchy-Rieman s, meromorphic funct theorem of Mittag-L s, submanifolds, calo ogy) planes, projective an ities and polarities o methods in pure mat	enet equations, loca f hypersurfaces, geo s dependence of sol inear differential equati ions and Laurent se effler, conformal ma culus of differential f d affine spaces, theo f projective spaces). hematics. He/She is	odesics, iso- utions on in- uations of ons, path in- ries, residue ps) forms, Sto- orem of De-
ches ir	n mathe	matics.	_			
This m 1 1 1 1	odule h 10-M-AL / + Ü (n 10-M-RE	as 7 components; inforr G-1-122, 10-M-DGE-1-122 o information on langua I-P-122: M (no informatio	nation on courses list 2, 10-M-DGL-1-122, 10- ge and number of wee on on language and n	ed separately for eac M-FTH-1-122, 10-M-G, ekly contact hours av umber of weekly con	AN-1-122, and 10-M-F vailable) tact hours available)
		sessment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	on on whether
the 6 a the ass Assess dule cc in mod in mod 10-M-F • 8 • V	ssessme sment in ompone lule con lule con lule con lule con gGE-1-12 3 ECTS of written of nay be	as the following 7 asses nent components that ar nt component that is las n module component 10 ent 10-M-DGE-1-122: Einf nponent 10-M-DGL-1-122 nponent 10-M-FTH-1-122 nponent 10-M-GAN-1-122 22: Einführung in die Pro credits, pass / fail examination (approx. 90 replaced by an oral exam roups of 2 candidates (a	e first in the list below ti in the list below. -M-ALG-1-122: Einführ Gührung in die Differer 2: Gewöhnliche Differer 2: Geometrische Differer 2: Geometrische Analy jektive Geometrie (Inf 0 to 180 minutes). If a nination of one candio	v and pass one of the rung in die Algebra (I ntialgeometrie (Introc entialgleichungen (O nktionentheorie (Intr ysis (Geometric Analy troduction to Projection nnounced by the lec date each (approx. 20	em, furthermore they ntroduction to Algeb duction to Differentia rdinary Differential E roduction to Comple ysis), and in module ive Geometry): turer, the written ex o minutes) or an oral	y must pass ora), in mo- al Geometry), equations), x Analysis), e component amination examina-
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cessfully completed if it is selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed.

- Language of assessment: German; English if agreed upon with examiner(s)
- Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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 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 anew.

Assessment in module component 10-M-REI-P-122: Prüfung Reine Mathematik (Assessment Pure Mathematics)

- 4 ECTS credits, numerical grading
- oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in the two module components selected by students.
- Language of assessment: German; English if agreed upon with examiner(s)
- Only after successful completion of module components: Module component 10-M-REI-P can only be taken by students who passed the written examination in one of the other six module components.

Allocation of places

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Additional information

Additional information on module duration: 1 to 2 semesters.

Workload

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Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)

Module	title				Abbreviation	
Advanc	ed Mat	hematics			10-M-SPZ-122-m01	
Module	coord	inator		Module offered by		
Dean of	fStudie	es Mathematik (Mathem	natics)	Institute of Mathematics		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
20		rical grade		•		
Duratio		Module level	Other prerequisites			
2 seme		undergraduate	By way of exception assessments.	, additional prerequi	sites are listed in the	e section on
Conten	ts					
Two of t sessme Numeri ons and tegratic Numeri	the foll ent in m cal Ma d syste on) cal Ma	owing topics in pure or nodule 10-M-ANW or 10- thematics 1 (Solution of ms of equations, interpo thematics 2 (Solution m	M-REI: f systems of linear equ olation with polynomia nethods and applicatio	ations and curve fitt als, splines and trigo ans for eigenvalue pr	ing problems, nonlir nometric functions, oblems, linear progr	near equati- numerical in-
itial val Stochas tion the sures a ted valu Stochas variate Introdu tion, su metries Ordinan itial val higher o Introdu tegrals theorem	ue prol stics 1 eory, cc nd stoo ue and stics 2 statisti ction t ction t ues, sy order) ction t and Ca n and a tric An	blems for ordinary differ (Combinatorics, Laplace ontinuous distributions: chastic independence, e variance, limit theorems (Elements of data analy ics) o Algebra (Fundamenta o Differential Geometry folds in Euclidean space theorem on local surface rential Equations (Exist restems of linear differen o Complex Analysis (Co puchy integral theorems applications, Weierstraß alysis (Fundamentals in	rential equations, bour e models, selected dis normal distribution, ra elementary conditional s: law of large number vsis, statistics of data i l algebraic structures: (Curves in Euclidean s es, hypersurfaces in pa te theory, special class ence and uniqueness tial equations, matrix mplex differentiability , isolated singularities product theorem and analysis on manifolds	ndary value problem crete distributions, e andom variable, dist probability, charact s, central limit theor n normal and other groups, rings, fields paces, curvature, Fr articular, curvature o ses of surfaces) theorem; continuous exponential series, l and Cauchy-Rieman , meromorphic funct theorem of Mittag-L s, submanifolds, calo	s) elementary measure ribution function, pr teristics of distribution em) distributions, element ; Galois theory) enet equations, loca f hypersurfaces, geo s dependence of solution inear differential equation ions and Laurent set effler, conformal ma	and integra- oduct mea- ons: expec- nts of multi- l classifica- desics, iso- utions on in- uations of ons, path in- ries, residue ps)
Introdu sargues Introdu applica Introdu tional a Operati graph ti Introdu sation,	ction t s, funda ction t tions, c ction t nalysis ions Re heoreti ction t modul	and applications in vect o Projective Geometry (amental theorems for pro o Discrete Mathematics cryptographic methods, o Functional Analysis (E s) esearch (Linear program ic problems) o Number Theory (Elem ar arithmetics, prime test c remainder, quadratic for	Projective and affine p rojective spaces, duali (Techniques from con error-correcting codes Banach spaces and Hil ming, duality theory, t entary properties of dir sts and methods for fa	lanes, projective and ties and polarities of hbinatorics, introduc) bert spaces, bounde ransport problems, i visibility, prime num ctorisation, structure	f projective spaces) ction to graph theory ed operators, princip integral linear progra bers and prime num e of the residue class	including les of func- mming, ber factori- s rings, theo-
Intende	ed leari	ning outcomes				
The stu these fu	Intended learning outcomes The student is acquainted with advanced concepts and methods of pure and/or applied mathematics. Based on these fundamental mathematical concepts and methods he/she is able to persue further studies and interrela- te these concepts, and realises the advantages of thinking across the borders of different branches in mathema- tics.					
Bachelor's	with 1 maj	or Mathematics (2012)		• generated 26-Aug-2024 • e		page 18 / 237

Courses (type, number of weekly contact hours, language - if other than German)

This module has 15 components; information on courses listed separately for each component.

- 10-M-NUM-1-122, 10-M-NUM-2-122, 10-M-STO-1-122, 10-M-STO-2-122, 10-M-ALG-1-122, 10-M-DGE-1-122, 10-M-DGE-1-122, 10-M-DGE-1-122, 10-M-DGE-1-122, 10-M-FAN-1-122, 10-M-FAN-1-122, 10-M-ORS-1-122, and 10-M-ZTH-1-122: V + Ü (no information on language and number of weekly contact hours available)
- 10-M-SPZ-P-122: M (no information on language and number of weekly contact hours available)

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

This module has the following 15 assessment components. To pass this module, students must pass one out of the 14 assessment components that are first in the list below and the assessment component that is last in the list below.

Assessment in module component 10-M-NUM-1-122: Numerische Mathematik 1 (Numerical Mathematics 1), in module component 10-M-NUM-2-122: Numerische Mathematik 2 (Numerical Mathematics 2), in module component 10-M-STO-1-122: Stochastik 1 (Stochastics 1), in module component 10-M-STO-2-122: Stochastik 2 (Stochastics 2), in module component 10-M-ALG-1-122: Einführung in die Algebra (Introduction to Algebra), in module component 10-M-DGE-1-122: Einführung in die Differentialgeometrie (Introduction to Differential Geometry), in module component 10-M-DGL-1-122: Gewöhnliche Differentialgleichungen (Ordinary Differential Equations), in module component 10-M-FTH-1-122: Einführung in die Funktionentheorie (Introduction to Complex Analysis), in module component 10-M-GAN-1-122: Geometrische Analysis (Geometric Analysis), in module component 10-M-PGE-1-122: Einführung in die Projektive Geometrie (Introduction to Projective Geometry), in module component 10-M-DIM-1-122: Einführung in die Diskrete Mathematik (Introduction to Discrete Mathematics), in module component 10-M-GRS-1-122: Operations Research, and in module component 10-M-ZTH-1-122: Einführung in die Zahlentheorie (Introduction to Number Theory) :

- 8 ECTS credits, pass / fail
- written examination (approx. 90 to 180 minutes). If announced by the lecturer, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 30 minutes). The module component will also be considered successfully completed if it is selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed.
- Language of assessment: German; English if agreed upon with examiner(s)
- Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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 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 anew.

Assessment in module component 10-M-ERG-P-122: Prüfung in Ergänzung Mathematik (Assessment in Selected Topics from Mathematics)

- 2 ECTS credits, numerical grading
- oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in the module component selected by students.
- Language of assessment: German; English if agreed upon with examiner(s)
- Only after successful completion of module components: Module component 10-M-ERG-P can only be taken by students who passed the written examination in one of the other 14 module components.

Allocation of places

Additional information

Additional information on module duration: 1 to 2 semesters.

Workload

Bachelor's with 1 major Mathematics (2012)

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Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)

Bachelor's with 1 major Mathematics (2012)	IMIL Würzburg & generated of Aug 2027 & over reg	naga ag / 227
Dachelor S with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 20 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation	
Advanc	ed Ana	llysis			10-M-VAN-122-m01	
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Mathematik (Mathem	natics)	Institute of Mathematics		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
9	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 semester undergraduate Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective deta 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 or the course of the semester, the lecturer will put their registration for a sessment into effect. Students who meet all prerequisites will be admited to assessment at a later date, students will have to obtain the qualification admission to assessment anew.				ive details l be con- t. If stu- sment over ion for as- l be admit- ter. For as-		
Conten	ts					
		of analysis in several va	riables, integration the	eorems.		
		ning outcomes				
	-	acquainted with advan		Taking the example	of the Leshegue inte	gral he or
		understand the constru			e of the Lesbegue lifte	giai, ne oi
Course	S (type, r	number of weekly contact hours	, language — if other than Ger	man)		
		mation on SWS (weekly			able)	
module is written if anno each (a	examin examin unced approx.	sessment (type, scope, langu le for bonus) nation (approx. 90 to 18 by the lecturer, the writt 20 minutes) or an oral (o minutes) en examination can be examination in groups	e replaced by an ora (groups of 2, appro:	l examination of one of	
Allocat	. <u> </u>	ssessment: German, En	glish if agreed upon w	ith the examiner		
Allocal		Diaces				
	1. 6		_			
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
			_			
Referre	ed to in	LPO I (examination regulatio	ns for teaching-degree progra	mmes)		
Module						
Bachel Bachel Bachel	or' deg or' deg or' deg	ree (1 major) Mathemati ree (1 major) Mathemati ree (1 major) Mathemati ree (1 major) Computati ree (1 major) Computati	ics (2013) ical Physics (2012) onal Mathematics (20			
Bachelor's	with 1 ma	jor Mathematics (2012)	JMU Würzburg data record B	• generated 26-Aug-2024 • achelor (180 ECTS) Mathema	exam. reg. tik - 2012	page 21 / 237



Compulsory Electives

(40 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 22 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Mathematics

Compulsory Electives Mathematics

(ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 23 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation	
Introdu	iction t	o Stochastic Financial	Mathematics		10-M-EFM-122-m01	
Module	e coord	inator		Module offered by		
		es Mathematik (Mather	natics)	Institute of Mathem	atics	
ECTS	1	od of grading	Only after succ. com			
9	————	rical grade		,		
Duratio		Module level	Other prerequisites			
sessm at the sidere dents the co sessm ted to sessm			Certain prerequisite sessment. The lectu at the beginning of t sidered a declaratio dents have obtained the course of the se sessment into effect ted to assessment in sessment at a later admission to assess	rer will inform stude the course. Registrat n of will to seek adm the qualification fo mester, the lecturer t. Students who mee n the current or in th date, students will h	nts about the respection for the course win ission to assessment r admission to assess will put their registration t all prerequisites wint e subsequent semestion	ctive details ill be con- nt. If stu- ssment over ation for as- ill be admit- ster. For as-
Conten	ts		1			
term st of asse	ructure t pricin	no-arbitrage, annuities s and yield curves, forv g in the stochastic one lti-period models, value	vards, payout profiles o period model, risk neu	of options and other utral price measures	derivates, fundamen , replication and con	ntal theorem npleteness,
Intende	ed learı	ning outcomes				
		acquainted with the fu practical problems and			astic financial math	ematics, can
Course	S (type, n	umber of weekly contact hours	s, language — if other than Ger	man)		
V + Ü (r	no infor	mation on SWS (weekly	y contact hours) and co	ourse language avail	able)	
		e essment (type, scope, lang le for bonus)	uage — if other than German, e	examination offered — if no	t every semester, informat	ion on whether
if anno each (a	unced l approx.	nation (approx. 90 to 18 by the lecturer, the writ 20 minutes) or an oral ssessment: German, Er	ten examination can be examination in groups	(groups of 2, approx		e candidate
Allocat						
Additio	onal info	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	ons for teaching-degree progra	mmes)		
Module	e appea	irs in				
Bachel Bachel	or' deg or' deg	ree (1 major) Mathemat ree (1 major) Mathemat ree (1 major) Economat	ics (2013)			
		or Mathematics (2012)		• generated 26-Aug-2024 • 6	ayam reg	nage 2/ / 227
Dachelor S	with 1 maj	or mathematics (2012)	-	• generated 26-Aug-2024 • (achelor (180 ECTS) Mathema	-	page 24 / 237

Module	title				Abbreviation
Selecte	d Topi	cs from Mathematics			10-M-ERG-122-m01
Module	Module coordinator			Module offered by	
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
2 seme	ster	undergraduate	By way of exception, assessments.	, additional prerequi	isites are listed in the section on
Contents					
One of tin model Numeri ons and tegratio Numeri itial val Stochas tion the sures a ted valu Stochas variate Introdu tion, su metries Ordinan itial val higher of Introdu tegrals theorem Geomel ke's the Introdu sargues Introdu sargues Introdu sargues Introdu sargues Introdu sargues Introdu sargues Introdu sargues Introdu tional a	the foll ules 10 cal Ma d syste on) cal Ma ue prol stics 1 eory, cc nd stoc ue and stics 2 statisti ction t ction t and Ca n and a ction t s, funda ction t malysis	-M-REI, 10-M-ANW and 10 thematics 1 (Solution of s ms of equations, interpol thematics 2 (Solution me blems for ordinary differe (Combinatorics, Laplace ontinuous distributions: m chastic independence, el variance, limit theorems: (Elements of data analys ics) o Algebra (Fundamental a o Differential Geometry (folds in Euclidean spaces theorem on local surface trential Equations (Existe vstems of linear differenti o Complex Analysis (Com buchy integral theorems, if applications, Weierstraß p alysis (Fundamentals in a and applications in vecto o Projective Geometry (P amental theorems for pro o Discrete Mathematics (cryptographic methods, e o Functional Analysis (Ba s) esearch (Linear programm ic problems) o Number Theory (Element a rarithmetics, prime test c remainder, quadratic for	b-M-SPZ: systems of linear equilation with polynomia ethods and application models, selected dis- normal distribution, ra- ementary conditional alw of large number is, statistics of data i algebraic structures: Curves in Euclidean s s, hypersurfaces in pa- etheory, special class nce and uniqueness al equations, matrix of plex differentiability isolated singularities product theorem and analysis on manifolds r analysis and topolo rojective spaces, duali (Techniques from con error-correcting codes anach spaces and Hil- ning, duality theory, t iso and methods for fa-	ations and curve fitt als, splines and trigo ons for eigenvalue pro- ndary value problem crete distributions, e andom variable, dist probability, charact s, central limit theor n normal and other of groups, rings, fields spaces, curvature, Fr articular, curvature of ses of surfaces) theorem; continuous exponential series, l and Cauchy-Rieman , meromorphic funct theorem of Mittag-L s, submanifolds, calo gy) lanes, projective and ties and polarities of nbinatorics, introduce bert spaces, bounde ransport problems, i	elementary measure and integra- cribution function, product mea- teristics of distributions: expec- em) distributions, elements of multi- ; Galois theory) enet equations, local classifica- of hypersurfaces, geodesics, iso- s dependence of solutions on in- inear differential equations of an differential equations, path in- tions and Laurent series, residue effler, conformal maps) culus of differential forms, Sto- d affine spaces, theorem of De- f projective spaces) ction to graph theory including ed operators, principles of func- integral linear programming, abers and prime number factori- e of the residue class rings, theo-
Intende	ed leari	ning outcomes			
these fu	undam		epts and methods he	/she is able to persu	r applied mathematics. Based on ue further studies and interrelate dge.

Courses (type, number of weekly contact hours, language – if other than German)

This module has 15 components; information on courses listed separately for each component.

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 25 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

- 10-M-NUM-1-122, 10-M-NUM-2-122, 10-M-STO-1-122, 10-M-STO-2-122, 10-M-ALG-1-122, 10-M-DGE-1-122, 10-M-DGE-1-122, 10-M-DGE-1-122, 10-M-DGE-1-122, 10-M-FAN-1-122, 10-M-ORS-1-122, 10-M-FAN-1-122, 10-M-GAN-1-122, 10-M-PGE-1-122, 10-M-DIM-1-122, 10-M-FAN-1-122, 10-M-ORS-1-122, and 10-M-ZTH-1-122: V + Ü (no information on language and number of weekly contact hours available)
- 10-M-ERG-P-122: M (no information on language and number of weekly contact hours available)

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

This module has the following 15 assessment components. To pass this module, students must pass one out of the 14 assessment components that are first in the list below and the assessment component that is last in the list below.

Assessment in module component 10-M-NUM-1-122: Numerische Mathematik 1 (Numerical Mathematics 1), in module component 10-M-NUM-2-122: Numerische Mathematik 2 (Numerical Mathematics 2), in module component 10-M-STO-1-122: Stochastik 1 (Stochastics 1), in module component 10-M-STO-2-122: Stochastik 2 (Stochastics 2), in module component 10-M-ALG-1-122: Einführung in die Algebra (Introduction to Algebra), in module component 10-M-DGE-1-122: Einführung in die Differentialgeometrie (Introduction to Differential Geometry), in module component 10-M-DGL-1-122: Gewöhnliche Differentialgleichungen (Ordinary Differential Equations), in module component 10-M-FTH-1-122: Einführung in die Funktionentheorie (Introduction to Complex Analysis), in module component 10-M-GAN-1-122: Geometrische Analysis (Geometric Analysis), in module component 10-M-PGE-1-122: Einführung in die Projektive Geometrie (Introduction to Projective Geometry), in module component 10-M-DIM-1-122: Einführung in die Diskrete Mathematik (Introduction to Discrete Mathematics), in module component 10-M-GRS-1-122: Operations Research, and in module component 10-M-ZTH-1-122: Einführung in die Zahlentheorie (Introduction to Number Theory) :

- 8 ECTS credits, pass / fail
- written examination (approx. 90 to 180 minutes). If announced by the lecturer, the written examination
 may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 30 minutes). The module component will also be considered successfully completed if it is selected as subject of the oral examination covering several modules (separate
 module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed.
- Language of assessment: German; English if agreed upon with examiner(s)
- Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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 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 anew.

Assessment in module component 10-M-SPZ-P-122: Prüfung in Spezialisierung Mathematik (Assessment in Advanced Mathematics)

- 4 ECTS credits, numerical grading
- oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in the two module components selected by students.
- Language of assessment: German; English if agreed upon with examiner(s)
- Only after successful completion of module components: Module component 10-M-SPZ-P can only be taken by students who passed the written examination in one of the other 14 module components.

Allocation of places

Additional information

Additional information on module duration: 1 to 2 semesters.

Workload

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Teaching cycle

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Bachelor's with 1 major Mathematics (2012)

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)

Bachelor's with 1 major Mathematics (2012)	012) JMU Würzburg • generated 26-Aug-2024 • exam. reg.	
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title Abbreviation					
Mathematics in Culture and Society 10-M-MKG-122-m01					10-M-MKG-122-m01
Module	e coord	inator		Module offered by	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathematics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
8	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
2 seme	ster	undergraduate	By way of exception assessments.	, additional prerequi	isites are listed in the section on
Conten	ts				
Historical and cultural development as well as social relevance of mathematics; more in-depth discussion of the fundamentals of mathematics, in particular in its relation to other sciences and humanities as well as to the image of mathematics in modern society. Intended learning outcomes Based on selected examples, the student has gained insight into the historical and cultural genesis of mathema- tical theories and their social relevance. He/she is able to present mathematical ideas and concepts to a general					
audien					
 Courses (type, number of weekly contact hours, language – if other than German) This module has 4 components; information on courses listed separately for each component. 10-M-GES-1-122, 10-M-MSC-1-122, and 10-M-SCH-1-122: V + Ü (no information on language and number of weekly contact hours available) 10-M-PRO-1-122: S (no information on language and number of weekly contact hours available) 					
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)					
This module has the following 4 assessment components. To pass the module as a whole students must pass two of the four assessment components.					

Assessment in module component 10-M-GES-1-122: Ausgewählte Kapitel aus der Geschichte der Mathematik (Selected Topics from the History of Mathematics), **in module component 10-M-MSC-1-122:** Mathematisches Schreiben (Mathematical Writing), and **in module component 10-M-SCH-1-122:** Schulmathematik vom höheren Standpunkt (School Mathematics from a Higher Perspective) **:**

- 4 ECTS credits, pass / fail
- project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course)
- Assessment will be offered in the semester in which the course is offered and in the subsequent semester.
- Language of assessment: German; English if agreed upon with examiner(s)
- Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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 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 anew.

Assessment in module component 10-M-PRO-1-122: Proseminar Mathematik (Proseminar Mathematics)

- 4 ECTS credits, pass / fail
- talk (approx. 60 to 180 minutes)
- Assessment will be offered in the semester in which the course is offered and in the subsequent semester.
- Language of assessment: German; English if agreed upon with examiner(s)
- Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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 stu-

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	data record Bachelor (180 ECTS) Mathematik - 2012	

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dents 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 anew.

Allocation of places

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Additional information

Additional information on module duration: 1 to 2 semesters.

Workload

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Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

First state examination for the teaching degree Gymnasium Mathematics (2012)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 29 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	Module title Abbreviation					
Additional Seminar in Mathematics 10-M-SE2-122-mo1					10-M-SE2-122-m01	
Module coordinator				Module offered by		
Dean of Studies Mathematik (Mathematics)			atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
5		successfully completed		•		
Duratio		Module level	Other prerequisites			
1 semester undergraduate		Certain prerequisites must be met to qualify for admission to as- sessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be con- sidered a declaration of will to seek admission to assessment. If stu- dents have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for as- sessment into effect. Students who meet all prerequisites will be admit- ted to assessment in the current or in the subsequent semester. For as- sessment at a later date, students will have to obtain the qualification for admission to assessment anew.				
Conten	its	<u> </u>		sinch ancw.		
		selected topic in mathen	natics.			
		ning outcomes				
ly in a s Course S (no in Method	scientif s (type, r nformat d of ass	ic discussion. number of weekly contact hours, l tion on SWS (weekly cont sessment (type, scope, langua	anguage — if other than Ger act hours) and cours	_{man)} e language available	/She is able to participate active e) ot every semester, information on whether	
talk (ap	oprox. 6	ble for bonus) 50 to 180 minutes) Issessment: German, Eng	lish if agreed upon w	ith the examiner		
Allocat	-					
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e	·			
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	e appea	ars in				
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)						



Application-oriented Subject

(30 ECTS credits)

Students must take one of the following application-oriented subjects, each with the specified mandatory courses and/or mandatory electives: Biologie (Biology), Chemie (Chemistry), Geographie (Geography), Informatik (Computer Science), Philosophie (Philosophy), Physik (Physics), Wirtschaftswissenschaft (Business Management and Economics).



Application-oriented Subject Biology

(40 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 32 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Biology Compulsory Electives

(20 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 33 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	Module title Abbreviation						
Genetics, Neurobiology, Behaviour					07-2A2GNV-072-m01		
Module coordinator				Module offered by			
Dean of Studies Biologie (Biology)				Faculty of Biology			
ECTS		od of grading	Only after succ. com				
6		rical grade					
Duratio		Module level	Other prerequisites				
1 seme:	ster	undergraduate	By way of exception assessments.	, additional prerequ	isites are listed in the section on		
Conten	ts						
Fundan	nental	principles of genetics, ne	urobiology and beha	vioural biology.			
Intende	ed learı	ning outcomes					
bases o cal meo molecu	of inher chanisr Ilar and	itance.] [Version 2: Stude	ents will understand ed in animal behaviou nce.]	that there are molec ur and will be able to	iour to the molecular and formal ular, cellular and system biologi- o relate animal behaviour to the		
					sted separately for each module		
• 0 • 0 Method module is Assess low. Un	 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 (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) 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 indi- 						
 vidual 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-3V-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 completion of the respective exercises as specified at the beginning of the course. Allocation of places Only as part of "spezielles Studienangebot": 10 places.							
Only as	part o	f "spezielles Studienange	ebot": 10 places.				
Additional information							

W	or	klo	ad	
				Ī

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2007) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major, 1 minor) Biology (Minor, 2008) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010) No final examination Special study offering (2010)

Module	e title				Abbreviation	
Mathe	natical	Biology and Biostatistic	CS		07-2BM-072-m01	
Module	e coord	inator		Module offered by		
holder	of the (Chair of Bioinformatics		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	· · · · · · · · · · · · · · · · · · ·		
4		rical grade		. <u></u>		
 Duratio		Module level	Other prerequisites			
1 semester undergraduate		Admission prerequi	Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the			
Conten	ts					
Fundar	nental	principles of the most im	portant mathematica	l and statistical met	hods in biology.	
		ning outcomes	·			
Studen	ts will				s, the interpretation of readings	
Course	S (type, r	number of weekly contact hours,	language — if other than Ger	rman)		
1) Ü + V	no info	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)	
module is	creditab	sessment (type, scope, langua le for bonus) nation (approx. 45 minut			ot every semester, information on whether	
Allocat						
		f "spezielles Studienang	ebot": 20 places			
		ormation	ebot . 30 places.			
Auunno	inat init					
	-					
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module	e appea	ars in				
	-	ree (1 major) Biochemist	•			
	-	ree (1 major) Biochemist				
	-	ree (1 major) Biology (20				
	Bachelor' degree (1 major) Biology (2007)					
	-	ree (1 major) Biology (20				
	-	ree (1 major) Mathematic				
	-	ree (1 major) Mathematic	-	12)		
	-	ree (1 major) Computatio				
		ree (1 major) Computatio		13)		
	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2008) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)					
		ination Special study off	•, ·			
ino inia	слан	mation opecial study off	(2010)			

Module title			Abbreviation			
Plant and Ani	mal Ecology			07-3A30E-102-m01		
Module coordinator			Module offered by			
Dean of Stud	es Biologie (Biology)		Faculty of Biology			
ECTS Meth	od of grading	Only after succ. com	npl. of module(s)			
6 nume	erical grade					
Duration	Module level	Other prerequisites				
1 semester	undergraduate	By way of exception assessments.	, additional prerequi	sites are listed in the section on		
Contents						
and biotic en as on the stru model conce	vironments. The module v acture and dynamics of po	vill focus on the funct pulations and ecosys e familiar with examp	tional adaptation to stems. Students will bles of research findi	and animals with their abiotic environmental conditions as well be introduced to fundamental ings and will acquire the funda- problems.		
Intended lear	ning outcomes					
portant abiot	ic and biotic factors that i nent. In addition, they un	nfluence the distribut	tion and frequency o	ecology and with the most im- f occurrence of organisms in has to the assessment of envi-		
Courses (type,	number of weekly contact hours, l	anguage — if other than Ger	man)			
component. • 07-3A3	0E-1-102: V + Ü (no inform	nation on SWS (weekl	y contact hours) and	sted separately for each module l course language available) d course language available)		
Method of as module is credita		ge — if other than German, e	examination offered — if no	t every semester, information on whether		
	tated otherwise, successf			e components as specified be- successful completion of all indi-		
 Assessment in module component o7-3A3OE-1-102: Animal Ecology Animal Ecology 3 ECTS, Method of grading: numerical grade written examination (approx. 45 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 o7-3A3OE-2-102: Plant Ecology Plant Ecology 3 ECTS, Method of grading: numerical grade written examination (approx. 45 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. 						
Allocation of	Allocation of places					
Only as part o	Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot.					
Additional in	formation					
Workload						

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Biology (2011)

Bachelor' degree (1 major) Biology (2010)

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

No final examination Special study offering (2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 38 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title Abbreviation					Abbreviation	
From (Cells to	Organisms for minor fie	ld of study		07-1A1ZO-NF-102-m	n01
Module coordinator				Module offered by		
Dean of Studies Biologie (Biology)		Faculty of Biology				
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate	By way of exception assessments.	, additional prereq	uisites are listed in th	ne section or
Conte	nts					
ferenc plants and hy thods. to the will ac organi	es and s). The so /pothes Using t phyloge quire th sms, wi	acroscopic structure be similarities between pro econd part will address es will be discussed and the examples of plants a enetic diversity of eukary fundamental knowled th morphology and cyto odule are relevant for bi	karyotic cells (bacteri one of the central issu d students will be intro nd animals, the subso votes. At the level of g ge necessary to unde logy being discussed	a, archaebacteria) a les of biology: evolu oduced to major ph equent module com roups in the plant a rstand the forms an in an evolutionary a	and eukaryotic cells (ution. Fundamental m ylogenetic reconstruct ponents will introduct and animal kingdoms d functions of anima and ecological contex	animals, nechanisms ction me- ce students , students l and plant
		ning outcomes				
mal ar liarity	of the s nd plant with the	pecific characteristics of cells Ability to recogn concepts of phylogene	the intracellular and ise evolution as the d tic relationships betw	extracellular structu riving force behind een plants/animals	the phylogeny of spe 5 Familiarity with the	s well as ani cies Fami- e distinguis-
mal ar liarity hing c se pla nents Course This m	of the s nd plant with the haracte nt and a and fun es (type, r nodule h	pecific characteristics of cells Ability to recogn concepts of phylogener ristics and major represent animal organisms that ar ctioning of microscopes number of weekly contact hours, nas 4 components; inform	the intracellular and ise evolution as the d tic relationships betw entatives of groups in re most suitable for pa language — if other than Ge mation on courses list	extracellular structu riving force behind een plants/animals the plant and anim articular scientific is rman) red separately for ea	ures of prokaryotes as the phylogeny of spe s Familiarity with the al kingdoms Ability ssues Familiarity wi ach component.	s well as ani ecies Fami- e distinguis- / to select th th the comp
mal ar liarity hing c se pla nents Course This m	of the s nd plant with the haracte nt and a and fun es (type, r odule h 07-1A1Z of week	pecific characteristics of cells Ability to recogn e concepts of phylogener ristics and major represe animal organisms that ar ctioning of microscopes	the intracellular and ise evolution as the d tic relationships betw entatives of groups in re most suitable for pa language — if other than Ge mation on courses list 072, and 07-1A1ZO-2E- le)	extracellular structu riving force behind een plants/animals the plant and anim articular scientific is rman) red separately for ea 102: V + Ü (no inforr	ures of prokaryotes as the phylogeny of spe s Familiarity with the al kingdoms Ability ssues Familiarity wi ach component. nation on language a	s well as ani ecies Fami- e distinguis- / to select th th the comp nd number
mal ar liarity hing c se pla nents Course This m Metho	of the s nd plant with the haracte nt and a and fun es (type, r odule h 07-1A1Z of week 07-1A1Z	pecific characteristics of cells Ability to recogn concepts of phylogener ristics and major represe animal organisms that ar ctioning of microscopes number of weekly contact hours, has 4 components; inforr O-3P-072, 07-1A1ZO-4T-0 ly contact hours availab	the intracellular and ise evolution as the d tic relationships betw entatives of groups in re most suitable for pa - language – if other than Ge mation on courses list 072, and 07-1A1ZO-2E- le) mation on language a	extracellular structu riving force behind een plants/animals the plant and anim articular scientific is rman) red separately for ea 102: V + Ü (no inform nd number of week	ures of prokaryotes as the phylogeny of spe s Familiarity with the al kingdoms Ability ssues Familiarity wi ach component. nation on language as	s well as ani ecies Fami- e distinguis- / to select th th the comp nd number ilable)
mal ar liarity hing c se pla nents Course This m Metho module	of the s ind plant with the haracte nt and a and fun es (type, r nodule h o7-1A1Z of week o7-1A1Z of of ass is creditab	pecific characteristics of cells Ability to recogn concepts of phylogenet ristics and major represe animal organisms that ar ctioning of microscopes number of weekly contact hours, has 4 components; inforr O-3P-072, 07-1A1ZO-4T-c ly contact hours availab O-NF-1Z-082: V (no infor	the intracellular and ise evolution as the d tic relationships betw entatives of groups in re most suitable for pa language — if other than Ge mation on courses list 072, and 07-1A1ZO-2E- le) mation on language a age — if other than German, ssment components. I	extracellular structu riving force behind een plants/animals the plant and anim articular scientific is rman) red separately for ea 102: V + Ü (no inforr nd number of week examination offered — if r	ures of prokaryotes as the phylogeny of spe s Familiarity with the al kingdoms Ability ssues Familiarity wir ach component. nation on language as act contact hours avai	s well as ani ecies Fami- e distinguis- / to select th th the comp nd number ilable) tion on whether
mal ar liarity hing c se planents Course This m Metho module This m these Assess Assess	of the s ind plant with the haracte nt and a and fun es (type, r iodule h 07-1A1Z of week 07-1A1Z of week 07-1A1Z of week 07-1A1Z of of ass is creditab is creditab is creditab assessr sment if 4 ECTS of written 4 ECTS of written Addition as succe	pecific characteristics of cells Ability to recogn e concepts of phylogenet ristics and major represe animal organisms that ar ctioning of microscopes number of weekly contact hours, has 4 components; inforr 0-3P-072, 07-1A1Z0-4T-c ly contact hours availab 0-NF-1Z-082: V (no infor cessment (type, scope, langu- te for bonus) has the following 4 assess nent components to pas nent components to pas nent components to pas nent components to pas nent component of the nent completion of the nodule component of credits, numerical gradir examination (approx. 60 nal prerequisites: admis- credits, numerical gradir examination (approx. 60 nal prerequisites: admis- ises as well as succession	the intracellular and ise evolution as the d tic relationships betw entatives of groups in re most suitable for pa language — if other than Ge mation on courses list 072, and 07-1A1ZO-2E- le) mation on language a age — if other than German, age — if other than German, ssment components. It is the module as a wh -1A1ZO-3P-072: Das F ng o minutes) sion prerequisite to as respective exercises. -1A1ZO-4T-072: Das T ng o minutes) sion prerequisite to as	extracellular structu riving force behind een plants/animals the plant and anim articular scientific is rman) red separately for ea 102: V + Ü (no inforr nd number of week examination offered — if r Jnless stated other ole. flanzenreich (The F ssessment: regular ierreich (The Anima	ures of prokaryotes as the phylogeny of spe s Familiarity with the al kingdoms Ability ssues Familiarity wir ach component. nation on language as (ly contact hours avai not every semester, informat wise, students must p lant Kingdom) attendance of exercis l Kingdom) attendance of and pa	s well as ani ecies Fami- e distinguis- / to select th th the comp nd number ilable) tion on whether pass all of ses as well

Assessment in module component o7-1A1ZO-NF-1Z-082: Die Zelle für das Nebenfach Biologie (The Cell for Biology Minors)

• 1 ECTS credit, numerical grading

• written examination (approx. 60 minutes) including multiple choice questions

- Assessment in module component 07-1A1ZO-2E-102: Evolution
 - 1 ECTS credit, pass / fail
 - written examination (approx. 30 minutes, including multiple choice questions)
 - Additional prerequisites: admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.

Allocation of places

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Additional information

Workload

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Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 40 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation
Developmental Biology of Animals					07-3A3EBIOT-102-m01
Module coordinator				Module offered by	
Dean of Studies Biologie (Biology)				Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
4		rical grade			
Duratio		Module level	Other prerequisites		
1 seme	ster	undergraduate	Admission prerequi	site to assessment: pletion of the respec	regular attendance of exercises ctive exercises as specified at the
Conten	ts				
biology bians, of sper organo	v. The fo nemato matozo genesis	ollowing topics will be co odes, Drosophila, mouse) oa and ova), differential g	vered: early embryon and relevance for th ene expression, cell	ic development of va e systematics of ani growth and molecula	vledge on animal developmental arious model organisms (amphi- mals, gametogenesis (productior ar regulation of cell development ng, metamorphosis (amphibians,
Intende	ed learı	ning outcomes			
don, ca 7. Phys Course V + Ü (r	incer an iologic s (type, n no infor	nd stem cells as well as g al aspects of the develop number of weekly contact hours, l mation on SWS (weekly o	ametes. 6. Interrelat mental processes di anguage — if other than Ger contact hours) and co	ions between ontoge scussed. ^{man)} ourse language avail	
module is	creditab	le for bonus)			ot every semester, information on whether
written	exami	nation (approx. 30 to 60	minutes) including m	ultiple choice quest	ions
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	in in			
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Biomedicine (2009) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)					
Bachel	or's de	gree (1 major, 1 minor) Bi	ology (Minor, 2010)		

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 41 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Biology Compulsory Electives 2

(20 ECTS credits)

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 list below. Modules from the areas "Spezielle Biowissenschaften I / II" ("Specific Biosciences I / II") may only be used by students who achieved no less than 14 ECTS credits in the area of mandatory electives 1 beforehand.

Module title					Abbreviation
Functional Morphology of arthropods					07-4S1NVO3-092-m01
Module coordinator				Module offered by	l
holder of the Chair of Zoology III				Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate		pletion of the respec	regular attendance of exercises ctive exercises as specified at the
Conten	ts				
Morph	ology, a	anatomy, phylogeny and	ecology of arthropod	5.	
Intend	ed lear	ning outcomes			
		able to explain arthropod ecosystems.	radiations in a funct	ional context as well	l as to explain the importance of
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
V + Ü (I	no infoi	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
term pa	aper (a	oprox. 5 to 10 pages)			
Allocat	ion of _l	olaces			
allocat logy) w ces wil 5% of p ject Bio themat ject Bio ble in o the oth places course dure, a tive mo they be plicant of ECTS all moo themat firstly, and, se positio cording qualita followi compo ces wil	ed as for ith 180 l be allo blaces (blogie (cics and blogy (a blogy (a bl	bllows: Places will primar ECTS credits. Should the pocated to students of the a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemat is well as potentially to st ota exceed the number of ta. Should there be, within will be a uniform regulatin nodule component that a ats who already have suc ill be given preferential c available. Selection proce ous academic achievements is they have achieved and mponents in the subject thematics)) at the time of ing to their average grade a cacording to their total hird ranking will be calcu tas: Quota 1 (50% of plac of the Faculty of Biology; a pocated by lot. Quota 2 (29)	ily be allocated to stue module be used in of Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 E0 tudents of other 'imper applications, the rem in one module comport on for the courses of re concerned will be cessfully completed a onsideration. A waiti ess group 1 (95%): Pla ents. For this purpose d their average grade of Biologie (Biology) of application. This will e weighted according number of ECTS credit alted as the sum of the plicants with the sam Selection process gra- ses): total number of F among applicants with 5% of places): number	udents of the Bachel other subjects, there ubject Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part of orting' subjects). Sh naining places will b onent, several course one module compor allocated in a standa at least one other mo ng list will be mainta aces will primarily be of all assessments t (excluding Chemie (G l be done as follows: to the number of EC its achieved (quantif hese two rankings, a ne ranking, places w oup 2 (5%): Places w ECTS credits already the same number er of subject semeste	f available places, places will be lor's degree subject Biologie (Bio ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- egree subjects Computational Ma of the application-oriented sub- ould the number of places availa- be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number taken during their studies or of Chemistry), Physik (Physics), Ma : First, applicants will be ranked, TS credits (qualitative ranking) tative ranking). The applicants' and places will be allocated ac- vill be allocated according to the achieved in modules/module of ECTS credits achieved, pla- ers of the respective applicant; located by lot. Quota 3 (25% of

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places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

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Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Biology (2011)
Bachelor' degree (1 major) Biology (2007)
Bachelor' degree (1 major) Biology (2010)
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Mathematics (2007)
Bachelor' degree (1 major) Computational Mathematics (2012)
Bachelor' degree (1 major) Computational Mathematics (2013)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2008)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 44 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation
Basic	Physiol	ogy of Animals for mind	or field of study		07-2A2TP-NF-082-m01
Module coordinator Mod			Module offere	d by	
Dean of Studies Biologie (Biology)				Faculty of Biolo	
ECTS	1	od of grading	Only after succ. cor	· · · ·	
3		rical grade			, ,
Durati		Module level	Other prerequisites	i	
1 seme	ester	undergraduate	Admission prerequi	site to assessm pletion of the re	ent: regular attendance of exercises espective exercises as specified at the
Conte	nts				
vide tł	nem wit	h an opportunity to dev	elop the fundamental	skills for workin	parative plant physiology and will pro- g in a physiological laboratory. The environment of animals.
Intend	led lear	ning outcomes			
					and regulation of organisms. They ha- I presentation of scientific results.
Course	es (type, 1	number of weekly contact hours	s, language — if other than Ge	rman)	
V + Ü ((no info	rmation on SWS (weekl	y contact hours) and co	ourse language	available)
		sessment (type, scope, lang ble for bonus)	uage — if other than German,	examination offered	— if not every semester, information on whether
writter	n exami	nation (approx. 60 min	utes, word problems a	nd/or multiple c	hoice questions)
Alloca	tion of	places			
Additi	onal inf	ormation			
Workl	oad				
Teach	ing cycl	e			
Referr	ed to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)	
Modu	le appea	ars in			
Bache Bache Bache Bache	lor' deg lor' deg lor' deg lor' deg	rree (1 major) Mathemat rree (1 major) Mathemat rree (1 major) Computat rree (1 major) Computat gree (1 major, 1 minor) gree (1 major, 1 minor)	ics (2013) ional Mathematics (20 ional Mathematics (20 Biology (Minor, 2008)		

Modul	Module title Abbreviation					
Basic F	Physiol	ogy of Prokaryotes for m	inor field of study		07-2A2PPR-NF-082-m01	
Modul	e coord	inator		Module offered by		
Dean o	of Studio	es Biologie (Biology)		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
3	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
	odule w iversity		h the principles of pr	okaryotic physiolog	y. It will discuss prokaryotic meta-	
Intend	ed lear	ning outcomes				
					regulation of organisms. They ha- sentation of scientific results.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
V + Ü (no infoi	mation on SWS (weekly o	contact hours) and co	ourse language avai	lable)	
module i	s creditab	le for bonus)			ot every semester, information on whether	
		nation (approx. 60 minut	es) including multiple	e choice questions		
Allocat	tion of p	Dlaces				
Additio	onal inf	ormation				
Worklo	ad					
feachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module appears in						
	Bachelor' degree (1 major) Mathematics (2012)					
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012)						
	Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)					
	-			<i>י</i> כי		
	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2008) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)					

Module title Abbreviation					
Basic F	Physiol	ogy of Plants for minor f	ield of study		07-2A2PPF-NF-082-m01
Modul	e coord	inator		Module offered by	,
Dean c	Dean of Studies Biologie (Biology)			Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
3	nume	rical grade			
Duratio		Module level	Other prerequisites		
1 seme	ester	undergraduate		pletion of the respe	regular attendance of exercises active exercises as specified at the
Conter	nts				
vide th	em wit		lop the fundamental	skills for working in	tive plant physiology and will pro- a physiological laboratory. The ronment of plants.
Intend	ed lear	ning outcomes			
		•	e , ,	-	regulation of organisms. They ha- esentation of scientific results.
Course	es (type, r	number of weekly contact hours,	language — if other than Ge	rman)	
V + Ü (no info	rmation on SWS (weekly	contact hours) and co	ourse language avai	ilable)
		s essment (type, scope, langu ole for bonus)	age — if other than German,	examination offered — if n	not every semester, information on whether
written	ı exami	nation (approx. 45 minu	tes)		
Allocat	tion of _l	places			
Additio	onal inf	ormation			
Worklo	oad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulatio	ns for teaching-degree progra	immes)	
Modul	e appea	ars in			
Bachel Bachel Bachel Bachel	Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2008) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)				

Module	e title				Abbreviation
Genes,	Molec	ules, Technologies			07-3A3GMT-102-m01
Module	e coord	inator		Module offered by	
Dean of Studies Biologie (Biology)			Faculty of Biology		
ECTS	Methe	hod of grading Only after succ. compl. of module		npl. of module(s)	
6	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 semester undergraduate					
Conten	ts				

The module component Spezielle Genetik (Special Genetics) will build on Einführung in die Genetik (Introduction to Genetics) and will deepen the students' knowledge of topics from the following areas: structure and evolution of the eukaryotic genome, regulatory RNA, epigenetically and evolutionarily significant genetic mechanisms. The section will also focus on methods of gene expression profiling, reverse genetics and modern methods of gene function and gene sequence analysis. In the module component Einführung in die Bioinformatik (Introduction to Bioinformatics), students will acquire an overview of major areas in the field of bioinformatics: protein sequence and protein domain analysis, phylogeny and evolution of sequences, protein structure, RNA/DNA sequences and structures, cellular networks (regulation, metabolism) and systems biology. In the module component Einführung in die Biotechnologie (Introduction to Biotechnology), students will acquire an overview of the following topics: history of biotechnology, DNA and RNA technologies, recombinant antibodies, molecular diagnostics, nanobiotechnology, biomaterials, bioprocess engineering, microbial biotechnology, transgenic animals and plants, microfluidics. The module component Einführung in die Pharmakokinetik (Introduction to Pharmacokinetics) will provide students with an overview of the rational development of drugs and active agents. The module component will discuss an important aspect for biologists in more detail: the optimisation of the pharmacokinetics of small molecules and proteins. Pharmacokinetics describes the uptake, distribution, metabolism and elimination of a drug or xenobiotic in an organism.

Intended learning outcomes

Module component *Spezielle Genetik* (*Special Genetics*): Advanced knowledge on genome evolution and the regulation of gene expression. Essential knowledge on current methods in genetics. Module component *Einführung in die Biotechnologie (Introduction to Biotechnology*): Students will acquire an overview of both traditional and modern methods in biotechnology and will become familiar with fundamental topics in biotechnology. Module component *Einführung in die Biotechnologie (Introduction to Biotechnology*): Students will acquire an overview of both traditional and modern methods in biotechnology and will become familiar with fundamental topics in biotechnology. Module component *Einführung in die Pharmakokinetik (Introduction to Pharmacokinetics*): Students will acquire an overview of the fundamental principles of the development and review of active agents in research, clinical practice and the pharmaceutical industry. Optimisation of active agents with regard to absorption, distribution, metabolism and elimination takes place during the early stages of active agent development. The course will equip students with fundamental knowledge that will enable them to predict, on the basis of the structure and physicochemical properties of a small molecule or protein, whether the molecule or protein is suitable as an active agent as well as to predict the fate of the respective active agent in an organism.

Courses (type, number of weekly contact hours, language - if other than German)

This module has 4 components; information on courses listed separately for each component.

• 07-3A3GMT-1-102, 07-3A3GMT-2-102, 07-3A3GMT-3-102, and 07-3A3GMT-4-102: V (no information on language and number of weekly contact hours available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

This module has the following 4 assessment components. Unless stated otherwise, students must pass all of these assessment components to pass the module as a whole.

Assessment in module component 07-3A3GMT-1-102: Genetik (Genetics), in module component 07-3A3GM-T-2-102: Bioinformatik (Bioinformatics), in module component 07-3A3GMT-3-102: Biotechnologie (Biotechnology), and in module component 07-3A3GMT-4-102: Pharmakokinetik (Pharmacokinetics) :

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	data record Bachelor (180 ECTS) Mathematik - 2012	

• 1.5 ECTS credits, numerical grading

• written examination (approx. 30 minutes, including multiple choice questions)

Allocation of places

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Additional information

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Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Biology (2011)

Bachelor' degree (1 major) Biology (2010)

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 49 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation
Princip	les of I	Biochemistry			07-3A3BC-102-m01
Module	e coord	linator		Module offered by	۲
holder	ofthe	Chair of Plant Physiol	ogy and Biophysics	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. cor	mpl. of module(s)	
4		rical grade		•	
Duratio		Module level	Other prerequisites	5	
1 seme	ster	undergraduate		pletion of the resp	: regular attendance of exercises ective exercises as specified at the
Conten	Its				
dents v will bee transla formed	with de come fa tion) a l on sel	eper insights into the amiliar with fundame nd the biochemistry o ected topics that wer	e molecular biology and b ntal principles of molecu of carbohydrates, lipids,	biochemistry of prol Ilar biology (replica proteins and nuclei re. The exercise will	oint, the lecture will provide stu- karyotes and eukaryotes. Students tion, transcription, splicing and ic acids. Experiments will be per- cover practical aspects of lab work n, protein isolation).
Intend	ed lear	ning outcomes			
Studen	its are f	familiar with the fund	amental principles of bio	ochemistry.	
Course	S (type, 1	number of weekly contact ho	ours, language — if other than Ge	erman)	
	-		ekly contact hours) and co		ilable)
		s essment (type, scope, la ble for bonus)	anguage — if other than German,	examination offered — if	not every semester, information on whether
written	exami	nation (approx. 30 to	60 minutes) including m	nultiple choice ques	stions
Allocat	ion of	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cvcl	e			
	0.7				
Referre	ed to in	LPO I (examination regul	ations for teaching-degree progra	ammes)	
Module		ars in			
		ree (1 major) Biology	(2011)		
	-	ree (1 major) Biology			
	-	ree (1 major) Mathem			
Bachel	or' deg	ree (1 major) Mathem	natics (2013)		
Bachel	or' deg	ree (1 major) Comput	ational Mathematics (20	012)	
Bachel	or' deg	ree (1 major) Comput	ational Mathematics (20	01 <u>3</u>)	
D I I	or's do	gree (1 major, 1 mino	r) Dialagy (Minar aara)		

Module title				Abbreviation		
The Flo	The Flora of Germany 07-4A4FL-102-m01					
Module coordinator				Module offered by		
holder gy	of the C	Chair of Ecophysiology a	and Vegetation Ecolo-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
7	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	By way of exception assessments.	, additional prerequi	isites are listed in th	e section on
Conten	ts					
will acc gical ar will der using d racteris to typic commo cies-sp site. Ha cussed door fa Intende Studen flowerin	uire ar no econ monstra lichotor stics an ral habi on as we ecific c abitat e . The m cilities ed learr ts have ng plan	ill discuss the fundame overview of the major omic importance. Using ate how dichotomous key nous keys. Identifying p d will become familiar w tats in the Botanical Ga ell as scientific names of haracteristics of these p cological, geobotanical odule will also include and greenhouses to he hing outcomes acquired knowledge and ts. They are familiar wit	flowering plants to be g the field guide <i>Flora</i> eys are used, and stud olants, students will le with the respective tern orden and the vicinity co of the plants found and olants. Students will p , climatic as well as co sessions at the Botani lp students acquire sp	found in the tempera von Deutschland by s lents will practise ide arn how to identify n minology. The modul of Würzburg. Student d will be introduced t ractise using field gu onservation-relevant ical Garden of the Un recies identification s	ate zone as well as t Schmeil-Fitschen, th entifying freshly-gath najor morphological le will also include fi s will become famili to the family- as well uides and identificat characteristics will a niversity of Würzburg skills.	heir ecolo- ne course nered plants plant cha- ield trips far with the as spe- ion keys on also be dis- g with its out-
		erbaria. umber of weekly contact hours.	Janguago if other than Cor	(man)		
		omprises 2 module con			sted senarately for e	ach module
compoi • o	nent. 7-4A4F	L-1-102: V + Ü (no inform L-2-102: E (no informati	nation on SWS (weekly	y contact hours) and	course language av	ailable)
		e essment (type, scope, langu le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informat	ion on whether
	less st	this module comprises ated otherwise, success nents.				
of Germ	nany ECTS, vritten e veighte ssessn Other pr essful e arium) ment ir ECTS, og (app ssessn	Method of grading: num examination (approx. 49 d 1:1 nent offered: once a yea rerequisites: Admission completion of the respe as specified at the begin module component o7 Method of grading: (not rox. 1 to 2 pages per fie nent offered: once a yea or Mathematics (2012)	nerical grade 5 minutes) and practic ar, summer semester n prerequisite to asses ctive exercises (particu inning of the course. r-4A4FL-2-102: Field Ex t) successfully complet ld trip) ar, summer semester	al identification assi ssment: regular atte ular emphasis to be p ccursions on the Flor	ignment (approx. 45 ndance of exercises placed on the setting a of Germany	minutes), s and suc-
	~)	. ,	-	achelor (180 ECTS) Mathemat	-	



Allocation of places

Number of places: 180. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major, 1 minor) Biology (Minor, 2010)

Modul	e title				Abbreviation	
The Fa	una of (Germany			07-4A4FA-102-m01	
Module coordinator				Module offered by		
holder of the Chair of Animal Ecology an			and Tropical Biology	Faculty of Biology		
ECTS	1	od of grading	Only after succ. con			
7		rical grade		•		
Durati		Module level	Other prerequisites	;		
1 seme	ester	undergraduate	By way of exception assessments.	, additional prerequi	sites are listed in the sectio	n on
Conter	nts					
They w cordin will be provid	vill acqu g of bio taxon-s e stude	ire a fundamental know diversity and will practis specific and will represe	ledge of the systemat e identifying species, nt specific habitats or to consolidate the kno	ics and taxonomy as using specimens of lifestyles. Field exer owledge and skills th	to be found in Central Europ well as on the quantitative animals. Selection of speci cises in a variety of habitats rey acquired in the lab by id	re- mens s will
		ning outcomes				
verteb their fa the bio	rates) a aunas a ology ar	nd use identification key nd phenology. On the ba	ys. They are familiar w asis of the morpholog	vith selected Central y and habitats of spe	ligenous fauna (vertebrates European habitats as well a ecies, students are able to p t whether they function as in	is predict
Course	es (type, r	number of weekly contact hours,	language — if other than Ge	rman)		
compo • (• (• (onent. 07-4A4F 07-4A4F d of as s	A-1-102: V + Ü (no inform A-2-102: E (no informati	nation on SWS (weekl on on SWS (weekly cc	y contact hours) and ontact hours) and cou	sted separately for each mo course language available) urse language available) t every semester, information on who)
low. U		ated otherwise, success			e components as specified l successful completion of all	
Fauna • 2 • 4 • 7 • 6 • 7 • 7 • 7 • 7 • 7 • 7 • 7 • 7	of Gern 4 ECTS, written weighte Assessr Other p cessful carium) sment i 3 ECTS, og (app Assessr tion of pla er of pla	Method of grading: num examination (approx. 45 d 1:1 nent offered: once a yea rerequisites: Admission completion of the respec as specified at the begin module component o7 Method of grading: (not prox. 1 to 2 pages per fiel nent offered: once a yea blaces cees: 180. Should the nu pollows: Places will prima	erical grade minutes) and practic r, summer semester prerequisite to asse trive exercises (partic nning of the course. -4A4FA-2-102: Field E) successfully comple d trip) r, summer semester mber of applications rily be allocated to st	al identification ass ssment: regular atte ular emphasis to be xcursions on the Fau ted exceed the number o udents of the Bachel	of available places, places w or's degree subject Biologie	es), uc- er- vill be e (Bio-
		ECTS credits. Should th	JMU Würzburg	• generated 26-Aug-2024 • G achelor (180 ECTS) Mathema		

ces will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	
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Module title				Abbreviation
Neurobiology	1			07-4S1NVO1-102-m01
Module coord	inator		Module offered by	
holder of the	Chair of Genetics		Faculty of Biology	
ECTS Metho	od of grading	Only after succ. com	pl. of module(s)	
5 nume	rical grade		-	
Duration	Module level	Other prerequisites		
1 semester	undergraduate	Admission prerequines as specified at the b		regular attendance of lab course rse.
Contents		· · ·		
Neurobiology	and methods in neurobio	ology, using Drosophi	la as a neurogenetio	c model system.
	ning outcomes			
	e acquired an advanced k nethods in neurobiology.	knowledge of the neu	robiology of a mode	l organism and are able to apply
Courses (type, r	number of weekly contact hours, I	language — if other than Ger	man)	
P (no informa	tion on SWS (weekly cont	tact hours) and cours	e language available	e)
Method of as	Sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
module is creditat	ole for bonus)			
c) oral examir didates (appr	nation of one candidate e	ach (approx. 30 minu date) or e) presentati	tes) or d) oral exam on (approx. 20 to 30) log (approx. 10 to 20 pages) or ination in groups of up to 3 can- o minutes); students will be infor-
Allocation of		· · ·		
allocated as fi logy) with 180 ces will be all 5% of places ject Biologie (thematics and ject Biology (a ble in one quo the other quo places, there courses of a n dure, applican tive module w they become plicants' prev of ECTS credit all module co	ollows: Places will primar ECTS credits. Should the ocated to students of the (a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemat as well as potentially to st ota exceed the number of ta. Should there be, within will be a uniform regulatin nodule component that a nots who already have suc vill be given preferential of available. Selection proce- ious academic achievem s they have achieved and mponents in the subject	rily be allocated to stue e module be used in of Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 E0 tudents of other 'imper applications, the rem in one module comport on for the courses of re concerned will be cessfully completed a consideration. A waiti ess group 1 (95%): Pla ents. For this purposed their average grade of Biologie (Biology)	udents of the Bache other subjects, there ubject Biologie (Biol allocated to student of the Bachelor's de CTS credits, as part of prting' subjects). Sh naining places will b onent, several course one module comport allocated in a standa at least one other mo ng list will be mainta aces will primarily be aces will primarily be of all assessments to (excluding Chemie (f available places, places will be lor's degree subject Biologie (Bio- e will be two quotas: 95% of pla- ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- egree subjects Computational Ma- of the application-oriented sub- ould the number of places availa- be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number taken during their studies or of Chemistry), Physik (Physics), Ma- : First, applicants will be ranked,

and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant;

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 55 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Biology (2010)

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 56 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module ti	itle			Abbreviation
Integrativ	ve Behavioral Biology			07-4S1NVO2-102-m01
Module coordinator Mod			Module offered by	
	the Chair of Behavioral Physic	ology and Sociobio-	Faculty of Biology	
logy	· · · · · · · · · · · · · · · · · · ·	с, <u>с</u>	,	
	Nethod of grading	Only after succ. con	npl. of module(s)	
-	umerical grade			
Duration	Module level	Other prerequisites		
1 semeste	er undergraduate		pletion of the respec	regular attendance of exercises ctive exercises as specified at the
Contents				
sing of ol		inisation of behaviou		oment, perception and proces- oehaviour, reproductive beha-
Intended	learning outcomes			
sentation	s on current studies on releva	ant topics.		ogy and are able to deliver pre-
	type, number of weekly contact hours, l			
	information on SWS (weekly o			
	of assessment (type, scope, langua editable for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
c) oral ex didates (a	amination of one candidate e	ach (approx. 30 minu date) or e) presentati	ites) or d) oral exami on (approx. 20 to 30) log (approx. 10 to 20 pages) or ination in groups of up to 3 can- minutes); students will be infor-
	n of places	·		
allocated logy) with ces will b 5% of pla ject Biolo thematics ject Biolo ble in one the other places, th courses of dure, app tive modu they becc plicants' of ECTS c all modul thematik firstly, acc and, secc position i	as follows: Places will primar 180 ECTS credits. Should the e allocated to students of the ces (a minimum of one partic gie (Biology) with 60 ECTS cre s and Mathematik (Mathemat gy (as well as potentially to st e quota exceed the number of quota. Should there be, within here will be a uniform regulation of a module component that a plicants who already have suc ule will be given preferential come available. Selection proce previous academic achievement redits they have achieved and e components in the subject (Mathematics)) at the time of cording to their average grade andly, according to their total in a third ranking will be calcu	ily be allocated to struct module be used in or Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 E0 tudents of other 'imp applications, the ren in one module composi- on for the courses of re concerned will be cessfully completed a onsideration. A waiti ess group 1 (95%): Pla- ents. For this purpose I their average grade of Biologie (Biology) application. This will e weighted according number of ECTS cred lated as the sum of t	udents of the Bachel other subjects, there ubject Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part of orting' subjects). Shi naining places will b onent, several course one module compor allocated in a standa at least one other mo ng list will be mainta aces will primarily be e, applicants will be of all assessments t (excluding Chemie (C l be done as follows: to the number of EC its achieved (quantit hese two rankings, a	f available places, places will be lor's degree subject Biologie (Bio- will be two quotas: 95% of pla- ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- gree subjects Computational Ma- of the application-oriented sub- ould the number of places availa- be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number aken during their studies or of Chemistry), Physik (Physics), Ma- e First, applicants will be ranked, TS credits (qualitative ranking) tative ranking). The applicants' and places will be allocated ac- vill be allocated according to the

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 57 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 58 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	title				Abbreviation
Basics i	in Ligh	it- and Electron-Micros	scopy		07-4S1MZ1-102-m01
Module	coord	inator		Module offered by	1
head of	the D	epartment of Electronr	nicroscopy	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites	;	
1 semes	ster	undergraduate		pletion of the respe	regular attendance of exercises ctive exercises as specified at th
Conten	ts		·		
Fundam	nental	principles of confocal	laser scanning microsc	opy and electron mi	croscopy.
Intende	d lear	ning outcomes			
Student	ts have	e acquired theoretical	knowledge and practica	al skills in the area o	f light and electron microscopy.
Courses	5 (type, r	number of weekly contact hou	ırs, language — if other than Ge	rman)	
V + Ü (n	o info	rmation on SWS (week	ly contact hours) and c	ourse language avai	lable)
		sessment (type, scope, lan ble for bonus)	guage — if other than German,	examination offered — if n	ot every semester, information on whether
written	exami	nation (approx. 30 to 6	60 minutes)		
Allocati	ion of _l	places			
allocate logy) wi ces will 5% of p ject Bio themati ject Bio ble in o the othe places, courses dure, ap tive mo they be	ed as for the second second be all laces of logie (ics and logy (a ne quo there s of a n oplicar dule w come a	ollows: Places will prir ECTS credits. Should ocated to students of t (a minimum of one par Biology) with 60 ECTS d Mathematik (Mathen as well as potentially to ba exceed the number ta. Should there be, w will be a uniform regul nodule component that this who already have s vill be given preferentia available. Selection pr	narily be allocated to st the module be used in the Bachelor's degree s rticipant in total) will be credits and to students natics), each with 180 E o students of other 'imp r of applications, the re- ithin one module comp- ation for the courses of at are concerned will be successfully completed al consideration. A waitio rocess group 1 (95%): Pl	udents of the Bache other subjects, there ubject Biologie (Biol allocated to studen of the Bachelor's de CTS credits, as part orting' subjects). Sh maining places will h onent, several cours one module compo allocated in a stand at least one other m ing list will be maint aces will primarily b	f available places, places will be elor's degree subject Biologie (Bio e will be two quotas: 95% of pla- logy) with 180 ECTS credits and ts of the Bachelor's degree sub- egree subjects Computational Ma of the application-oriented sub- nould the number of places available could the number of places available allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as re allocated according to the ap- ranked according to the number

of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters of the respective applicant; among applicants with the same number of subject semesters of the respective applicant; among applicants with the same number of subject semesters of the respective applicant; among applicants with the same number of subject semesters of the respective applicant; among applicants with the same number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.
	data record Bachelor (180 ECTS) Mathematik - 2012

Additional information
Workload
Teaching cycle
Referred to in LPO I (examination regulations for teaching-degree programmes)
Module appears in
Bachelor' degree (1 major) Biology (2011)
Bachelor' degree (1 major) Biology (2010)
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Physics (2010)
Bachelor' degree (1 major) Nanostructure Technology (2010)
Bachelor' degree (1 major) Nanostructure Technology (2012)
Bachelor' degree (1 major) Computational Mathematics (2012)
Bachelor' degree (1 major) Computational Mathematics (2013)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Modul	e title				Abbreviation
Analys	is of Cl	nromosomes			07-4S1MZ2-102-m01
Modul	e coord	inator		Module offered by	
head o	of the D	epartment of Electron	microscopy	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 semester undergraduate		and successful com	Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.		
Conter	nts	•			
Overvi	ew of th	ne structure of chromo	osomes of somatic and n	neiotic cells.	
Intended learning outcomes					
Students are able to analyse chromosomal structures.					

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

written examination (approx. 30 to 60 minutes)

Allocation of places

Number of places: 18. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

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Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 62 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation
Specia	l Bioin	formatics 1			07-4S1MZ6-102-m01
Module	e coord	linator		Module offered by	
holder	ofthe	Chair of Bioinformatics		Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. compl. of module(s)		
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
and			pletion of the respec	regular attendance of exercises tive exercises as specified at the	
Conten	nts	•			
E					(matheada and markers) from

Fundamental principles of the tree of life, fundamental principles of phylogenetics (methods and markers), fundamental principles of evolutionary biology (concepts), sequence analysis, RNA structure prediction, phylogenetic reconstruction.

Intended learning outcomes

Students are able to use software and databases for sequence analysis, RNA structure prediction and phylogenetic reconstruction.

Courses (type, number of weekly contact hours, language - if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

log (approx. 10 to 20 pages)

Language of assessment: German or English

Allocation of places

Number of places: 20. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, pla-

Bachelor's with 1 major Mathematics (2012) JMU Würzburg • generated 26-Aug-2024 • exam. reg.		page 63 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

ces will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

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Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Physics (2010) Bachelor' degree (1 major) Nanostructure Technology (2010) Bachelor' degree (1 major) Nanostructure Technology (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 64 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation
Molecu	lar mo	delling - From DNA to pro	otein		07-4S1PS1-102-m01
Module coordinator		Module offered by	I		
holder	of the (Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate		pletion of the respec	regular attendance of exercises ctive exercises as specified at the
Conten	ts				
	s as we	ell as on the search for ar			function of nucleic acids and molecules using databases and
		ning outcomes			
		e acquired a specialist kn rk with relevant database		ture-function relation	nships of macromolecules and
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
compu	terised	practical examination (a	pprox. 6 hours)		
Allocat	ion of p	olaces	<u></u>		
allocate logy) w ces will 5% of p ject Bic themat ject Bic ble in c the oth places, courses dure, a tive mo they be plicant of ECTS all moc themat firstly, a and, se positio cording qualita followin compo	ed as fo ith 180 l be allo places (plogie (l ics and plogy (a one quo there v s of a m pplicar odule w come a s' previ c credit: lule cor ik (Mat accordi condly n in a t g to this tive rar ng quo nents o	bllows: Places will primar ECTS credits. Should the pocated to students of the a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemat s well as potentially to st the acceed the number of the the acceed the number of the the acceed the number of the the acceed the number of the faculty of Biology; acceed the faculty of Biolog	ily be allocated to stue module be used in of Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 EG udents of other 'impo- applications, the rem n one module compo- on for the courses of re concerned will be cessfully completed a onsideration. A waiti ess group 1 (95%): Pla- ents. For this purpose I their average grade of Biologie (Biology) application. This will e weighted according number of ECTS credi lated as the sum of the plicants with the sam Selection process gr es): total number of E among applicants with	udents of the Bachel other subjects, there ubject Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part of orting' subjects). Sho naining places will b onent, several course one module compor allocated in a standa at least one other mod at least one other mod ng list will be mainta aces will primarily be of all assessments t (excluding Chemie (C be done as follows: to the number of EC its achieved (quantit hese two rankings, a ne ranking, places w oup 2 (5%): Places w ECTS credits already th the same number	available places, places will be lor's degree subject Biologie (Bio ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- egree subjects Computational Ma of the application-oriented sub- ould the number of places available and the number of places available e allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number taken during their studies or of Chemistry), Physik (Physics), Ma- : First, applicants will be ranked, TS credits (qualitative ranking) tative ranking). The applicants' and places will be allocated ac- vill be allocated according to the achieved in modules/module of ECTS credits achieved, pla- ers of the respective applicant;

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among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Biology (2011)

Bachelor' degree (1 major) Biology (2010)

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 66 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title			Abbreviation		
Introduction	to Methods in Plant Ecop	hysiology		07-4S1PS2-102-m01	
Module coo	rdinator		Module offered by	·	
holder of th	e Chair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS Met	hod of grading	Only after succ. con	mpl. of module(s)		
5 num	nerical grade				
Duration	Module level	Other prerequisites			
1 semester	undergraduate	Admission prerequisite to assessment: regular attendance of exercises and seminar as well as successful completion of the respective exercises as specified at the beginning of the course.			
Contents					
	periments to introduce stue xperimental findings in a c			lant ecophysiology as well as dis	
Intended lea	arning outcomes				
	e able to use current metho se in a scientific context.	ods in plant ecophysi	ology as well as to d	locument experimental findings	
Courses (type	e, number of weekly contact hours,	language — if other than Ger	rman)		
Ü + S (no inf	ormation on SWS (weekly	contact hours) and co	ourse language avail	lable)	
module is credit	able for bonus)	age — if other than German, o	examination offered — if no	ot every semester, information on whether	
log (approx.	10 to 20 pages)				
Allocation of places Allocation of places 15. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of pla- ces will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree sub- ject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree sub- ject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places availa- ble in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this proce- dure, applicants who already have successfully completed at least one other module component of the respec- tive module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the ap- plicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Ma- thematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, a					

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 68 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation
Pharmaceutical Drugs in Plants			07-4S1PS3-102-m01		
Module coordinator				Module offered by	
holder	of the (Chair of Pharmaceutical E	Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	compl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate	Admission prerequisite to assessment: regular attendance of exercises and seminar as well as successful completion of the respective exercises as specified at the beginning of the course.		
Conten	ts				
cals as	well as		harmacy. Microscopic	and phytochemical	al plants and phytopharmaceuti- analyses will be performed and ed.
Intende	ed lear	ning outcomes			
		e acquired a specialist kn s on the requirements and			plants and phytopharmaceuti- ia.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
Ü + S (r	no info	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
			ge — if other than German, e	examination offered — if no	t every semester, information on whether
		le for bonus)	mination (approx	to (o minutos) or h)	log (approx. to to ap pages) or
methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 can- didates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be infor- med about the method and length of the assessment prior to the course					
Allocat	ion of _l	olaces			
Allocation of places Number of places: 6. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Bio- logy) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of pla- ces will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree sub- ject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subject S Computational Ma- thematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented sub- ject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places availa- ble in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this proce- dure, applicants who already have successfully completed at least one other module component of the respec- tive module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the ap- plicants' hey have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemistry), Physik (Physics), Ma- thematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firs					

following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 70 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation			
Laboratory practical course I					07-S1-LP1-102-m01			
Module coordinator				Module offered by				
Coordir	nator B	ioCareers		Faculty of Biology				
ECTS	Metho	od of grading	Only after succ. con	ıpl. of module(s)				
5	nume	rical grade						
Duratio	on	Module level	Other prerequisites	ier prereguisites				
1 semester undergraduate		Admission prerequisite to assessment: regular attendance of lab course as specified at the beginning of the course; please consult with acade- mic advisory service in advance.						
Conten	ts							
		coursed is offered by an titution.	institution that is par	t of the University. C	ontents to be determined by the			
Intende	ed learı	ning outcomes						
Studen	its have	e developed skills which	qualify them to work	in their profession.				
Course	S (type, n	number of weekly contact hours,	language — if other than Ger	rman)				
P (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	Courses (type, number of weekly contact hours, language – if other than German) P (no information on SWS (weekly contact hours) and course language available)				
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Module title					Abbreviation
Excursion I					07-S1-Ex1-102-m01
Module coordinator				Module offered by	
Coordir	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semester undergraduate		Admission prerequisite to assessment: regular attendance of field trip as specified at the beginning of the course; please consult with academic advisory service in advance.			
Conten	ts				
Conten	ts of th	e field trip to be determin	ned by the respective	institution.	
Intende	ed lear	ning outcomes			
Studen	ts have	e developed skills which	qualify them to work i	in their profession.	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)	
E (no in	format	ion on SWS (weekly cont	act hours) and course	e language available	2)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 can- didates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be infor- med about the method and length of the assessment prior to the course					
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Biology (2011)					
Bachelor' degree (1 major) Biology (2010)					
Bachelor' degree (1 major) Mathematics (2012)					
	Bachelor' degree (1 major) Mathematics (2013)				
	Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)				
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)					

Interdisciplinary Project I Module coordinator Module coordinator Module coordinator BioCareers Faculty of Biology ECTS Method of grading Only after succ. compl. of module(s) Interdisciplinary Admission prerequisites Admission prerequisite to assessment: regular attendance of project sessions as specified at the beginning of the course; please consult with academic advisory service in advance. Contents Contents Contents of the project to be determined by the competent coordinators; contents will vary according to topic. Intended learning outcomes Students have developed skills which qualify them to work in their profession. Courses (type, number of weeky contacthours, language — if other than German) R (no information on SWS (weekly contact hours, language — if other than German) R (no information on SWS (weekly contact hours, language — if other than German) R (no information on SWS (weekly contact hours, language — if other than German, examination offered — if not every semester, information on whether module to rebuilts in bonus) methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx, 30 minutes) or d) oral examination in groups of up to 3 candidates (approx, 20 minutes) per candidate) or e) presentation (approx, 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course Additional information Faching cycle Faching cy	Module	e title				Abbreviation
Coordinator BioCareers Faculty of Biology ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade - Duration Module level Other prerequisites 1 semester undergraduate Admission prerequisite to assessment: regular attendance of project sessions as specified at the beginning of the course; please consult with academic advisory service in advance. Contents Contents of the project to be determined by the competent coordinators; contents will vary according to topic. Intended learning outcomes Students have developed skills which qualify them to work in their profession. Courses (type, number of weekly contact hours, language – if other than German) R (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes) or d) oral examination in groups of up to 3 candidate	Interdi	sciplina	ary Project I			07-S1-IP1-102-m01
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Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course Allocation of places	Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
module is creditable for bonus) methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 can- didates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be infor- med about the method and length of the assessment prior to the course Allocation of places Additional information Workload Teaching cycle Referred to in LPO 1 (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	R (no ir	nformat	tion on SWS (weekly cont	act hours) and cours	e language available	e)
c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 can- didates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be infor- med about the method and length of the assessment prior to the course Allocation of places 				ge — if other than German, o	examination offered — if no	ot every semester, information on whether
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Bachelor' degree (1 major) Computational Mathematics (2013)		-		-		
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Module	e title				Abbreviation	
Externa	al Pract	ical Course			07-5EP-102-m01	
Module coordinator				Module offered by	<u>.</u>	
Coordi	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
10		rical grade				
Duratio		Module level	Other prerequisites			
1 seme		undergraduate	Admission prerequi	site to assessment: beginning of the cou	regular attendance of lab course rse; please consult with acade-	
Conten	ts					
		complete a placement a ned by the respective in		iniversity research ir	nstitution or a business. Contents	
Intend	ed lear	ning outcomes				
		amiliar with the structu o work in their professio		ions and businesses	and have developed skills which	
Course	S (type, r	number of weekly contact hours	, language — if other than Ger	rman)		
P (no ir	format	tion on SWS (weekly cor	ntact hours) and cours	e language available	e)	
		Sessment (type, scope, langu Ile for bonus)	age — if other than German, o	examination offered — if no	ot every semester, information on whether	
c) oral didates	examin 5 (appro	ation of one candidate	each (approx. 30 minu lidate) or e) presentati	ites) or d) oral exami on (approx. 20 to 30) log (approx. 10 to 20 pages) or ination in groups of up to 3 can- minutes); students will be infor-	
Allocat						
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ns for teaching-degree progra	immes)		
Module	e appea	ars in				
Bachel	-	ree (1 major) Biology (20				
	-	ree (1 major) Biology (20	010)			
Bachel	Bachelor' degree (1 major) Mathematics (2012)					
Bachel Bachel	0		· /			
Bachel Bachel Bachel	or' deg	ree (1 major) Mathemat	ics (2013)			
Bachel Bachel Bachel Bachel	or' deg or' deg	ree (1 major) Mathemat ree (1 major) Computati	ics (2013) onal Mathematics (201			
Bachel Bachel Bachel Bachel Bachel	or' deg or' deg or' deg	ree (1 major) Mathemat	ics (2013) onal Mathematics (20 onal Mathematics (20			

Module title					Abbreviation
Excursion II 07-S2-EX2-102-m01					07-S2-EX2-102-m01
Module	e coord	inator		Module offered by	
Coordir	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme:	ster	undergraduate		inning of the course	regular attendance of field trip as ; please consult with academic
Conten	ts				
		ntents of the field trip to l letermined by the compe			on.] [Version 2: Contents of the ording to topic.]
Intende	ed leari	ning outcomes			
Studen	ts have	e developed skills which	qualify them to work	in their profession.	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
E (no in	format	ion on SWS (weekly cont	act hours) and course	e language available	2)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
c) oral e didates	examin 6 (appro	ation of one candidate ea	ach (approx. 30 minu date) or e) presentati	tes) or d) oral exami on (approx. 20 to 30) log (approx. 10 to 20 pages) or nation in groups of up to 3 can- minutes); students will be infor-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module appears in					
Module appears inBachelor' degree (1 major) Biology (2011)Bachelor' degree (1 major) Biology (2010)Bachelor' degree (1 major) Mathematics (2012)Bachelor' degree (1 major) Mathematics (2013)Bachelor' degree (1 major) Computational Mathematics (2012)Bachelor' degree (1 major) Computational Mathematics (2013)Bachelor' degree (1 major) Computational Mathematics (2013)Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)					

Module	Module title Abbreviation						
Interdi	sciplina	ary Project II			07-S2-IP2-102-m01		
Module	e coord	inator		Module offered by			
Coordi	nator B	ioCareers		Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. con	· · ··			
10	1	rical grade		•			
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate		t the beginning of th	regular attendance of project ses- e course; please consult with		
Conten	ts						
Conten	ts of th	e project to be determine	ed by the competent	coordinators; conter	nts will vary according to topic.		
Intende	ed lear	ning outcomes					
Studen	its have	e developed skills which	qualify them to work	in their profession.			
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)			
R (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	e)		
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether		
c) oral didates	examin 5 (appro	ation of one candidate e	ach (approx. 30 minu date) or e) presentati	ites) or d) oral exami on (approx. 20 to 30) log (approx. 10 to 20 pages) or ination in groups of up to 3 can- minutes); students will be infor-		
Allocat	ion of p	olaces					
Additio	onal inf	ormation					
Worklo	ad						
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)			
Module appears in							
Bachelor' degree (1 major) Biology (2011)							
Bachelor' degree (1 major) Biology (2010)							
	Bachelor' degree (1 major) Mathematics (2012)						
	-	ree (1 major) Mathematic	-	`			
		ree (1 major) Computatio ree (1 major) Computatio					
		gree (1 major, 1 minor) Bi		13)			
Duchel	or 5 ue		0.059 (11.101, 2010)				

Module	e title				Abbreviation		
Laborat	tory Pr	actical Course II			07-S2-LP2-102-m01		
Module coordinator				Module offered by	I		
Coordir	nator B	ioCareers		Faculty of Biology			
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
10	nume	rical grade					
Duratio		Module level	Other prerequisites				
1 seme:	ster	undergraduate	Admission prerequi	site to assessment: beginning of the cou	regular attendance of lab course rse; please consult with acade-		
Conten	ts						
		coursed is offered by an titution.	institution that is par	t of the University. C	ontents to be determined by the		
Intende	ed lear	ning outcomes					
		amiliar with the structure profession.	es of internal instituti	ons and have develo	oped skills which qualify them to		
Course	S (type. r	Courses (type, number of weekly contact hours, language – if other than German)					
		number of weekly contact hours,	language — if other than Gei	rman)			
P (no in		tion on SWS (weekly contact nours,			2)		
Method	format d of ass	tion on SWS (weekly con	tact hours) and cours	e language available	e) ot every semester, information on whether		
Method module is method c) oral e didates	d of ass creditab ds of as examin s (appro	tion on SWS (weekly cont sessment (type, scope, langua ole for bonus) ssessment: a) written exa nation of one candidate e ox. 20 minutes per candi	tact hours) and cours age — if other than German, amination (approx. 45 each (approx. 30 minu date) or e) presentati	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		
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Method module is method c) oral e didates med ab Allocat	formation of ass creditables ds of ass examines (appro- pout the ion of p	tion on SWS (weekly cont sessment (type, scope, langua ele for bonus) sessment: a) written exa tation of one candidate e ox. 20 minutes per candi e method and length of t places	tact hours) and cours age — if other than German, amination (approx. 45 each (approx. 30 minu date) or e) presentati	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		
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Method module is method c) oral e didates med ab Allocat Additio	format d of ass creditab ds of as examin s (appro- oout the ion of p	tion on SWS (weekly cont sessment (type, scope, langua ele for bonus) sessment: a) written exa tation of one candidate e ox. 20 minutes per candi e method and length of t places	tact hours) and cours age — if other than German, amination (approx. 45 each (approx. 30 minu date) or e) presentati	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		
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Method module is method c) oral e didates med ab Allocat Additio Worklo Teachir Referre Bacheld	ad ad ad ad ad ad ad ad ad ad ad ad ad a	tion on SWS (weekly cont sessment (type, scope, langua ele for bonus) sessment: a) written exa- tation of one candidate e ox. 20 minutes per candi e method and length of the places ormation e e LPO I (examination regulation ars in ree (1 major) Biology (20	tact hours) and cours age — if other than German, a amination (approx. 45 each (approx. 30 minu date) or e) presentati he assessment prior t as for teaching-degree progra	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30 to the course) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		
Methoc module is methoc c) oral e didates med ab Allocat Additio Worklo Teachir Referre Bachele Bachele	ad ad ad ad ad ad ad ad ad ad ad ad ad a	tion on SWS (weekly cont sessment (type, scope, langua le for bonus) seessment: a) written exa- tation of one candidate e ox. 20 minutes per candi e method and length of the places ormation e e LPOI (examination regulation ars in ree (1 major) Biology (20 ree (1 major) Biology (20	tact hours) and cours age — if other than German, a amination (approx. 45 each (approx. 30 minu date) or e) presentati he assessment prior to as for teaching-degree progra	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30 to the course) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		
Methoc module is methoc c) oral d didates med ab Allocat Additio Worklo Teachir Referre Bacheld Bacheld Bacheld	ad ad ad ad ad ad ad ad ad ad ad ad ad a	tion on SWS (weekly cont sessment (type, scope, langua de for bonus) sessment: a) written exa tation of one candidate e box. 20 minutes per candi e method and length of t places ormation e e LPOI (examination regulation ars in ree (1 major) Biology (20 ree (1 major) Biology (20 ree (1 major) Mathematic	tact hours) and cours age – if other than German, amination (approx. 45 each (approx. 30 minu date) or e) presentati he assessment prior t s for teaching-degree progra	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30 to the course) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		
Methoc module is methoc c) oral d didates med ab Allocat Additio Worklo Teachir Referre Bacheld Bacheld Bacheld Bacheld	ad ad ad ad ad ad ad ad ad ad ad ad ad a	tion on SWS (weekly cont sessment (type, scope, langua de for bonus) sessment: a) written exa- tation of one candidate e ox. 20 minutes per candi e method and length of the places ormation e e LPOI (examination regulation ars in ree (1 major) Biology (20 ree (1 major) Mathematic ree (1 major) Mathematic	tact hours) and cours age — if other than German, a amination (approx. 45 each (approx. 30 minu date) or e) presentati he assessment prior t as for teaching-degree progra	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30 to the course) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		
Method module is method c) oral e didates med ab Allocat Modultio Teachin Referre Bachele Bachele Bachele Bachele	aformation of a second table of a second table o	tion on SWS (weekly cont sessment (type, scope, langua de for bonus) sessment: a) written exa tation of one candidate e box. 20 minutes per candi e method and length of t places ormation e e LPOI (examination regulation ars in ree (1 major) Biology (20 ree (1 major) Biology (20 ree (1 major) Mathematic	tact hours) and cours age — if other than German, a amination (approx. 45 each (approx. 30 minu date) or e) presentati he assessment prior t s for teaching-degree progra	e language available examination offered — if no to 60 minutes) or b ites) or d) oral exam on (approx. 20 to 30 to the course) log (approx. 10 to 20 pages) or ination in groups of up to 3 can-		

Module	e title				Abbreviation
		and Safety in Bioscience	S		07-SQF-OSB-102-m01
Module	coord	inator		Module offered by	
		ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	, ,,	
5	nume	rical grade		-	
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
help en the bio: sibilitie	science science s of ma	n effective and efficient w	vorkflow in the biosci s-based project mana	ences. Structure and gement. HR manage	ls. Fundamental concepts that d organisation of institutions in ement in the biosciences, respon- nagement styles.
and are	e famili		inisational principles	that are relevant for	g work in the bioscience sector work in research and producti- work in the biosciences.
		umber of weekly contact hours, l			
		mation on SWS (weekly o	· · · · · · · · · · · · · · · · · · ·		· · ·
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
a) writte 10 page		mination (30 to 60 minut	es) and b) presentati	on (approx. 10 minu	tes) or term paper (approx. 5 to
Allocat	ion of p	olaces			
allocate logy) w ces will 5% of p ject Bio themat ject Bio ble in o the oth places, courses dure, a tive mo	ed as fo ith 180 l be allo blaces (blogie (l ics and blogy (a one quo er quo there v s of a m pplicar dule w	ollows: Places will primar ECTS credits. Should the ocated to students of the a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemat s well as potentially to st the exceed the number of ca. Should there be, within will be a uniform regulation to dule component that a the who already have suc ill be given preferential c	ily be allocated to stue e module be used in of Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 E0 tudents of other 'imper- applications, the rem n one module compo- on for the courses of re concerned will be cessfully completed a onsideration. A waiti	adents of the Bachel other subjects, there object Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part of orting' subjects). Sh naining places will b onent, several course one module compor allocated in a standa at least one other mo ng list will be mainta	available places, places will be lor's degree subject Biologie (Bio- will be two quotas: 95% of pla- ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- egree subjects Computational Ma- of the application-oriented sub- ould the number of places availa- be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as a allocated as a

they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module

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	data record Bachelor (180 ECTS) Mathematik - 2012	

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components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010)

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 79 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	title				Abbreviation
Develop	Developmental Biology of Plants for minor field of study 07-3A3EBIOP-102-m01				
Module	coord	inator		Module offered by	
		es Biologie (Biology)		Faculty of Biology	
			Only after succ. con		
		od of grading	Only alter Succ. con		
4		rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate		pletion of the respe	regular attendance of exercises ctive exercises as specified at the
Content	ts				
over a p	olant's	entire life cycle from ger	mination to reproduct	tion. The module wil	of plant developmental biology I discuss the molecular determi- as well as their plasticity.
Intende	ed leari	ning outcomes			
Selecte embryo ontoger	d mole nic axe ny and	cular mechanisms that r es. 5. Examples of mecha evolution. 7. Physiologic	egulate determinatio nisms of morphogen cal aspects of the dev	n and differentiatior esis and organogen elopmental process	of selected model organisms. 3. In processes. 4. Establishment of esis. 6. Interrelations between es discussed.
Courses	5 (type, n	umber of weekly contact hours,	language — if other than Gei	rman)	
V + Ü (n	io infor	mation on SWS (weekly	contact hours) and co	ourse language avai	lable)
		essment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether
written	examiı	nation (approx. 30 to 60	minutes) including m	ultiple choice quest	ions
Allocati				· · ·	
Additio	nal inf	ormation			
Worklo	ad				
Teachin	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ummes)	
Module	appea	irs in			
Bachelo	or' deg	ree (1 major) Mathematic	cs (2012)		
		ree (1 major) Mathematio	·		
	-	ree (1 major) Computatio			
	-	ree (1 major) Computatio		13)	
Bachelo	or's de	gree (1 major, 1 minor) Bi	ology (Minor, 2010)		



Application-oriented Subject Chemistry

(40 ECTS credits)

F		
Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 81 / 237
,	data record Bachelor (180 ECTS) Mathematik - 2012	
	data record Dachelor (100 ECT3) Mathematik - 2012	

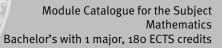


Application-oriented Subject Chemistry Compulsory Courses

(26 ECTS credits)

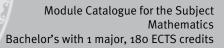
Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 82 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title					Abbreviation	
Introdu	Introduction to Physics for Students of Non-physics-related Minor Subjects					11-EFNF-072-m01	
Module coordinator Module offered b						<u> </u>	
					Module offered by		
Managing Director of the Institute of Applied Physics					Faculty of Physics a	and Astronomy	
ECTS		od of grading	Only after suc	c. con	npl. of module(s)		
7	nume	rical grade					
Duratio	n	Module level	Other prerequ	isites			
2 seme	ster	undergraduate					
Conten	ts						
Mechai	nics, vi	bration theory, thermo	dynamics, optics,	scier	ice of electricity, Ato	mic and Nuclear Ph	ysics.
Intende	ed leari	ning outcomes					·
		nave knowledge of the	principles of Phys	sics			
		umber of weekly contact hour	<u> </u>		man)		
						abla	
		mation on SWS (week	·				
		s essment (type, scope, lang le for bonus)	guage — if other than Ge	erman,	examination offered — if no	ot every semester, informa	tion on whether
		,	nutac)				
		nation (approx. 120 mi	nules)				
Allocat							
	· · · · · · · · · · · · · · · · · · ·	f pool of general key sl	kills (ASQ): 10 pla	ces. P	laces will be allocat	ed by lot.	
Additio	nal inf	ormation					
Worklo	ad						
Teachi	ng cycl	e	,				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree	e nrogra	mmes)		
					inities)		
Module	annea	rs in					
		ree (1 major) Biochemi	stry (2011)				
	-	ree (1 major) Biochemi	-				
	-	ree (1 major) Biochemi					
	-	ree (1 major) Biology (2					
	-	ree (1 major) Biology (2					
		ree (1 major) Biology (2					
	-	ree (1 major) Chemistry					
	-	ree (1 major) Chemistry					
	-	ree (1 major) Chemistry					
	-	ree (1 major) Chemistry	-				
Bachelor' degree (1 major) Geography (2007) Bachelor' degree (1 major) Geography (2008)							
Bachelor' degree (1 major) Geography (2008) Bachelor' degree (1 major) Geography (2010)							
	Bachelor' degree (1 major) Computer Science (2007)						
Bachelor' degree (1 major) Computer Science (2007) Bachelor' degree (1 major) Computer Science (2014)							
Bachelor' degree (1 major) Computer Science (2010)							
Bachel	Bachelor' degree (1 major) Food Chemistry (2009)						
Bachel	or' deg	ree (1 major) Mathema	tics (2008)				
Bachelor's	with 1 maj	or Mathematics (2012)		-	• generated 26-Aug-2024 •	-	page 83 / 237
data record Bachelor (180 ECTS) Mathematik - 2012							



Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Biomedicine (2009) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011)

Modul	le title				Abbreviation	
Physic	cal Cher	nistry 1			08-PC1-092-m01	
Modul	le coord	inator		Module offered by	lule offered by	
lecture Spekti	er of lec	ture "Grundlagen der Qı e" (Principles of Quantu			l and Theoretical Ch	emistry
ECTS	1	od of grading	Only after succ. com	pl. of module(s)		
8	1	rical grade				
Durati		Module level	Other prerequisites			
1 semester undergraduate		Admission prerequisies in the respective (usually 70% of exercised lar attendance of exercised absence).	e classes as specifie rcises to be success	d at the beginning o fully completed) as v	f the course well as regu-	
Conte	nts		•			
the ba the mo UV-VIS	isis of th odule fo S spectro , differe	ntroduces students to the ne following models: pa cuses on vibrational sp oscopy. In addition, the ntial equations, Fourier	rticle in a box, harmon ectroscopy, angular m module discusses line	ic oscillator and rigi omentum quantisati ear operators, eigen	d rotor. As regards s on, microwave spec value problems, mat	pectroscopy, troscopy and trix represen-
Intend	led lear	ning outcomes				
to des		able to explain key mod fferent spectroscopic m hanics.				
Course	es (type, r	number of weekly contact hours	, language — if other than Ger	man)		
V + Ü +	+ V + Ü (no information on SWS	(weekly contact hours) and course langua	ge available)	
		sessment (type, scope, langu le for bonus)	uage — if other than German, e	examination offered — if no	ot every semester, informat	ion on whether
nutes	each; 3	n examinations (1 writte written examinations: 6 oral examination in gro	o minutes each) or b)	oral examination of	tten examinations: 6 one candidate each	o or 90 mi- (approx. 20
	tion of j	_				
Additi	onal inf	ormation				
Workl	oad					
Teachi	ing cycl	e				
Referr	ed to in	LPO I (examination regulation	ns for teaching-degree progra	mmes)		
Modul	le appea	ars in				
	-	ree (1 major) Biochemis	•			
	-	ree (1 major) Biochemis				
	-	ree (1 major) Biochemis				
	unr' deg	roo 11 major) (homistry				
		ree (1 major) Chemistry		• generated 26-Aug-2024 • (page 85 / 237



Bachelor' degree (1 major) Chemistry (2009) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011)

Module title Abbreviation					
Introdu Subjec		o Inorganic Chemistry fo	r Students of Mather	natics and other	08-CM1-112-m01
Modul	e coord	inator	Module offered by	/	
	lecturer of lecture "Experimentalchemie" Chemistry)		e" (Experimental	Institute of Inorga	nic Chemistry
ECTS Method of grading Only after succ. compl. of module(s)					
6	nume	rical grade			
Durati	on	Module level	Other prerequisites	i de la companya de l	
1 seme	ester	undergraduate			
Conter	nts				
Funda	mental	principles of general and	inorganic chemistry.		
		ning outcomes			
		e become familiar with th	e fundamental princi	ples of general and	l inorganic chemistry.
	-	number of weekly contact hours, I		• -	- /
	-	tion on SWS (weekly cont			le)
writter		^{ole for bonus)} nation (approx. 90 minut places	es)		
Additio	onal inf	ormation			
Worklo	oad				
Teachi	ng cycl	е			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Modul	e appea	ars in			
Module appears inBachelor' degree (1 major) Mathematics (2014)Bachelor' degree (1 major) Mathematics (2012)Bachelor' degree (1 major) Mathematics (2013)Bachelor' degree (1 major) Computational Mathematics (2014)					
	-	ree (1 major) Computatio	-		
васпе	ior aeg	ree (1 major) Computatio	nat Mathematics (20	13)	

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 87 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

	e title				Abbreviation	
Organic Chemistry 1					08-0C1-092-m01	
Modul	e coord	inator		Module offered by		
holder of the Professorship of Organic Chemistry Institute of Organic Chem			Chomistry			
	1	· · · · · · · · · · · · · · · · · · ·	E E	•		
ECTS	1	od of grading	Only after succ. cor	npl. of module(s)		
5		rical grade				
Duratio	on	Module level	Other prerequisites	5		
1 semester undergraduate		ses in the respectiv (usually 70% of exe	isite to assessment: re classes as specifie ercises to be success kercises (usually a m	d at the beginning c fully completed) as	of the course well as regu	
Conter	nts					
the boi organio	nding s c comp	provides students with a ituation of carbon and i ounds. The module also mination reactions as w	ntroduces students to discusses the fundar	the nomenclature o mental principles of	f simple and modera	ately comple
Intend	ed lear	ning outcomes				
lecules that pu synthe	s. They urpose, eses.	ure to determine simple are able to describe and they can analyse and ca	l formulate some of th ategorise the characte	e most important re- eristic reaction condi	actions in organic ch	nemistry. For
Course	es (type, r	number of weekly contact hours	, language — if other than Ge	erman)		
V + Ü (no info	rmation on SWS (weekly	/ contact hours) and c	ourse language avai	able)	
		Sessment (type, scope, langu ole for bonus)	uage — if other than German,	examination offered — if no	ot every semester, informat	tion on whether
a) 1 to		en examinations (1 writte				So or go mi-
nutes e	-				one candidate each	
nutes e minute	es) or c)	oral examination in gro			one candidate each	
nutes e minute	-	oral examination in gro			one candidate each	
nutes e minute Allocat	es) or c) tion of	oral examination in gro olaces			one candidate each	
nutes e minute Allocat	es) or c) tion of	oral examination in gro			one candidate each	
nutes e minute Allocat Additic	es) or c) tion of p onal inf	oral examination in gro olaces			one candidate each	
nutes e minute Allocat Additic	es) or c) tion of p onal inf	oral examination in gro olaces			one candidate each	
nutes e minute Allocat Additic	es) or c) tion of p onal inf	oral examination in gro olaces			one candidate each	
nutes e minute Allocat Additio Worklo	es) or c) tion of p onal inf	oral examination in gro places ormation			one candidate each	
nutes e minute Allocat Additio Worklo	es) or c) tion of p onal inf	oral examination in gro places ormation			one candidate each	
nutes e minute Allocat Additio Worklo Teachi 	es) or c) tion of onal inf oad	oral examination in gro places ormation	ups (groups of 2, app	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additic Worklo Teachi Referre	es) or c) tion of onal inf oad ing cycl	oral examination in gro places ormation e LPO I (examination regulation	oups (groups of 2, app	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additio Worklo Teachi Referre § 62 (1	es) or c) tion of p onal inf oad ing cycl ed to in	oral examination in gro places formation e E LPO I (examination regulation emie "Organische und B	oups (groups of 2, app	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additio Worklo Teachi Referre § 62 (1 Modulo	es) or c) tion of onal inf oad ing cycl ed to in .) 2. Che e appea	oral examination in gro places ormation e LPO I (examination regulation emie "Organische und B ars in	oups (groups of 2, app	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additio Worklo Teachi Referre § 62 (1 Bachel	es) or c) tion of p onal inf oad ed to in .) 2. Che e appea lor' deg	oral examination in gro places ormation e LPO I (examination regulation emie "Organische und B ars in ree (1 major) Biochemis	oups (groups of 2, app	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additic Worklo Teachi § 62 (1 Modulo Bachel Bachel	es) or c) tion of p onal inf oad ed to in .) 2. Che e appea lor' deg lor' deg	oral examination in gro places ormation e LPO I (examination regulation emie "Organische und B ars in	oups (groups of 2, app	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additic Worklo Teachi § 62 (1 Bachel Bachel Bachel Bachel	es) or c) tion of p onal inf oad ing cycl ing cy	oral examination in gro places formation e LPOI (examination regulation emie "Organische und B ars in ree (1 major) Biochemis ree (1 major) Biochemis	oups (groups of 2, app ons for teaching-degree progr ioorganische Chemie try (2011) try (2013) try (2009)	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additic Worklc Teachi § 62 (1 Module Bachel Bachel Bachel Bachel Bachel	es) or c) tion of onal inf oad ing cycl ed to in .) 2. Che e appea lor' deg lor' deg lor' deg lor' deg	oral examination in gro places ormation e LPO I (examination regulation emie "Organische und B ars in ree (1 major) Biochemis ree (1 major) Biochemis ree (1 major) Biochemis	nups (groups of 2, app nups (groups of 2, app nups for teaching-degree progr ioorganische Chemie try (2011) try (2013) try (2009) (2010)	rox. 30 minutes)	one candidate each	
nutes e minute Allocat Additic Worklc Teachi S 62 (1 Bachel Bachel Bachel Bachel Bachel Bachel	es) or c) tion of p onal inf oad ing cycl ing cy	oral examination in gro places ormation e E LPO I (examination regulation emie "Organische und B ars in ree (1 major) Biochemis ree (1 major) Biochemis ree (1 major) Biochemis ree (1 major) Chemistry	nups (groups of 2, app nups (groups of 2, app number of the second secon	rox. 30 minutes)	one candidate each	

Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011) First state examination for the teaching degree Gymnasium Chemistry (2009)

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Application-oriented Subject Chemisty Compulsory Electives

(14 ECTS credits)

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	data record Bachelor (180 ECTS) Mathematik - 2012	(I

	e title				Abbreviation
Theoretical Models in Chemistry					08-TC-092-m01
Module coordinator				Module offered by	
lecturer of lecture "Quantenchemie"			Institute of Physica	l and Theoretical Chemistry	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
3	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 semester undergraduate		undergraduate	ses in the respective (usually 70% of exe	e classes as specifie rcises to be success	successful completion of exerci- d at the beginning of the course fully completed) as well as regu- aximum of 2 incidents of unexcu
Conten	nts				
spin, tł tion an	he Paul Id excit	i principle, Slater determ ed states, the Born-Oppe	inants, the Hartree-Fe	ock method, correlat	antum chemistry. It focuses on ion energy, configuration interac dels of H2+.
		ning outcomes			
Studer	nts are a	able to describe excited s	states of molecules w	ith the help of key c	oncepts and models.
Course	es (type, r	number of weekly contact hours,	language — if other than Ge	rman)	
V + Ü (I	no info	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)
module is a) 1 to g or 90 n	s creditat 3 writte ninutes	^{ole for bonus)} en examinations (1 written each; 3 written examina	n examination: appro	x. 90 minutes; 2 wri	ot every semester, information on whether tten examinations: approx. 60
each (c		20 minutes) or c) oral ex	amination in groups		
Allocat			amination in groups		
Allocat			amination in groups		
	tion of _l	places	amination in groups		
	tion of _l		amination in groups		
 Additic	tion of ponal inf	places	amination in groups		
	tion of ponal inf	places	amination in groups		
 Additic Worklo	tion of ponal inf	places ormation	amination in groups		
 Additic	tion of ponal inf	places ormation	amination in groups		
 Additic Worklo Teachi 	tion of p pnal inf pad	places ormation e		(groups of 2, approx	
 Additic Worklo Teachi 	tion of p pnal inf pad	places ormation		(groups of 2, approx	
 Additio Worklo Teachi Referre	tion of p onal inf oad ng cycl	ormation e LPOI (examination regulation		(groups of 2, approx	
 Additic Worklo Teachi Referre Modulo	tion of ponal info pad ng cycl ed to in e appea	ormation e LPOI (examination regulation	s for teaching-degree progra	(groups of 2, approx	

Module	e title				Abbreviation	
Physical and Theoretical Chemistry 3: Symmetry and Quantum Chemistry 08-PC3-092-m01						
Module coordinator			1	Module offered by		
lecturer of lecture "Quantenchemie"			1	nstitute of Physica	l and Theoretical Ch	emistry
ECTS	Metho	od of grading	Only after succ. comp	ol. of module(s)		
6		rical grade	,			
Duratio		Module level	Other prerequisites			
			Admission prerequisi	to to accordmont.	successful completi	on of overci
1 semester undergraduate		undergraduate	ses in the respective (usually 70% of exerc lar attendance of exerc sed absence).	classes as specifie ises to be success	ed at the beginning o fully completed) as v	f the course well as regu-
Conten	Its					
This m	odule d	iscusses the fundame	ntal principles of quantu	m chemistry and s	ymmetry in chemistr	у.
Intend	ed lear	ning outcomes				
			the fundamental princip vledge they have develo		emistry and symmet	ry in che-
Course	S (type, r	umber of weekly contact hour	, language — if other than Germ	an)		
V + Ü +	V+Ü(no information on SWS	(weekly contact hours)	and course langua	ge available)	
			uage — if other than German, ex		-	ion on whether
		le for bonus)			,,,	
	c) oral	examination in groups	utes each) or b) oral exa (groups of 2, approx. 30		andidate each (appr	ox. 20 minu-
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	٩				
reaction	ing cyce					
 Doform						
Referre		LEVI (examination regulation	ons for teaching-degree program	mes)		
		•				
Module						
	-	ree (1 major) Biochemis				
	-	ree (1 major) Chemistry				
	-	ree (1 major) Chemistry	•			
	-	ree (1 major) Mathemat ree (1 major) Mathemat				
			ional Mathematics (200	2)		
	-		ional Mathematics (2003			
	-		ional Mathematics (2013			
	-	ree (1 major) FOKUS Ch				
	-		ng degree Grundschule (Chemistry (2009)		
First st	ate exa	mination for the teachi	ng degree Hauptschule (Chemistry (2009)		
3achelor's	with 1 ma	or Mathematics (2012)	IMII Würzhurg •	generated 26-Aug-2024 •	exam, reg.	page 92 / 237



First state examination for the teaching degree Realschule Chemistry (2009) First state examination for the teaching degree Gymnasium Chemistry (2009) First state examination for the teaching degree Mittelschule Chemistry (2013)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 93 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Organic Chemistry 2 08-0C2-102-m01 Module coordinator Module offered by holder of the Chair of Physically Organic Chemistry Institute of Organic Chemistry ECTS Method of grading Only after succ. compl. of module(s)	ourse regu-				
holder of the Chair of Physically Organic Chemistry Institute of Organic Chemistry ECTS Method of grading Only after succ. compl. of module(s)	ourse regu-				
ECTS Method of grading Only after succ. compl. of module(s)	ourse regu-				
	ourse regu-				
	ourse regu-				
9 numerical grade 08-0C1	ourse regu-				
Duration Module level Other prerequisites	ourse regu-				
1 semester undergraduate Admission prerequisite to assessment: successful completion of ession the respective classes as specified at the beginning of the original sector (usually 70% of exercises to be successfully completed) as well as lar attendance of exercises (usually a maximum of 2 incidents of used absence).	IICACU				
Contents					
This module introduces students to the rules of aromaticity and discusses specific reactions of aromatics the example of carbonyl compounds, it extends the students' knowledge of substitution, elimination and on reactions to complex reaction mechanisms. The course also focuses on oxidation and reduction reactive well as rearrangement. In addition, it introduces students to the spectroscopic methods of infrared spectro py, mass spectrometry and NMR spectroscopy.	additi- ons as				
Intended learning outcomes					
Students have become familiar with the criteria for aromaticity. They can analyse the varying reactivity of car- bonyl compounds. They are able to describe specific reactions of carbonyls and aromatics. For that purpose, they can plan and formulate multi-stage syntheses with complex reaction mechanisms and can transfer them to unknown reactions. Students are able to describe important spectroscopic methods, to evaluate a spectrum and to draw conclusions regarding the molecular structure.					
Courses (type, number of weekly contact hours, language — if other than German)					
V + V + \ddot{U} (no information on SWS (weekly contact hours) and course language available)					
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on w module is creditable for bonus)	hether				
a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one cand each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English					
Allocation of places					
Additional information					
Workload					
 Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Biochemistry (2011) Bachelor' degree (1 major) Biochemistry (2013) Bachelor' degree (1 major) Chemistry (2010) Bachelor' degree (1 major) Mathematics (2012)					
Bachelor's with 1 major Mathematics (2012) JMU Würzburg • generated 26-Aug-2024 • exam. reg. page data record Bachelor (180 ECTS) Mathematik - 2012 Description Description	94 / 237				

Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011)

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Application-oriented Subject Geography

(40 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 96 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Geography - Basics of the Scientific Discipline

(10 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 97 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	1

Module t	Module title Abbreviation					
General phology)	• •	aphy 1 (Earth S	ystem: Exogeneous I	Oynamics - Geomor-	09-PG1ExD-102-m01	
Module	coordinator			Module offered by		
holder of	f the Professors	hip of Physical	Geography	Institute of Geograp	bhy and Geology	
ECTS I	Method of gradi	ng	Only after succ. com	pl. of module(s)		
5 r	numerical grade					
Duration	Module le	evel	Other prerequisites			
1 semest	ter undergra	duate				
Contents	5					
solution: tains or / ries, sha	: monoprocessu Aeolian "Draas" pe of coastlines	al large forms, (huge dunes), 5, escarpments	e.g. endogenous/teo deflation (enclosed)	tonic forms like volu	lacial, Aeolian, marin, littoral, canoes, break clod, fold moun- ual large forms, e.g. glacial se-	
	l learning outco					
Students	s dispose over b	asic knowledg	e of exogenous dyna	mics and geomorpho	ology.	
Courses	(type, number of wee	ekly contact hours, l	anguage — if other than Ger	man)		
V + T (no	information on	SWS (weekly o	ontact hours) and co	urse language availa	able)	
module is c	reditable for bonus)			examination offered — if no	t every semester, information on whether	
	examination (ap	prox. 45 minute	es)			
Allocatio	on of places					
Addition	al information					
Workloa	d					
Teaching	g cycle					
		-	s for teaching-degree progra	mmes)		
	 § 47 (1) 1. Geographie Physiogeographie § 66 (1) 1. Geographie Physiogeographie 					
	appears in					
Bachelor Bachelor Bachelor Bachelor Bachelor	r' degree (1 majo r' degree (1 majo r' degree (1 majo r's degree (1 majo r's degree (1 majo	or) Mathematic or) Mathematic jor, 1 minor) Ge jor, 1 minor) Pr	s (2012) s (2013) eography (Minor, 201 e- and Protohistoric A	Archaeology (2012)		
Bachelo	r's degree (2 ma	jors) Pre- and I	Protohistoric Archaeo	logy (2012)		

Module title A					Abbreviation	
Genera	l Physi	ical Geography 2 (Earth	System: Climate Syst	em)	09-PG1KS-102-m01	
Module	Module coordinator Module offe				I.	
holder	of the l	Professorship of Climato	ology	Institute of Geogra	ohy and Geology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
	d energ				elestial mechanical basics; radia I appearance of the terrestrial cli-	
Intende	ed lear	ning outcomes				
Studen	ts will	gain a basic physical un	derstanding of the Ea	rth's climate system	•	
Course	S (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
V + T (n	o infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
		sessment (type, scope, langu le for bonus)	lage — if other than German,	examination offered — if no	ot every semester, information on whether	
written	exami	nation (approx. 45 minu	tes)			
Allocat	ion of _l	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulatio	ns for teaching-degree progra	ammes)		
		graphie Physiogeograp graphie Physiogeograp				
Module	e appea	ars in				
	-	ree (1 major) Mathemati				
	-	ree (1 major) Mathemat				
	-	ree (1 major) Mathemati	-			
васпе	or's de	gree (1 major, 1 minor) (eography (Minor, 201	2)		

Module title					Abbreviation
Genera	l Phys	ical Geography 3 (Earth S	ystem: Endogenic D	ynamics)	09-PG1EnD-102-m01
Module	Module coordinator			Module offered I	 ЭУ
holder rials Re		Professorship of Geodyna	amics and Geomate-	Institute of Geog	raphy and Geology
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	its				
nesis, quakes	sedime 5, oroge	ents/ sedimentary rocks, i enesis, continental crust,	metamorphosis; geol	logical structures,	neous rocks, plutonism/magma ge- ocean floor, plate tectonics, earth-
	-	ning outcomes	<u> </u>		
		ose over basic knowledg			
	_	number of weekly contact hours, l			
		mation on SWS (weekly o			
		sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offered — i	f not every semester, information on whether
written	exami	nation (approx. 45 minute	es)		
Allocat	ion of	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
		ographie Physiogeographi ographie Physiogeograph			
Module	e appea	ars in			
Bachel Bachel	or' deg or' deg	ree (1 major) Mathematic ree (1 major) Mathematic ree (1 major) Mathematic gree (1 major, 1 minor) Ge	s (2012) s (2013)	2)	

Module	Module title Abbreviation					
Introdu	uction t	o the Geography of Cities	s, Towns and Villages	5	09-HG1SI-102-m01	
Module	Module coordinator			Module offered by	<u> </u>	
holder	of the l	Professorship of Cultural	Geography	Institute of Geogra	ohy and Geology	
ECTS		od of grading	Only after succ. con	pl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Contents						
Introdu	uction to	o "Settlement Geography	".			
Intend	ed lear	ning outcomes				
Studer	nts poss	sess knowledge of Urban	Geography as well as	s in Geography of Ru	Iral Settlements.	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	rman)		
V + T (r	no infor	mation on SWS (weekly c	contact hours) and co	urse language avail	able)	
module is written	s creditab exami	le for bonus) nation (approx. 45 minute		examination offered — if no	ot every semester, information on whether	
Allocat	tion of j	olaces				
Additio	onal inf	ormation				
	-					
Worklo	ad					
	_					
Teachi	ng cycl	e				
		LPO I (examination regulations		mmes)		
		graphie Humangeograph graphie Humangeograph				
Module	e appea	ars in				
	-	ree (1 major) Mathematic				
Bachelor' degree (1 major) Mathematics (2012)						
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Political and Social Studios (2014)						
Bachelor' degree (1 major) Political and Social Studies (2011) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012)						
		gree (1 major, 1 minor) Ge gree (1 major, 1 minor) Pr				
		gree (1 major, 1 minor) Pr gree (1 major, 1 minor) Pr			2012)	
		gree (2 majors) Pre- and I			2012)	
Sucrici	51 J UL			(2012)		

Module title Abbreviation					Abbreviation
Introdu	uction t	o Economic Geography			09-HG1WI-102-m01
Module coordinator				Module offered by	I
holder	of the l	Professorship of Economi	c Geography	Institute of Geogra	ohy and Geology
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conten	nts				
Introdu	uction t	o "Economic Geography"			
Intend	ed lear	ning outcomes			
		sess knowledge of Econo on theory and developme		are also acquaintec	l with the geographical economic
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V + T (r	no infor	mation on SWS (weekly o	ontact hours) and co	urse language avail	able)
	exami	le for bonus) nation (approx. 45 minuto blaces	es)		
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
	1				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
		graphie Humangeograph graphie Humangeograph			
Module	e appea	ars in			
Bachel Bachel Bachel Bachel	lor' deg lor' deg lor' deg lor's de	ree (1 major) Mathematic ree (1 major) Mathematic ree (1 major) Mathematic ree (1 major) Political and gree (1 major, 1 minor) Ge gree (1 major, 1 minor) Pr	s (2012) s (2013) I Social Studies (2013 eography (Minor, 201	2)	

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Module title Abbreviation					
Introdu	uction t	o Social and Population	Geography		09-HG1SO-102-m01
Module	Module coordinator Mod			Module offered by	
holder	of the l	Professorship of Social G	eography	Institute of Geogra	ohy and Geology
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	nts				
Introdu	uction t	o "Social and Population	Geography".		
Intend	ed lear	ning outcomes			
Studer	nts poss	sess knowledge of Social	and Population Geog	graphy as well as Civ	vilisation Geographical Research.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)	
V + T (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
module is	s creditab	le for bonus)	-	examination offered — if no	ot every semester, information on whether
written	exami	nation (approx. 45 minut	es)		
Allocat	tion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	е			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
		graphie Humangeograph graphie Humangeograph			
Module	e appea	ars in			
Bachel Bachel Bachel Bachel Bachel	or' deg or' deg or' deg or's de or's de	ree (1 major) Mathematic ree (1 major) Mathematic ree (1 major) Mathematic ree (1 major) Political and gree (1 major, 1 minor) Ge gree (1 major, 1 minor) Pr gree (1 major, 1 minor) Pr	s (2012) s (2013) d Social Studies (201 eography (Minor, 201 e- and Protohistoric A	2) Archaeology (2012)	2012)
		gree (2 majors) Pre- and I			/



Application-oriented Subject Geography - Special Topics

(10 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 104 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation	
Workin	Working Methods: Solid Earth System				09-MT3-082-m01	
Module	Module coordinator Module offer					
holder search					bhy and Geology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
will be cally re mentar piece io dimens differer	provide levant i y, igneo dentifia sional d nt rock	ed with distinctive feature minerals by means of cho ous and metamorphic roo ble mineral existence an lisplay of three-dimensio	es and characteristics osen visuals. Subseq ck types will be elucio d structure. In the fol nal display of geolog	s of the most importa uently, the classifica dated and practised lowing modular sect ical phenomena like	f value of geomaterials. Students ant rock-forming and economi- ation of the most important sedi- on the basis of their in the hand- ion, the understanding of two- the geographical distribution of l maps and sections as well as	
Intende	ed learr	ning outcomes				
rock sa	mples		Moreover, they are al	ole to interpret geolo	sible, to outline and interpret the gical maps correctly and to show	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
compo • 0	nent. 9-MT3-	omprises 2 module comp 1-082: S (no information 2-082: Ü (no information	on SWS (weekly cont	tact hours) and cours		
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
	less st	ated otherwise, successf			e components as specified be- successful completion of all indi-	
• 5 • w Assess • 5 • w	 Assessment in module component og-MT3-1-082: Mineral and Rock Identification 5 ECTS, Method of grading: numerical grade written or oral examination of one candidate each (30 minutes each) Assessment in module component og-MT3-2-082: Geological Maps and Structures 5 ECTS, Method of grading: numerical grade written or oral examination of one candidate each (approx. 30 minutes each) or term paper (approx. 20 pages) 					
Allocat	ion of p	olaces				
Additional information						
Worklo	ad					

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 66 (1) 2. Geographie Methoden der Geographie

Module appears in

Bachelor' degree (1 major) Geography (2008) Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (2 majors) Geography (2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 106 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	Module title Abbreviation					
Theorie	es and	Methodology in Human G	ieography		09-MT2-082-m01	
Module	e coord	inator		Module offered by		
holder	ofthe	Professorship of Cultural	Geography	Institute of Geogra	ohy and Geology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on in the second	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
	nt pers				al specific theory, discussion of in analytical and prescriptive	
Intende	ed lear	ning outcomes				
		sess knowledge of theore nods as well as models ar			ts are acquainted with empirical	
Course	S (type, 1	number of weekly contact hours, l	anguage — if other than Ge	rman)		
S (no ir	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	2)	
module is written	s creditat exami	^{lle for bonus)} nation (45 minutes) and p			ot every semester, information on whether ted 1:1	
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	immes)		
§ 66 (1)) 2. Geo	ographie Methoden der G	eographie			
Module	e appea	ars in				
Bachelor' degree (1 major) Geography (2008)						
Bachelor' degree (1 major) Geography (2010)						
Bachelor' degree (1 major) Mathematics (2008)						
	Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)					
	-	gree (1 major, 1 minor) Ge	-	2)		
		gree (1 major, 1 minor) Ge gree (1 major, 1 minor) Ge			o)	
		gree (2 majors) Geograph		U T // (<i>.</i>	

Module	Module title Abbreviation					
Specia	lIssue	s of Human Geography 1			09-HG2T1-102-m01	
Module	e coord	inator		Module offered by		
holder	of the l	Professorship of Social G	eography	Institute of Geogra	ohy and Geology	
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts	~	·			
		leals with and consolidat Iuman Geography".	es chosen issues of '	'Theoretical and App	olied Human Geography" from a	
Intend	ed lear	ning outcomes				
their ap	oplicati	on-oriented implementat	tion. They are acquain	nted with the produc	p-area of Human Geography and ction of seminar papers on the ba s in a freely hold presentation.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
S (no ir	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)	
module is	s creditab	sessment (type, scope, langua ole for bonus) (approx. 30 minutes) with			ot every semester, information on whether weighted 1:1	
Allocat	ion of _l	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	ars in				
		ree (1 major) Mathematic				
Bachelor' degree (1 major) Mathematics (2013)						
Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012)						
		gree (1 major, 1 minor) Ge				
		gree (1 major, 1 minor) Ge		an Geography) (201	0)	
Bachel	or's de	gree (2 majors) Geograph	IY (2010)			

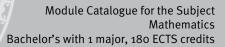
Module title			Abbreviation				
Quantitative and Qualitative Regional Analysis			09-MT4-102-m01				
Module	e coord	inator		Module offered by			
holder	of the I	Professorship of Social	Geography	Institute of Geograp	ohy and Geology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
10	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
of geog	raphic	ncludes processes of q al modelling and simul n of methods, criticism	ation. Processes of qua	alitative social and re	egional research. Pre	sentation	
Intende	ed lear	ning outcomes					
cal met ficiency	hods a	sess the following skills s well as the skills con	cerning the assessmen	t and evaluation of t			
		number of weekly contact hour					
compoi • o	nent. 9-MT4	omprises 2 module con -1-102: S (no informatio -2-102: S (no informatio	n on SWS (weekly cont	act hours) and cours	se language availabl	e)	
		Sessment (type, scope, lang Ile for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether	
	less st	n this module comprise ated otherwise, succes ments.					
• 5 • p Assess • 5 • a	ECTS, resent ment in ECTS,) prese hort pr	n module component o Method of grading: nur ation (approx. 30 minu n module component o Method of grading: nur entation (approx. 30 m esentations (10 minute as approx. 3 exercises)	nerical grade tes) with written elabor 9-MT4-2-102: Qualitati nerical grade inutes) with written ela es each) and one portfo	ation (approx. 20 pa ve Regional Analysis aboration (approx. 2	ges), weighted 1:1 ; o pages), weighted		
Allocat	ion of j	olaces					
Additio	nal inf	ormation					
Worklo	Workload						
Teaching cycle							
-							
Referred to in LPO I (examination regulations for teaching-degree programmes)							
		ographie Methoden der					
Module appears in							
		ree (1 major) Geograph	y (2010)				
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • 6 achelor (180 ECTS) Mathema	-	page 109 / 237	

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010) Bachelor's degree (2 majors) Geography (2010)

Modul	e title				Abbreviation
Specia	llssue	s of Human Geography 2			09-HG2T2-102-m01
Module coordinator Module offered by					
holder	ofthe	Professorship of Social G	eography	Institute of Geograp	ohy and Geology
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Its		1		
		leals with and consolidat Iuman Geography".	es chosen issues of '	'Theoretical and App	olied Human Geography" from a
Intend	ed lear	ning outcomes			
their a	pplicati	ion-oriented implementat	tion. They are acquain	nted with the produc	-area of Human Geography and tion of seminar papers on the ba s in a freely hold presentation.
Course	S (type, 1	number of weekly contact hours, l	anguage — if other than Gei	rman)	
S (no ii	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)
module i	s creditat	sessment (type, scope, langua ble for bonus) (approx. 30 minutes) with	-		ot every semester, information on whether weighted 1:1
Allocat	ion of	places			
		ormation			
Additio	onat ini	ormation			
Worklo	du				
 Taash'		_			
Teachi	ng cycl	e			
Keferre	ed to in	LPO I (examination regulation	s tor teaching-degree progra	immes)	
		•			
Modul					
Bachelor' degree (1 major) Mathematics (2012)					
Bachelor' degree (1 major) Mathematics (2013)					
Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012)					
Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)					
		• • • • •		ian deugraphy) (201	0)
Dachel	oi s ue	gree (2 majors) Geograph	iy (2010)		

Module title Abbreviation						
Applied Human Geography 09-HG3-102-m01						
Module	coord	inator		Module offered by		
holder	of the F	Professorship of Social	Geography	Institute of Geograp	ohy and Geology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	numei	rical grade	09-HG1 and 09-MT2 09-STAT-2 or 09-KAI	and 09-MT4 and 09 RT-2	-STAT-1 and 09-KART	-1 and either
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Conten	ts					
		choose a topic of "Hum ion of explored issues.	an Geography" and att	end a project semina	ar: data collection, d	ata analysis
Intende	ed learr	ning outcomes				
phical p -Elabora -Presen -Knowle	olannin ation o tation edge co	f the already acquired t g and development us f action-oriented soluti of results; oncerning the use of en methods, acquisition of	ing empirical research ons; npirical survey and ana	methods; lysis methodology, p		
		umber of weekly contact hour				
compor • 0	nent. 9-HG3-	omprises 2 module cor 1-082: S (no informatic 2-102: S (no informatic	on on SWS (weekly con	tact hours) and cours	se language availabl	le)
		essment (type, scope, lang le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informati	on on whether
	less st	this module comprise ated otherwise, succes nents.				
 Assessment in module component og-HG3-1-082: Project-oriented Seminar 1 for Applied Human Geography 5 ECTS, Method of grading: numerical grade presentation (approx. 30 minutes) with written elaboration (approx. 20 pages), weighted 1:1 Assessment in module component og-HG3-2-102: Project-oriented Seminar 2 for Applied Human Geography 5 ECTS, Method of grading: numerical grade presentation (approx. 30 minutes) with written elaboration (approx. 20 pages), weighted 1:1 						
Allocati	ion of p	olaces				
Additio	nal info	ormation				
Workload						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Bachelor's v	with 1 maj	or Mathematics (2012)		• generated 26-Aug-2024 • e achelor (180 ECTS) Mathemat		page 112 / 237



Module appears in

Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 113 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title Abbreviation				Abbreviation	
Remote Sensing 1 09-FERN1-102-m01			09-FERN1-102-m01		
Module	e coord	inator		Module offered by	
holder	of the O	Chair of Remote Sensing		Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Introdu	ction to	o "Geographical Remote S	Sensing".		
Intende	ed leari	ning outcomes			
		sess the following skills: ⁻ nd of different sensor and			System, Remote Sensing against
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + T (n	o infor	mation on SWS (weekly c	ontact hours) and co	urse language availa	able)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written	exami	nation (approx. 45 minute	es)		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
§ 66 (1)	2. Geo	ographie Methoden der G	eographie		
Module appears in					
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010) Bachelor's degree (2 majors) Geography (2010)					

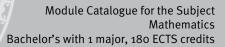
Remote Sensing z 0.9 FERN2-102-m01 Module criter of Name of Remote Sensing Institute of Geography and Geology ECTS Metu-t of grading Institute of Geography and Geology ECTS Metu-t of grading Institute of Geography and Geology S numerical grade - Duration Module level Other prerequisites - Concerrect Concerrect - - Concerrect Module level 0 - Concerrect Concerrect - - Concerrect Remote Sensing to Geography. Intended learning outcomes Students have skills of current geographical fields of application concerning the conservectional methodology, consolidation of application on SWS (weekly contact hours) and course language availate/ Method of assessment (type, scope, language – if other than German, examination offered – if not eremy senseter, information on whether module is concerning the consolidation or splication on SWS (weekly contact hours) and course language availate/ Writter = x=x================================	Module	e title	·			Abbreviation	
holder of the Chair of Remote Sensing Institute of Geography and Geology ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade	Remote	Remote Sensing 2				09-FERN2-102-m01	
ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Application of Remote Sensing to Geography. Intended learning outcomes Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + 1 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places	Module	e coordi	inator		Module offered by		
5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Application of Remote Sensing to Geography. Intended learning outcomes Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Additional information Centended to in LPO 1 (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) G	holder	of the C	Chair of Remote Sensing		Institute of Geograp	bhy and Geology	
Duration Module level Other prerequisites 1 semester undergraduate Contents Application of Remote Sensing to Geography. Intended learning outcomes Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Additional information Referred to in LPO I (examination regulations for teaching degree programmes) Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major), ninnor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Kous Physical Geography) (2010)	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
1 semester undergraduate Contents Application of Remote Sensing to Geography. Intended learning outcomes Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Motional information Vorkload Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major), 1 minor) Geography (Kinor, 2012) Bachelor' degree (1 major), 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Kous Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Kous Physical Ge	5	numei	rical grade				
Contents Application of Remote Sensing to Geography. Intended learning outcomes Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) wirtten examination (approx. 45 minutes) Allocation of places Morkload Morkload Bachelor' degree (n major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Geography (Minor, 2012) Bachelor' degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010)	Duratio	n	Module level	Other prerequisites			
Application of Remote Sensing to Geography. Intended learning outcomes Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major, 1 minor) Geography (Kinor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)	1 seme	ster	undergraduate				
Intended learning outcomes Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language — if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places	Conten	ts					
Students have skills of current geographical fields of application concerning the cross-sectional methodology, consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Motion of places Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Knor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010)	Applica	tion of	Remote Sensing to Geog	raphy.			
consolidation of application possibilities of different sensor and platform specifications. Courses (type, number of weekly contact hours, language – if other than German) V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)	Intende	ed learr	ning outcomes				
V + T (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
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module is creditable for bonus) written examination (approx. 45 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)	V + T (n	o infor	mation on SWS (weekly c	ontact hours) and co	urse language availa	able)	
Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)				ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Additional information Additional Additional information Additional Additional information	written	examir	nation (approx. 45 minute	es)			
Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)	Allocat	ion of p	olaces				
Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
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Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
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Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)	Teachir	ng cyclo	e				
Module appears in Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)	Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)		
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)	Module appears in						
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)		-					
Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)							
Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010)		-				10)	

Module title				Abbreviation		
Special Problems of Physical Geography 1 09-PG2T1-102-m01						
Module	e coord	inator		Module offered by		
holder	ofthe	Chair of Physical Geogra	aphy	Institute of Geograp	ohy and Geology	
ECTS		od of grading	Only after succ. con		,	
5	1	rical grade				
Duratio		Module level	Other prerequisites			
1 seme: Conten		undergraduate				
This mo approa global o cycle of	odule c ches a change f mater	overs synthesis and ne nd particularly on the b and past global chang ials on Earth's surface. ning outcomes	asis of the human imp	act: geomorphology,	climate, soil, hydro	geography,
						a a su ina d
concern ven by ture, fu that ha titative the cap ment a cerning cal Geo	Students are acquainted with the synthesis and interconnectedness of skills that have already been acquired concerning the processes on Earth's surface, which are dominating the landscape on Earth's surface and are driven by the geological factors rock, relief, climate, soil, water, flora and fauna. These processes determine structure, function and dynamics of the natural environment and its anthropogenic transformation (the environment that has been shaped from humans by land utilisation, settlements, transport routes etc.). Through the quantitative acquisition of current process structures, Physical Geography is not only able to derive predications for the capability and capacity of geological systems, but also to predict changes in future by analysing the development and change of geographical territories in the past. These important planning decision-making bases concerning the management as well as the sustainable use and development, are given weight to the task of Physical Geography in the practical area.					
		number of weekly contact hours				
V (no ir	nforma	tion on SWS (weekly co	ntact hours) and cours	e language available	<u>,</u>	
		sessment (type, scope, lang le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informati	on on whether
written	exami	nation (approx. 45 minu	utes)			
Allocat	ion of _l	places				
Additio	onal inf	ormation				
Worklo	bed					
Workto	uu					
Teachi		•				
Teacini	ing cycl	c				
 Doforro	d to in					
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010) Bachelor's degree (2 majors) Geography (2010)						
				-		
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • 6 achelor (180 ECTS) Mathema	-	page 116 / 237

Module title A				Abbreviation		
Special Problems of Physical Geography 2 09-PG2T2-102-m01				09-PG2T2-102-m01		
Module	coord	inator		Module offered by		
holder	of the (Chair of Physical Geograp	hy	Institute of Geograp	bhy and Geology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Content	ts					
approa global c	ches ai change	nd particularly on the bas	sis of the human impa	act: geomorphology,	n the light of different methodical climate, soil, hydro geography, osystem prediction as well as the	
Intende	ed learı	ning outcomes				
concerr ven by t ture, fut that has titative the cap ment ar cerning	ning the the geo nction s been acquis ability nd chai	e processes on Earth's su ological factors rock, relie and dynamics of the natu shaped from humans by ition of current process s and capacity of geologica nge of geographical territ	Irface, which are dom if, climate, soil, water ural environment and land utilisation, settl tructures, Physical G al systems, but also t ories in the past. The	inating the landscap , flora and fauna. Th its anthropogenic tr lements, transport ro eography is not only o predict changes in se important planning	at have already been acquired pe on Earth's surface and are dri- lese processes determine struc- ransformation (the environment butes etc.). Through the quan- able to derive predications for future by analysing the develop- ng decision-making bases con- iven weight to the task of Physi-	
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (no in	format	ion on SWS (weekly cont	act hours) and course	e language available	2)	
		s essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
present	ation (approx. 30 minutes) with	written elaboration ((approx. 20 pages), v	weighted 1:1	
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachin	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2010) Bachelor's degree (2 majors) Geography (2010)						

Module	e title				Abbreviation
Data Acquisition and Processing in Physical Geography 09-MT1-102-m01					09-MT1-102-m01
Module coordinator Module offered by					
holder	of the (Chair of Physical Geograp	ohy	Institute of Geograp	ohy and Geology
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts		•		
duced i studen delling	in "Phy ts can a , geopł	sical Geography" as a typ attend alternative semina	pical example in orde ars, in which applicat	r to understand the i ions from the areas	ng of data sets, which will be ad- natural environment; Advanced ground climatology, climate mo- eographic information system)
Intende	ed lear	ning outcomes			
the mo ked tog	delling gether i	at the computer with dif	ferent stages of data tical dealing with geo	processing in the lal	of data collection in the field or b or at the computer will be lin- ent methods as well as the dea-
Course	S (type, r	umber of weekly contact hours,	anguage — if other than Ger	rman)	
S (no ir	format	ion on SWS (weekly cont	tact hours) and cours	e language available	2)
		s essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
presen	tation (approx. 15 minutes) with	written elaboration (15 pages), weighted	1:1
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	irs in			
Bachel Bachel Bachel Bachel	or' deg or' deg or's deg or's deg	ree (1 major) Geography ree (1 major) Mathematic ree (1 major) Mathematic gree (1 major, 1 minor) Go gree (1 major, 1 minor) Go gree (2 majors) Geograph	s (2012) s (2013) eography (Minor, 201 eography (Focus Phys		10)

Module title			Abbreviation			
Applied Physical Geography 09-PG3-102-m01						
Module	coord	inator		Module offered by		
holder of the Chair of Physical Geography Institute of Geography and Geology						
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
		choose a topic of "Phys ion of explored issues.	cal Geography" and a	ttend a project semir	nar: data collection,	data analysis
Intende	ed learr	ning outcomes				
der to i ject, pro data co graphic	mplem ocess s Ilectior visual	v how to use their skills ent them practically. Ba teps of geographical re n in the field or the mod isation and presentatio vork independently.	sed on a specific issu search and method wi elling at the computer	e, which is partly inte Il be undergone. Stu , the application of s	egrated in a current i dents are acquainte statistical processes	research pro- ed with the , the carto-
Course	S (type, n	umber of weekly contact hours	, language — if other than Gei	rman)		
compo • 0	nent. 9-PG3-	omprises 2 module con 1-082: S (no informatio 2-102: S (no informatio	n on SWS (weekly cont	tact hours) and cours	se language availabl	le)
		essment (type, scope, langu				
		le for bonus)			,	
	less st	this module comprises ated otherwise, success ments.				
sition • 5 • p Assess sentation • 5	ECTS, i resenta ment ir on ECTS, i	n module component og Method of grading: nun ation (30 minutes) with n module component og Method of grading: nun report (approx. 20 page	nerical grade written elaboration (20 9 -PG3-2-102: Project S nerical grade	o pages), weighted 1	:1	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Workload						
Teachi	ng cycl	e				
Referre	d to in	LPOI (examination regulation	ns for teaching-degree progra	immes)		
Bachelor's	with 1 maj	or Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathemat	-	page 119 / 237



Module appears in

Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 120 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	1

Module title				Abbreviation		
Cartography 1 09-KART1-102-m01					09-KART1-102-m01	
Module	e coord	inator		Module offered by		
holder	of the I	Professorship of Cultural	Geography	Institute of Geograp	bhy and Geology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Introdu	ction to	o "Cartography" and to th	e "Collection and Pro	ocessing of Geodata		
Intende	ed lear	ning outcomes				
Studen	ts poss	sess the following skills:	Basics of cartography	/ and use of geodata		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V + T (n	o infor	mation on SWS (weekly c	ontact hours) and co	urse language availa	able)	
module is written	exami	le for bonus) nation (approx. 75 minute			ot every semester, information on whether	
grams);	_					
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
		LPOI (examination regulations		mmes)		
-	§ 66 (1) 2. Geographie Methoden der Geographie					
Module appears in						
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Master's degree (1 major) General and Applied Linguistics (2012) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2012) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2012) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2012) Bachelor's degree (2 majors) Geography (2010)						

Module title				Abbreviation		
Workin	g Meth	ods of Physical Geogra	aphy		09-MT5-102-m01	
Module	e coord	inator		Module offered by		
holder	of the (Chair of Physical Geogr	aphy	Institute of Geograp	ohy and Geology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
soil geo data pr	ograph [.] eparati	basic principles of phys y, vegetation geograph ion, analysis and interp of the GIS discussion a	y, hydro geography, cli retation; Synthesis of	matology); 10 days o partial results, visua	of fieldwork. Practica	l exercise:
Intende	ed lear	ning outcomes				
skills o tion po	f the di ssibilit	sess the fundamental p ifficulties of field, meas ies of the acquired field ability of networked con	urement and lab works I and lab data. They po	s and possess an ove ossess the visualisat	erview of analysis an ion and presentatior	d interpreta-
Course	S (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
compo • c	nent. 99-MT5 [.]	omprises 2 module cor 1-082: P (no informatic 2-102: S (no informatic	n on SWS (weekly con	tact hours) and cours	se language availabl	e)
Metho	d of ass	sessment (type, scope, lang le for bonus)				
	nless st	n this module comprise ated otherwise, succes ments.				
 Assessment in module component og-MT5-1-082: Introduction to physiogeographical Fieldwork Skills, Field Mapping and Measuring 5 ECTS, Method of grading: numerical grade placement report / fieldwork report / report on practical training / report on practical course / project report / report on technical course (approx. 15 pages) Assessment in module component og-MT5-2-102: Data management, -analysis and -interpretation 5 ECTS, Method of grading: numerical grade presentation of project (approx. 30 minutes) with written elaboration (approx. 20 pages) 						
Allocation of places						
Additional information						
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
		-				
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 122 / 237

Module appears in

Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 123 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title				Abbreviation	
Methods of Planning in Human Geography				09-MT6-102-m01	
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Cultural	Geography	Institute of Geograp	bhy and Geology
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		empirical research meth ment of action-oriented			aphical planning and develop- lts.
Intende	ed leari	ning outcomes			
gional o	develop		onal or spatial develo		sis methodology concerning re- , the ability to work in a team, re-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
compoi • 0	nent. 9-MT6·	omprises 2 module comp 1-082: S (no information 2-102: S (no information	on SWS (weekly cont	tact hours) and cour	
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
	less st	ated otherwise, successf			e components as specified be- successful completion of all indi-
 Assessment in module component og-MT6-1-o82: Methods of Planning in Human Geography 1 5 ECTS, Method of grading: numerical grade a) presentation (approx. 25 minutes) with written elaboration (approx. 12 pages), weighted 1:1 or b) term paper (approx. 20 pages) or c) several small assessments (total length/expenditure of time comparable to a) and/or b)), weighted 1:1 Assessment in module component og-MT6-2-102: Planning Methods in Human Geography 2 5 ECTS, Method of grading: numerical grade a) presentation (approx. 25 minutes) with written elaboration (approx. 12 pages) or b) term paper (approx. 20 pages) or c) several small assessments (total length/expenditure of time compared prox. 20 pages) or c) several small assessments (total length/expenditure of time paper (approx. 20 pages) or c) several small assessments (total length/expenditure of time compared prox. 20 pages) or c) several small assessments (total length/expenditure of time compared (approx. 20 pages) or c) several small assessments (total length/expenditure of time compared (approx. 20 pages) or c) several small assessments (total length/expenditure of time comparable to a) and/or b)) 					
Allocat	<u> </u>			<u> </u>	
Additional information					
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	in and a second s			
Bachelor' degree (1 major) Geography (2010)					

Bachelor's with 1 major Mathematics (2012)



Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 125 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Computer Science

(40 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 126 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Algorithmic Graph Theory In-I-AGT-122:m01 Module ⊂ortime Chair of Computer Science	Module title				Abbreviation	
holder of the Chair of Computer Science I Institute of Computer Science ECTS Method of grading Only after succ. compl. of module(s) 5 Inumerical grade Duration Module level Other prerequisites as specified by the lecturer at the beginning of the course (e. g. completion of exercises). Contemts We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and colourings, work with planar graphs and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes The students are able to model typical problems in computer science as graph problem. In addition, the participants are able to decide which tool from the course helps solve a given graph algorithmically. In this course, students learn in detail how to estimate the run time of given graph algorithms. Courses (type, number of weekly contact hours) anguage — if other than Geman) V + 0 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than Geman, examination of end clatate each or an oral examination in groups (one candidate each: 1s minutes, groups of 3: 2s minutes) Language of assessment: English, German if agreed upon with the examinator on candidate each is an indigreed upon with the examination of pace	Algorit	hmic G	raph Theory			10-l-AGT-122-m01
ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Where applicable, prerequisites as specified by the lecturer at the beginning of the course (e. g. completion of exercises). Contents We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes	Module	coord	inator		Module offered by	
5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Where applicable, prerequisites as specified by the lecturer at the beginning of the course (e. g. completion of exercises). Contents We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and colourings, work with planar graphs and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes Intended learning outcomes The students are able to model typical problems in computer science as graph problems. In addition, the participants are able to decide which tool from the course helps solve a given graph problem algorithms. Courses (type, number of weekly contact hours, language – if other than German) V + U (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is cettable for bonus) written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination of places Motional informati	holder	of the C	Chair of Computer Scienc	e l	Institute of Comput	er Science
Duration Module level Other prerequisites 1 semester undergraduate Where applicable, prerequisites as specified by the lecturer at the beginning of the course (e.g. completion of exercises). Contents Were applicable, prerequisites as specified by the lecturer at the beginning of the course (e.g. completion of exercises). We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and colourings, work with planar graphs and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes The students are able to model typical problems in computer science as graph problems. In addition, the participants are able to decide which tool from the course helps solve a given graph algorithms. Courses (type, number of weekly contact hours, language – if other than Geman) V + U (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than Geman) V + U (no information can be replaced by an oral examination of one candidate each or an oral examination of approx. so to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination Gemean (sgroups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Aldiocation of places	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
1 semester undergraduate Where applicable, prerequisites as specified by the lecturer at the beginning of the course (e.g. completion of exercises). Contents We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes Intended learning outcomes The students are able to decide which tool from the course helps solve a given graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph algorithms. Courses (type, number of weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than Geman, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. so to 6 on minutes); if announced by the lecturer by four weeks prior to the examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Additional information - - - Morkload - - - Morkload - - - Additional information -	5	nume	rical grade			
Ining of the course (e. g. completion of exercises). Contents We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and ford out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes Intended learning outcomes of the students are able to model typical problems in computer science as graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph algorithms. Courses (type, number of weekly contact hours, language – if other than Geman) V + 0 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than Geman, versimination offered – if not every senester, information on whether module is creditable for bonus) written examination (approx. 50 to 6 on minutes); if announced by the lecturer by four weeks prior to the examination of places	Duratio	n	Module level	Other prerequisites		
We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and colourings, work with planar graphs and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes The students are able to model typical problems in computer science as graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph problems. In addition, the participants are able to decide which tool from the course helps solve a given graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph problems. Courses (type, number of weekly contact hours, language – if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every senester, information on whether module is creditable for bonus) written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 3: 20 minutes) groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Aldication of places	1 seme	ster	undergraduate			
colourings, work with planar graphs and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable. Intended learning outcomes The students are able to model typical problems in computer science as graph problems. In addition, the parti- cipants are able to decide which tool from the course helps solve a given graph algorithms. Courses, students learn in detail how to estimate the run time of given graph algorithms. Courses (type, number of weekly contact hours, language – if other than Geman) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than Geman, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 50 to 6 on inutes); if announced by the lecturer by four weeks prior to the examina- tion date, the written examination can be replaced by an oral examination of one candidate each or an oral ex- amination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Allocation of places Motkload Referred to in LPO 1 (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013)	Conten	ts				
The students are able to model typical problems in computer science as graph problems. In addition, the participants are able to decide which tool from the course helps solve a given graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph algorithms. COURSES (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German) v + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus) written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination is groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Allocation of places Additional information Workload Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	colouri of grap	ngs, wo h probl	ork with planar graphs an ems, we also become far	d find out how the ra niliar with new conce	nking algorithm of G pts, for example how	loogle works. Using the examples
cipants are able to decide which tool from the course helps solve a given graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph algorithms. Courses (type, number of weekly contact hours, language – if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination differed – if not every semester, information on val ex- amination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Allocation of places Additional information Workload Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013)	Intende	ed learn	ning outcomes			
V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examina- tion date, the written examination can be replaced by an oral examination of one candidate each or an oral ex- amination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Allocation of places Additional information Workload Teaching cycle Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	cipants	are ab	le to decide which tool fr	om the course helps	solve a given graph	problem algorithmically. In this
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examina- tion date, the written examination can be replaced by an oral examination of one candidate each or an oral ex- amination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Allocation of places Additional information Workload Teaching cycle Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
module is creditable for bonus) written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner Allocation of places	V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
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Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013)	tion dat aminat	te, the ion in g	written examination can roups (one candidate ea	be replaced by an ora ch: 15 minutes, group	al examination of on os of 2: 20 minutes,	e candidate each or an oral ex-
Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013)						
 Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013)		· ·				
 Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013)	Additio	nal info	ormation			
Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)						
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Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)						
Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	Teachir	ng cycl	6			
Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)						
Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	- · · · · · · · · · · · · · · · · · · ·					
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)	Module appears in					
	Bachelo Bachelo Bachelo					
Master's degree (1 major) Mathematics (2012) Master's degree (1 major) Computational Mathematics (2012)		-	-		2)	

Module title				Abbreviation		
Algorit	Algorithm and data structures				10-l-ADS-102-m01	
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Informatik (Compute	r Science)	Institute of Comput	er Science	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate		site to assessment: ecturer at the beginn		scope to be
Conten	ts					
		nalysis of algorithms, re trees, graphs, basic gra			ods, data structures	, abstract da-
Intende	ed lear	ning outcomes				
studen prograi	ts are f ms. The	are able to independent amiliar with the basic p e students are able to es	aradigms of the design stimate the run-time be	n of algorithms and a ehaviour of algorithm	are able to apply the	m in practical
		number of weekly contact hours			11.	
		rmation on SWS (weekly				
		Sessment (type, scope, lang ole for bonus)	uage — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
tion da aminat tion of	te, the ion in ន្ one ca	nation (approx. 80 to 90 written examination ca groups. A 80 to 90 minu ndidate each, a 30 minu n groups of 3.	n be replaced by an ora te written examinatior	al examination of on is equivalent to a 2	e candidate each or o minute (approx.) o	an oral ex- oral examina-
Allocat	ion of _l	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
		nformatik Theoretische nformatik Theoretische	_			
Module appears in						
Bachelor' degree (1 major) Computer Science (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Master's degree (1 major) Digital Humanities (2011) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)						
11131 310			is active dyninasium			
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 128 / 237

Module title				Abbreviation		
Software Technology 10-I-ST-1				10-l-ST-102-m01		
Module	e coord	inator		Module offered by		
Dean of	f Studi	es Informatik (Compute	er Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate		site to assessment: ecturer at the beginn		scope to be
Conten	ts					
bases a	and obj	ed software developme fect-relational mapping d process, agile softwa	, foundations of web p	rogramming (HTML,	XML), software deve	
Intende	ed lear	ning outcomes				
The stu softwar		possess a fundamental ems.	theoretical and practi	cal knowledge on the	e design and develop	oment of
Course	S (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
V + Ü (r	no infor	mation on SWS (weekl	y contact hours) and co	ourse language avail	able)	
		sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
tion of	one ca ation i	groups. A 80 to 90 minu ndidate each, a 30 min n groups of 3. Dlaces				
		4 9	_			
Additio	natin	ormation				
Worklo	ad					
 To a shire		_	_			
Teachir	ig cycl	e				
		LPOI (examination regulation		immes)		
		atenbanksysteme und Datenbanksysteme und	_			
Module appears in						
Bachelor' degree (1 major) Computer Science (2010)						
Bachelor' degree (1 major) Mathematics (2012)						
Bachelor' degree (1 major) Mathematics (2013)						
Bachelor' degree (1 major) Economathematics (2012)						
Bachelor' degree (1 major) Business Information Systems (2013) Bachelor' degree (1 major) Human-Computer Systems (2010)						
Bachelor' degree (1 major) Computational Mathematics (2012)						
Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)						
	-	ree (1 major) Aerospace		-		
Pachala	with a me	ior Mathematics (asca)	IA411 \\\/?:	• gonorated of Average		D200 120 / 227
Dachelor S	with i ma	jor Mathematics (2012)		• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema		page 129 / 237



Bachelor' degree (1 major) Aerospace Computer Science (2011) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 130 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title				Abbreviation	
Practical Course in Programming				10-I-PP-102-m01	
Module	Module coordinator			Module offered by	
Dean of	fStudie	es Informatik (Computer S	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme:	ster	undergraduate	Admission prerequis announced by the le		exercises (type and scope to be ing of the course).
Conten	ts				
The pro	gramm	iing language Java. Indep	endent creation of sr	nall to middle-sized	, high-quality Java programs.
Intende	ed learn	ning outcomes			
The stu	dents a	are able to independently	develop small to mi	ddle-sized, high-qua	ality Java programs.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no in	format	ion on SWS (weekly cont	act hours) and course	e language available	2)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
tion dat aminat tion of	te, the ion in g one car	written examination can groups. A 80 to 90 minute	be replaced by an ora written examination	al examination of on is equivalent to a 20	four weeks prior to the examina- e candidate each or an oral ex- o minute (approx.) oral examina- 2 and a 40 minute (approx.) oral
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Additio	nal info	ormation on module dura	ition: 1 to 2 semesters	5.	
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
§ 49 (1)	1. c) Ir	nformatik Praktische Soft	wareentwicklung		
§ 69 (1)	1. d) Ir	nformatik Praktische Soft	wareentwicklung		
Module appears in					
Bachelor' degree (1 major) Computer Science (2010)					
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)					
Bachelor' degree (1 major) Computational Mathematics (2012)					
Bachelor' degree (1 major) Computational Mathematics (2012)					
Bachelor' degree (1 major) Aerospace Computer Science (2009)					
Bachelor' degree (1 major) Aerospace Computer Science (2011)					
Master	's degre	ee (1 major) Digital Huma	nities (2011)		
		mination for the teaching			
First sta	ate exa	mination for the teaching	g degree Gymnasium	Computer Science (2	2009)

Module title				Abbreviation
Practical course in software 10-I-SWP-102-m01				
Module coordinator			Module offered by	ļ
Dean of Stud	lies Informatik (Computer	Science)	Institute of Comput	er Science
ECTS Meth	nod of grading	Only after succ. con	npl. of module(s)	
10 (not)	successfully completed			
Duration	Module level	Other prerequisites		
1 semester	undergraduate			
Contents				
cation of solu		ML) and milestones, i	user manual, prograi	uirements specifications, specifi- mming documentation, presenta-
Intended lea	rning outcomes			
The students small teams.		lls for the design, dev	velopment and exect	ution of a software project in
Courses (type,	number of weekly contact hours, I	anguage — if other than Ger	rman)	
P (no informa	ation on SWS (weekly cont	act hours) and cours	e language available	2)
Method of as module is credita		ge — if other than German, o	examination offered — if no	ot every semester, information on whether
completion c	of project assignments, pre	esentation		
Allocation of	places			
Additional in	formation			
Workload				
Teaching cyc	le			
Referred to in LPO I (examination regulations for teaching-degree programmes)				
§ 49 (1) 1. c) Informatik Praktische Softwareentwicklung § 69 (1) 1. d) Informatik Praktische Softwareentwicklung				
Module appears in				
Bachelor' degree (1 major) Computer Science (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)				
rifst state ex	amination for the teaching	g degree Gymnasium	Computer Science (2	2009)

Module title				Abbreviation	
Digital computer systems				10-I-RAL-102-m01	
Module coordinator				Module offered by	
Dean of	fStudie	es Informatik (Computer	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate	Admission prerequis announced by the le		exercises (type and scope to be ing of the course).
Conten	ts				
					nchronous and asynchronous cir- e programming, memory hierar-
Intende	ed learı	ning outcomes			
ming of	⁻ easy r				up to the design and program- vare description languages for the
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
module is	creditab	le for bonus)			ot every semester, information on whether
tion dat aminati tion of o	te, the ion in g one cai	written examination can groups. A 80 to 90 minute	be replaced by an ora written examination	al examination of on is equivalent to a 2	four weeks prior to the examina- e candidate each or an oral ex- o minute (approx.) oral examina- 2 and a 40 minute (approx.) oral
Allocat					
	•				
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cvcl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
§ 69 (1) 1. c) Informatik Technische Informatik					
Module appears in					
	Bachelor' degree (1 major) Computer Science (2010)				
	Bachelor' degree (1 major) Mathematics (2012)				
Bachelor' degree (1 major) Mathematics (2013)					
	-	ree (1 major) Computatio ree (1 major) Computatio			
	-			-	2009)
First state examination for the teaching degree Gymnasium Computer Science (2009)					

Module title				Abbreviation		
Information Transmission					10-l-lÜ-102-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Computer Scienc	e III	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme:	ster	undergraduate	Admission prerequis announced by the le		exercises (type and scope to be ing of the course).	
Conten	ts					
theory,	spectr		, modulation techniq	jue, structure of digi	d fault correction, information tal transmission systems, intro-	
Intende	ed leari	ning outcomes				
		possess a technical, theo a knowledge that is nece	•	-	ructure of systems for information	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
tion dat aminati tion of	te, the ion in g one cai	written examination can roups. A 80 to 90 minute	be replaced by an ora e written examination	al examination of on is equivalent to a 2	four weeks prior to the examina- e candidate each or an oral ex- o minute (approx.) oral examina- 2 and a 40 minute (approx.) oral	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
§ 69 (1)	1. c) Ir	nformatik Technische Info	ormatik			
Module appears in						
Bachelor' degree (1 major) Computer Science (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2011)						
	-		•		2009)	
	First state examination for the teaching degree Gymnasium Computer Science (2009)					

Module title					Abbreviation
Theore	tical in	formatics			10-I-TI-102-m01
Module coordinator				Module offered by	
Dean of	fStudi	es Informatik (Computer S	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate	Admission prerequise announced by the le		exercises (type and scope to be ing of the course).
Conten	ts				
		, decidability, countabilit ılar sets, generative gram			nctions and circuits, finite auto- ensitive languages.
Intende	ed lear	ning outcomes			
tability,	comp		olean functions and c	ircuits, finite autom	nputability, decidability, coun- ata and regular sets, generative
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
module is written tion dat aminati tion of	examin examin te, the ion in g one can	le for bonus) nation (approx. 80 to 90 i written examination can groups. A 80 to 90 minute	minutes). If announce be replaced by an ora e written examination	ed by the lecturer by al examination of on is equivalent to a 2	four weeks prior to the examina- e candidate each or an oral ex- o minute (approx.) oral examina- 2 and a 40 minute (approx.) oral
Allocat					
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ıg cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
		nformatik Theoretische In nformatik Theoretische In			
Module appears in					
Bachelo Bachelo Bachelo Bachelo First sta	Bachelor' degree (1 major) Computer Science (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)				

Module title					Abbreviation	
Logic for informatics 10-I-LOG-102-m01					10-l-LOG-102-m01	
Module	e coord	inator		Module offered by		
Dean o	fStudi	es Informatik (Computer	Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
6	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Admission prerequis announced by the le		exercises (type and scope to be ing of the course).	
Conten	ts					
		mantics of propositional ets, syntax and semantic		ıd normal forms, Ho	rn formulas, SAT, resolution, infi-	
Intende	ed lear	ning outcomes				
					ositional logic, equivalence and semantics of predicate logic.	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
tion da	te, the		be replaced by an ora	al examination of on	four weeks prior to the examina- e candidate each or an oral ex- groups of 3: 25 minutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ıg cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module appears in						
Bachel	or' deg	ree (1 major) Computer S	cience (2010)			
	-	ree (1 major) Mathematic				
	-	ree (1 major) Mathematic		``		
	-	ree (1 major) Computatio				
	-	ree (1 major) Computatio mination for the teaching		-	2009)	

Module title					Abbreviation	
Databases				10-I-DB-102-m01		
Module	e coord	inator		Module offered by		
Dean of	f Studi	es Informatik (Compute	r Science)	Institute of Comput	er Science	
ECTS Method of grading			Only after succ. con	npl. of module(s)		
5		rical grade		•		
Duratio		Module level	Other prerequisites			
1 seme		undergraduate	Admission prerequi	site to assessment: o ecturer at the beginn		scope to be
Conten	ts					
Relation ment.	nal alg	ebra and complex SQL	statements; database	planning and norma	l forms; transaction	manage-
Intende	ed lear	ning outcomes				
The stu	dents	possess knowledge ab	out database modellin	g and queries in SQL	as well as transaction	ons.
Course	S (type, r	number of weekly contact hours	s, language — if other than Ge	rman)		
V + Ü (r	no infoi	rmation on SWS (weekl	y contact hours) and co	ourse language avail	able)	
		Sessment (type, scope, lang Ile for bonus)	uage — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
if annot ced by nutes, g Langua	unced an oral groups ge of a	nation (approx. 50 to 60 by the lecturer by four v examination of one ca of 2: 20 minutes, grou ssessment: German, En	veeks prior to the exan ndidate each or an ora os of 3: 25 minutes)	l examination in grou		
Allocat	ion of _l	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
)atenbanksysteme und)atenbanksysteme und				
Module	e appea	ars in				
Bachel	or' deg	ree (1 major) Computer	Science (2010)			
	-	ree (1 major) Mathemat				
Bachelor' degree (1 major) Mathematics (2013)						
Bachelor' degree (1 major) Business Information Systems (2013)						
Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2012)						
	Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009)					
	Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2011)					
	Bachelor' degree (1 major) Functional Materials (2012)					
Master's degree (1 major) Computer Science (2010)						
Master	's degr	ee (1 major) Mathemati	cs (2012)			
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • 6 achelor (180 ECTS) Mathema	-	page 137 / 237

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Master's degree (1 major) Mathematics (2010) Master's degree (1 major) Physics (2010) Master's degree (1 major) Physics (2011) Master's degree (1 major) Nanostructure Technology (2011) Master's degree (1 major) Nanostructure Technology (2010) Master's degree (1 major) Computational Mathematics (2012) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)

Module title					Abbreviation	
Object	Object-oriented Programming					
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Informatik (Computer	Science)	Institute of Comput	er Science	
ECTS		od of grading	Only after succ. con	pl. of module(s)		
5	1	rical grade				
Duratio		Module level	Other prerequisites			
1 seme		undergraduate	Admission prerequi	site to assessment: e ecturer at the beginn		scope to be
Conten	ts			ecturer at the beginn	ing of the course).	
Polymo ment.	orphism	n, generic programming,	meta programming, v	veb programming, te	mplates, document	manage-
Intende	ed lear	ning outcomes				
The stu their pr		are proficient in the diffe use.	rent paradigms of ob	ect-oriented prograr	nming and have exp	erience in
Course	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)		
V + Ü (r	no infoi	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)	
Metho	d of ass	Sessment (type, scope, langu	age — if other than German,	examination offered — if no	t every semester, informati	on on whether
module is	s creditab	le for bonus)	_			
tion da aminat Langua	te, the ion in g ige of a	nation (approx. 50 to 60 written examination car groups (one candidate e ssessment: German, En	be replaced by an or ach: 15 minutes, grou	al examination of on os of 2: 20 minutes,	e candidate each or	an oral ex-
Allocat	ion of _l	olaces				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	mmes)		
Module	e appea	ars in				
		ree (1 major) Computer S	Science (2010)			
	-	ree (1 major) Mathemati				
	-	ree (1 major) Mathemati				
Bachel	Bachelor' degree (1 major) Business Information Systems (2013)					
Bachelor' degree (1 major) Computational Mathematics (2012)						
Bachelor' degree (1 major) Computational Mathematics (2013)						
Bachelor' degree (1 major) Aerospace Computer Science (2009)						
	Bachelor' degree (1 major) Aerospace Computer Science (2011)					
	Master's degree (1 major) Computer Science (2010)					
Master's degree (1 major) Physics (2010)						
Master's degree (1 major) Physics (2011) Master's degree (1 major) Nanostructure Technology (2011)						
Master	's degr	ee (1 major) Nanostructi	ire Technology (2011)			
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 139 / 237



Master's degree (1 major) Nanostructure Technology (2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 140 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation	
Theory	of Con	ıplexity			10-I-KT-102-m01	
Module	e coord	inator		Module offered by	Module offered by	
Dean of Studies Informatik (Computer S			r Science)	Institute of Comput	er Science	
ECTS	Methe	od of grading	Only after succ. cor	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites	;		
1 seme	ster	undergraduate		site to assessment: ecturer at the beginn		scope to be
Conten	ts					
sumpti	on vers	easurements and class sus computation time, c roblem, completeness p	leterminism versus inc	determinism, hierarcl	hical theorems, tran	
Intende	ed lear	ning outcomes				
classes determ	s, gene inism v	possess a fundamental ral relationships betwee versus indeterminism, h ing reduction, interactiv	en space and time classierarchical theorems,	sses, memory consur	nption versus comp	utation time,
Course	S (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
V + Ü (r	no info	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)	
		sessment (type, scope, lang ole for bonus)	uage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
tion da aminat	te, the ion in ន្	nation (approx. 50 to 60 written examination ca groups (one candidate 6 ssessment: German, Er	n be replaced by an or each: 15 minutes, grou	al examination of on ps of 2: 20 minutes,	e candidate each or	an oral ex-
Allocat	ion of _l	places				
Additio	onal inf	ormation				
	_					
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
Module	e appea	ars in				
Bachel	or' deg	ree (1 major) Computer	Science (2010)			
Bachelor' degree (1 major) Mathematics (2012)						
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012)						
	-	ree (1 major) Computati ree (1 major) Computati				
	-			-		
	Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2011)					
	-	ee (1 major) Computer S				
Master	's degr	ee (1 major) Mathemati	cs (2012)			
Bachelor's	with 1 ma	jor Mathematics (2012)	-	g • generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 141 / 237



Master's degree (1 major) Mathematics (2010) Master's degree (1 major) Computational Mathematics (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 142 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation	
Automation and Control Technology 10-I-AR-102-m01						
Module	e coord	inator		Module offered by		
holder of the Chair of Computer Science			nce VII	Institute of Comput	er Science	
ECTS	1	od of grading	Only after succ. con	· · ·		-
8	nume	rical grade				
Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate	Admission prerequi	site to assessment: ecturer at the beginn		scope to be
Conten	ts	κ				
functio structu nes, co	n, plan re of Pe mmun	t, controller types, bas etri nets, Petri nets for ication between proces	ndamental principles of ic feedback loop, funda automisation, machine ss computers and perip nunication, real-time op	amental principles of -related structure of hery devices, softwa	f control engineering processing computa re for automation sy	g, automata, ation machi-
Intend	ed lear	ning outcomes				
The stu	idents	master the fundamenta	als of automation and c	ontrol.		
Course	S (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
	-		y contact hours) and co		able)	
module is	s creditab	le for bonus)	guage — if other than German, o minutes). If announc			
tion da aminat tion of examir	te, the ion in រួ one ca nation i	written examination ca groups. A 80 to 90 min ndidate each, a 30 min n groups of 3.	in be replaced by an or- ute written examination ute (approx.) oral exam nglish if agreed upon w	al examination of on n is equivalent to a 2 nination in groups of	e candidate each or o minute (approx.) o	an oral ex- oral examina-
Allocat	ion of _l	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cvcl	e				
Referre	ed to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
	<u></u>					
Module	annea	ars in				
Module appears in Bachelor' degree (1 major) Computer Science (2010)						
Bachelor' degree (1 major) Mathematics (2012)						
Bachelor' degree (1 major) Mathematics (2013)						
Bachelor' degree (1 major) Computational Mathematics (2012)						
Bachelor' degree (1 major) Computational Mathematics (2013)						
Bachelor' degree (1 major) Aerospace Computer Science (2009)						
Bachelor' degree (1 major) Aerospace Computer Science (2011) Master's degree (1 major) Computer Science (2010)						
	-					
		ee (1 major) Mathemat		• generated 26-Aug-2024 • (exam. reg.	page 143 / 237
		,	-	achelor (180 ECTS) Mathema	-	1/

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Master's degree (1 major) Mathematics (2010) Master's degree (1 major) Physics (2010) Master's degree (1 major) Physics (2011) Master's degree (1 major) Nanostructure Technology (2011) Master's degree (1 major) Nanostructure Technology (2010) Master's degree (1 major) Computational Mathematics (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)

Module title				Abbreviation		
Compu	Computer Architecture 10-I-RAK-102-m01					
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Informatik (Compute	r Science)	Institute of Comput	er Science	
ECTS		od of grading	Only after succ. con	· · ·		
5		rical grade		•		
Duratio		Module level	Other prerequisites	i		
1 seme	ster	undergraduate	Admission prerequi	site to assessment: o ecturer at the beginn		scope to be
Conten	ts					
		t architectures, comma vector processors, mult		pipelining, statical a	and dynamic instruct	ion schedu:
Intende	ed lear	ning outcomes				
		master the most import l operating systems.	ant techniques to desi	gn fast computers as	s well as their intera	tion with
Course	S (type, r	number of weekly contact hours	s, language — if other than Ge	rman)		
V + Ü (r	no infoi	rmation on SWS (weekl	y contact hours) and co	ourse language avail	able)	
		Sessment (type, scope, lang Ile for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
tion da aminat	te, the ion in ន្ ge of a	nation (approx. 50 to 60 written examination ca groups (one candidate o ssessment: German, Er	n be replaced by an or each: 15 minutes, grou	al examination of on ps of 2: 20 minutes,	e candidate each or	an oral ex-
Allocal		Jaces				
	nal inf					
Additio	natini	ormation				
Worklo	ad					
 Taashii		-				
Teaching cycle						
	J 4					
		LPOI (examination regulation		immes)		
-		nformatik Technische Ir •	iformatik			
Module						
	-	ree (1 major) Computer				
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)						
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012)						
Bachelor' degree (1 major) Computational Mathematics (2013)						
Bachelor' degree (1 major) Aerospace Computer Science (2009)						
Bachelor' degree (1 major) Aerospace Computer Science (2011)						
Master's degree (1 major) Computer Science (2010)						
Master's degree (1 major) Mathematics (2012)						
Master's degree (1 major) Mathematics (2010)						
Master's degree (1 major) Physics (2010)						
Master	s degr	ee (1 major) Physics (20	011)			
Bachelor's	with 1 ma	jor Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 145 / 237

Master's degree (1 major) Nanostructure Technology (2011) Master's degree (1 major) Nanostructure Technology (2010) Master's degree (1 major) Computational Mathematics (2012)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 146 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title		Abbreviation			
Computer Net	Computer Networks and Communication Systems 10-I-RK-102-m01				
Module coordinator			Module offered by		
holder of the	Chair of Computer Scie	nce III	Institute of Comput	er Science	
ECTS Metho	od of grading	Only after succ. cor	npl. of module(s)		
8 nume	rical grade				
Duration	Module level	Other prerequisites	;		
1 semester	undergraduate		site to assessment: ecturer at the beginn		scope to be
Contents					
of computer n and structure chies, dataflo and ISO archi	computer and commun etworks and communion of computer networks: w control and traffic co tecture models. Interne unication networks: fur	cation systems: proble network structure, net ntrol, transfer network t: structure and basic r	m statement and intr work access, access . Communication pro nechanism, TCP/IP, 1	oduction to method methods, digital tra tocols: fundamental routing, network ma	architecture nsfer hierar- principles nagement.
Intended lear	ning outcomes				
The students	possess an intricate kn damental principles to		re of computer netwo	orks and communica	tion systems.
	number of weekly contact hour		rman)		
	rmation on SWS (weekl			able)	
	sessment (type, scope, lang	·			on on whether
tion date, the amination in s tion of one ca examination i	nation (approx. 80 to 9 written examination ca groups. A 80 to 90 min ndidate each, a 30 min n groups of 3. Issessment: German, E	n be replaced by an or ute written examination ute (approx.) oral exan	al examination of on n is equivalent to a 2 nination in groups of	e candidate each or o minute (approx.) o	an oral ex- ral examina-
Allocation of	places				
Additional inf	ormation				
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appea	ars in				
Bachelor' degree (1 major) Computer Science (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009)					
Bachelor's with 1 ma	jor mathematics (2012)		g • generated 26-Aug-2024 • 6 Bachelor (180 ECTS) Mathema	-	page 147 / 237

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Bachelor' degree (1 major) Aerospace Computer Science (2011) Master's degree (1 major) Computer Science (2010) Master's degree (1 major) Mathematics (2012) Master's degree (1 major) Mathematics (2010) Master's degree (1 major) Computational Mathematics (2012) First state examination for the teaching degree Gymnasium Computer Science (2009)



Application-oriented Subject Philosophy

(40 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 149 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Philosophy Compulsory Courses

(20 ECTS credits)

F		
Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 150 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title				Abbreviation	
Philosophy and the sciences					06-B-P2-102-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Theoretical Philos	sophy	Institute of Philoso	ohy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	By way of exception assessments.	, additional prerequi	sites are listed in the section on
Conten	ts				
		o the theory of intellectua osophical bases of the na			humanities and the social
Intende	ed lear	ning outcomes			
ability f limits o though sophica schema	to orga of vario t, cultu al texts ata - ab	nise topics into overarchi us intellectual disciplines re, and knowledge Forma and issues - ability to or ility to present philosoph	ing historical, social, s - knowledge of, and al outcomes (skills to ganise concepts and nical positions in a st	and political schema ability to criticise, b be tested in assessi philosophical positi ructured and linguis	ins of our knowledge culture - ata - insight into the scope and asic assumptions in systems of ments): - ability to analyse philo- ons into overarching intellectual tically appropriate manner
		number of weekly contact hours, l			
compo • o	nent. 6-B-P2	-1-102: V + S (no informat	tion on SWS (weekly	contact hours) and c	sted separately for each module ourse language available) course language available)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether
	iless st	ated otherwise, successf			e components as specified be- successful completion of all indi-
 Assessment in module component o6-B-P2-1-102: Philosophical principles of arts and humanities Philosophical principles of arts and humanities 5 ECTS, Method of grading: numerical grade written examination (approx. 90 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of seminar (a maximum of 2 incidents of unexcused absence). Assessment in module component o6-B-P2-2-102: Philosophical principles of natural sciences and technology Philosophical principles of natural sciences and technology 5 ECTS, Method of grading: numerical grade written examination (approx. 90 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of seminar (a maximum of 2 incidents of unexcused absence). 					
Allocation of places					
	Only as part of pool of general key skills (ASQ): max. 20 places. Places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by				
Additio	nal inf	ormation			

Workload

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2010) Bachelor's degree (1 major, 1 minor) Philosophy (2010) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2013) Bachelor's degree (1 major, 1 minor) Philosophy (2013) Bachelor's degree (2 majors) Philosophy (2010) Bachelor's degree (2 majors) Philosophy (2013)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 152 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title				Abbreviation
Principles of Philosophy				06-B-P1-122-m01
Module coordinator			Module offered by	
holder of the	Chair of Practical Philoso	phy	Institute of Philoso	phy
ECTS Meth	od of grading	Only after succ. con	npl. of module(s)	
	rical grade			
	<u> </u>			
Duration	Module level	Other prerequisites		
1 semester	undergraduate	By way of exception assessments.	, additional prerequi	isites are listed in the section on
Contents				
				emic writing and research in phi-
	duction to formal logic; in	nsight into a period ii	n the history of philo	sophy.
· · · · · · · · · · · · · · · · · · ·	ning outcomes			olems and positions in philoso-
mastery of the (skills to be te neral principle	e fundamentals of formal ested in assessments): - a es of argumentation such	logic - insight into a pability to apply the prast as transparency, cor	period in the history inciples of logic to an insistency, discursivit	ollow the rules of scholarly work - of philosophy Formal outcomes rgumentation - ability to apply ge- cy, completeness, and generalisa- nd rhetorically appropriate way
Courses (type, t	number of weekly contact hours, l	anguage — if other than Ger	rman)	
• 06-B-P1 • 06-B-P1	Sessment (type, scope, langua	on SWS (weekly con tion on SWS (weekly	tact hours) and cour contact hours) and c	
 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 o6-B-P1-1-122: Introduction to academic working techniques 2 ECTS, Method of grading: (not) successfully completed 1 small written assessment (approx. 1 page) and/or 1 oral assessment (approx. 5 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises (a maximum of 2 incidents of unexcused absence). Assessment in module component o6-B-P1-2-122: Introduction to formal logic 3 ECTS, Method of grading: (not) successfully completed 				
 written examination (approx. 90 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of seminar (a maximum of 2 incidents of unexcused absence). Assessment in module component o6-B-P1-3-122: Principles of Philosophy: historical epochs, main works, authors Principles of Philosophy: historical epochs, main works, authors 5 ECTS, Method of grading: numerical grade oral examination (approx. 25 minutes) Other prerequisites: Admission prerequisite to assessment: regular attendance of seminar (a maximum of 2 incidents of unexcused absence). Allocation of places 				

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Additional information

Workload

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Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2013) Bachelor's degree (1 major, 1 minor) Philosophy (2013) Bachelor's degree (2 majors) Philosophy (2013)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 154 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Philosophy Compulsory Electives

(20 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 155 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title				Abbreviation	
Theoretical Philosophy				06-B-P3-122-m01	
Module coordinator			Module offered by		
holder of th	e Chair of Theoretical Philo	sophy	Institute of Philoso	phy	
ECTS Me	thod of grading	Only after succ. com	pl. of module(s)		
10 nui	nerical grade				
Duration	Module level	Other prerequisites			
1 semester	undergraduate	Admission prerequis		regular attendance of seminars (a bsence).	
Contents					
Introductio	n to theoretical philosophy,	using basic problem	s and paradigmatic t	texts.	
Intended le	arning outcomes				
tical philos between di mentation of theoretic losophical	ophy; an overview of system fferent methods in theoretic and justification within theo al opinion formation. Forma texts and issues; ability to o	ns and disciplines in cal philosophy; famili pretical philosophy; a al outcomes (skills to organise concepts and	theoretical philosop arity with, and abilit bility to reflect on th be tested in the ass d philosophical posi	oblems and positions in theore- hy; ability to use and distinguish y to evaluate, methods of argu- e factors involved in the process essment): Ability to analyse phi- tions into overarching intellectu- istically appropriate manner.	
Courses (typ	e, number of weekly contact hours, I	anguage — if other than Ger	man)		
V + S + S (n	o information on SWS (wee	kly contact hours) and	d course language a	vailable)	
Method of	assessment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
	table for bonus)		· · · · ·		
	ation (approx. 25 minutes)	in one of the seminal	rs (seminar to be sel	ected by students)	
Allocation	or places				
Additional	information				
Auditionat	inormation				
Workload					
Teaching c	/cle	-			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2013) Bachelor's degree (1 major, 1 minor) Philosophy (2013) Bachelor's degree (2 majors) Philosophy (2013)					

Module	Module title Abbreviation				
Practica	Practical Philosophy 06-B-P4-122-m01				
Module coordinator				Module offered by	
holder	of the O	Chair of Practical Philoso	phy	Institute of Philoso	phy
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate	Admission prerequis		regular attendance of seminars (a bsence).
Conten	ts				
Introdu	ction to	o practical philosophy, us	sing basic problems a	and paradigmatic tex	xts.
Intende	ed learr	ning outcomes			
tical ph betwee tation a ral opin texts ar	Intended learning outcomes: Content-related outcomes: An overview of basic problems and positions in prac- tical philosophy; an overview of systems and disciplines in practical philosophy; ability to use and distinguish between different methods in practical philosophy; knowledge of, and ability to evaluate, methods of argumen- tation and justification within practical philosophy; ability to reflect on the factors involved in the process of mo- ral opinion formation. Formal outcomes (skills to be tested in the assessment): Ability to analyse philosophical texts and issues; ability to organise concepts and philosophical positions into overarching intellectual schema- ta; ability to present philosophical positions in a structured and linguistically appropriate manner.				
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	· ·
V + S +	S (no i	nformation on SWS (weel	kly contact hours) and	d course language a	vailable)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written	examir	nation (approx. 120 minu	tes) in one of the sen	ninars (seminar to be	e selected by students)
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
		ree (1 major) Mathematic ree (1 major) Mathematic			

Module title				Abbreviation		
History	of Phi	losophy			06-B-P5-122-m01	
Module	e coord	inator		Module offered by		
holder	of the (Chair of the History of Phi	losophy	Institute of Philoso	phy	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Admission prerequis maximum of 2 incide		regular attendance of seminars (a bsence).	
Conten	ts					
Introdu	ction to	o the history of philosoph	ny, using basic proble	ems and paradigmat	ic texts.	
Intende	ed learı	ning outcomes				
with, un story of texts ar	ndersta philos nd posi	anding of, and ability to e sophy Formal outcomes (s	valuate methods and skills to be tested in t e concepts and philo	l questions of schola he assessment): 4. sophical positions i	Is of historiography 3. familiarity arly inquiry with respect to the hi- ability to analyse philosophical nto overarching intellectual sche- lly appropriate manner	
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)		
V + S +	S (no i	nformation on SWS (weel	kly contact hours) and	d course language a	vailable)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
written	examiı	nation (approx. 120 minu	tes) in one of the sem	ninars (seminar to be	e selected by students)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	-	ree (1 major) Mathematic				
Bachel	or' deg	ree (1 major) Mathematic	s (2013)			

Module title Abbreviation					Abbreviation
Issues of research in philosophy 06-B-P6-122-m01					06-B-P6-122-m01
Modul	e coord	inator		Module offered by	
holder	ofthe	Chair of the History of Phi	ilosophy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate	Admission prerequi maximum of 2 incid		regular attendance of seminars (a bsence).
Conter	nts				
Selecte	ed rese	arch issues in philosophy	<i>.</i>		
Intend	ed lear	ning outcomes			
philoso issues	ophy. F ; ability	ormal outcomes (skills to	be tested in the asso tolarly work; ability to	essment): Ability to a	standing of scholarly inquiry in analyse philosophical texts and elop philosophical issues and to
Course	es (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
V + S +	S (no i	nformation on SWS (wee	kly contact hours) an	d course language a	vailable)
		sessment (type, scope, langua ile for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
oral ex	aminat	ion (approx. 25 minutes)	in one of the semina	rs (seminar to be se	lected by students)
Allocat	tion of _l	olaces			
Additio	onal inf	ormation			
	_				
Worklo	ad				
	-				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
Module appears in					
Bachelor' degree (1 major) Mathematics (2012)					
Bachelor' degree (1 major) Mathematics (2013)					
	Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2013) Bachelor's degree (1 major, 1 minor) Philosophy (2013)				
		gree (2 majors) Philosopl			

Module title Abbreviation					
Text A	nalysis	: Ancient Philosophy			06-B-W1-122-m01
Module coordinator Module o					<u>.</u>
holder	ofthe	Chair of the History of Ph	ilosophy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	Admission prerequi maximum of 2 incid		regular attendance of seminar (a bsence).
Conter	Its				
Ancien	t philos	sophical texts.			
Intend	ed lear	ning outcomes			
(when intelleo	writing ctual sc		organise historical co endently develop and	oncepts and philoso d present philosophi	ollow the rules of scholarly work phical positions into overarching ical issues
S (no i	nforma	tion on SWS (weekly con	tact hours) and cours	e language available	e)
		Sessment (type, scope, langua ole for bonus)	age — if other than German, o	examination offered — if no	ot every semester, information on whether
written	exami	nation (approx. 120 minu	utes) or term paper (a	pprox. 12 pages)	
Allocat	ion of _l	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Modul					
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)					
2001101			\)/		

Module title Abbreviation					
Text Ar	nalysis	: Medieval Philosophy			06-B-W2-122-m01
Module coordinator Module offere					I
holder	ofthe	Chair of the History of P	hilosophy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate		site to assessment: ents of unexcused a	regular attendance of seminar (a bsence).
Conten	Its				
Mediev	/al phil	osophical texts.			
Intend	ed lear	ning outcomes			
in the a ability f Course	assessr to inde s (type, r	ment): Ability to analyse pendently develop phil number of weekly contact hours	e philosophical texts an osophical issues and t s, language — if other than Gen	nd issues; ability to o present them in ar rman)	
S (no ir	nforma	tion on SWS (weekly co	ntact hours) and cours	e language available	e)
		s essment (type, scope, lang ole for bonus)	uage — if other than German,	examination offered — if no	ot every semester, information on whether
written	exami	nation (approx. 120 mir	nutes) or term paper (a	pprox. 12 pages)	
Allocat	ion of _l	places			
Additic	onal inf	ormation			
Worklo	ad				
	-				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module			icc (2012)		
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)					

Modul	Module title Abbreviation					
Text A	Text Analysis: Modern Philosophy 06-B-W3-122-m01					
Module coordinator Module offered by						
holder	ofthe	Chair of Practical Philo	osophy	Institute of Philoso	phy	
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ester	undergraduate		site to assessment: ents of unexcused a	regular attendance of seminar (a bsence).	
Conter	nts					
Moder	n philo	sophical texts.				
Intend	ed lear	ning outcomes				
follow linguis	the rule tically a	es of scholarly work; a appropriate manner.	bility to independently o	develop philosophic	phical texts and issues; ability to al issues and to present them in a	
			urs, language — if other than Ge			
		· · · · ·	contact hours) and cours			
		Sessment (type, scope, la ole for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether	
written	ı exami	nation (approx. 120 m	inutes)			
Allocat	tion of	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
	-					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
	e appea					
	Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)					

Module	Module title Abbreviation					
Text Ar	Text Analysis: Contemporary Philosophy o6-B-W4-122-mo1					
Module	e coord	inator		Module offered by	<u> </u>	
holder	ofthe	Chair of Practical Philoso	phy	Institute of Philoso	phy	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ster	undergraduate		site to assessment: ents of unexcused a	regular attendance of seminar (a bsence).	
Conten	Its					
Conten	nporary	philosophical texts.				
Intend	ed lear	ning outcomes				
texts a es and	nd issu to pres	es; ability to follow the r sent them in a linguistica	ules of scholarly work ally appropriate mann	; ability to independ er.	bility to analyse philosophical dently develop philosophical issu-	
		number of weekly contact hours,			<u>`````````````````````````````````````</u>	
		tion on SWS (weekly con				
		Sessment (type, scope, langu vle for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether	
written	exami	nation (approx. 120 mini	utes)			
Allocat	ion of _l	places				
Additio	onal inf	ormation				
Worklo	ad		_			
			_			
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
	Module appears in					
	Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)					

Module title					Abbreviation
Basic disciplines of theoretical philosophy					06-B-W5-122-m01
Module coordinator				Module offered by	1
holder	ofthe	Chair of Theoretical Philo	osophy	Institute of Philosc	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate	Admission prerequi maximum of 2 incid		regular attendance of seminar (a absence).
Conter	nts				
Proble	ms in a	nd theoretical models of	f basic disciplines of t	heoretical philosop	hy.
Intend	ed lear	ning outcomes			
issues presen	; ability it them		holarly work; ability to priate manner.	o independently dev	analyse philosophical texts and elop philosophical issues and to
	_	tion on SWS (weekly con			2)
module i	s creditab	le for bonus)	age — if other than German,	examination offered — if n	ot every semester, information on whether
	-	pprox. 12 pages)	_		
Alloca	tion of _l	places			
 Additi		ormation	_		
Auun					
Worklo	hed				
Teachi	ng cycl	P			
		•	_		
Referre	ed to in	LPOI (examination regulation	ns for teaching-degree progra	mmes)	
		examination regulation			
Modul	e appea	ars in			
Bachelor' degree (1 major) Mathematics (2012)					
Bachelor' degree (1 major) Mathematics (2013)					
	Bachelor's degree (1 major, 1 minor) Philosophy (2013)				
Bache	lor's de	gree (2 majors) Philosop)hy (2013)		

Module title					Abbreviation	
Specif	ic disci	plines of theoretical phi		06-B-W6-122-m01		
Module coordinator Module			Module offered by	/		
holder	ofthe	Chair of Theoretical Phil	osophy	Institute of Philos	ophy	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate	Admission prerequi maximum of 2 incid		: regular attendance of seminar (a absence).	
Conter	nts					
Proble	ms in a	nd theoretical models o	f special disciplines o	f theoretical philos	ophy.	
Intend	ed lear	ning outcomes				
phy. Fo ability	ormal o to follo	utcomes (skills to be tes	sted in the assessmen work; ability to indepe	t): Ability to analyse	sciplines of theoretical philoso- e philosophical texts and issues; nilosophical issues and to present	
Course	es (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
S (no i	nforma	tion on SWS (weekly co	ntact hours) and cours	e language availab	le)	
		Sessment (type, scope, langu ole for bonus)	uage — if other than German,	examination offered — if r	not every semester, information on whether	
term p	aper (a	pprox. 12 pages) or oral	examination (approx.	25 minutes)		
Alloca	tion of _l	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	ons for teaching-degree progra	ammes)		
Modul	e appea	ars in				
Bachelor' degree (1 major) Mathematics (2012)						
Bachelor' degree (1 major) Mathematics (2013)						
	Bachelor's degree (1 major, 1 minor) Philosophy (2013) Bachelor's degree (2 majors) Philosophy (2013)					
васпе	ior's de	gree (2 majors) Philoso	pny (2013)			

Module title					Abbreviation
Basic o	discipli	nes of practical philosop		06-B-W7-122-m01	
Modul	e coord	inator		Module offered by	<u> </u>
holder	ofthe	Chair of Practical Philoso	phy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. com	npl. of module(s)	
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate	Admission prerequi maximum of 2 incid		regular attendance of seminar (a bsence).
Conter	nts				
Proble	ms in a	nd theoretical models of	basic disciplines of p	oractical philosophy.	
Intend	ed lear	ning outcomes			
es; abi sent th	lity to f iem in a		rly work; ability to ind e manner.	ependently develop	lyse philosophical texts and issuphilosophical issues and to pre-
	_	tion on SWS (weekly contact hours, t			
module i	s creditab	sessment (type, scope, langua le for bonus) pprox. 12 pages) or oral e			ot every semester, information on whether
Alloca	tion of	olaces			
Additio	onal inf	ormation	-		
Worklo	bad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
Modul	e appea	ars in			
	-	ree (1 major) Mathematic			
	Bachelor' degree (1 major) Mathematics (2013)				
	Bachelor's degree (1 major, 1 minor) Philosophy (2013) Bachelor's degree (2 majors) Philosophy (2013)				
Dache		giee (2 majors) rimosopi	119 (2013)		

Modul	Module title Abbreviation					
Proble	ms of C	lder Philosophy			06-B-W9-122-m01	
Modul	e coord	inator		Module offered by	<u> </u>	
		Chair of the History of Phi	losonhy	Institute of Philoso	nhy	
ECTS	1	od of grading	Only after succ. con			
5		rical grade				
Duratio		Module level	Other prerequisites			
1 seme	-	undergraduate	Admission prerequi		regular attendance of seminar (a bsence).	
Conter	nts					
Proble	ms in a	ncient and medieval phil	osophy.			
Intend	ed lear	ning outcomes				
ries. Fo tation; pleten	ormal o ability ess, an	utcomes (skills to be test to apply general principle	ed in the assessmen es of argumentation s	t): Ability to apply th such as transparency	l concepts, arguments, and theo- le principles of logic to argumen- y, consistency, discursivity, com- ctured and linguistically and rhe-	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
S (no i	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)	
			ge — if other than German,	examination offered — if no	ot every semester, information on whether	
		le for bonus)				
		pprox. 12 pages)				
Allocat	tion of _l	places				
Additio	onal inf	ormation				
Worklo						
 Toochi						
Teacin	ng cycl	e				
 Deferre	d to in		fortooching des	mmac)		
Referred to in LPO I (examination regulations for teaching-degree programmes)						
 Module appears in						
			5 (2012)			
	Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)					
		gree (1 major, 1 minor) Pl				
Bachel	or's de	gree (2 majors) Philosopl	1y (2013)			

Module title					Abbreviation	
Specifi	Specific disciplines of practical philosophy				06-B-W8-122-m01	
Module coordinator				Module offered by		
holder	ofthe	Chair of Practical Philoso	phy	Institute of Philoso	phy	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate	Admission prerequi maximum of 2 incid		regular attendance of seminar (a absence).	
Conter	Its					
Proble	ms in a	nd theoretical models of	special disciplines of	f practical philosoph	ηγ.	
Intend	ed lear	ning outcomes				
Formal to follo in a lin	outcor w the r guistica	nes (skills to be tested in ules of scholarly work; al ally appropriate manner.	the assessment): Ab bility to independentl	vility to analyse philo y develop philosoph	sciplines of practical philosophy. osophical texts and issues; ability hical issues and to present them	
Course	S (type, r	number of weekly contact hours,	language — if other than Ger	rman)		
S (no i	nforma	tion on SWS (weekly cont	tact hours) and cours	e language availabl	e)	
		Sessment (type, scope, langua le for bonus)	age — if other than German, o	examination offered — if n	ot every semester, information on whether	
term pa	aper (a	pprox. 12 pages) or oral e	examination (approx.	25 minutes)		
Allocat	ion of _l	places				
			-			
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)		
Modul	e appea	ars in				
Bachelor' degree (1 major) Mathematics (2012)						
Bachelor' degree (1 major) Mathematics (2013)						
	Bachelor's degree (1 major, 1 minor) Philosophy (2013) Bachelor's degree (2 majors) Philosophy (2013)					
Dachel	or s de	gree (2 majors) Philosop	ny (2013)			

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Module title Abbreviation					
Problems of Modern Philosophy					06-B-W10-122-m01
Module coordinator Module offe					<u>I</u>
holder	ofthe	Chair of the History of Phi	losophy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate		site to assessment: ents of unexcused a	regular attendance of seminar (a bsence).
Conter	nts				
Proble	ms in e	arly modern and contemp	oorary philosophy.		
Intend	ed lear	ning outcomes			
logic to discurs guistic	o argum sivity, c ally and	entation; ability to apply ompleteness, and genera d rhetorically appropriate	general principles o alisability; ability to p way.	f argumentation suc resent philosophica	Ability to apply the principles of h as transparency, consistency, Il issues in a structured and lin-
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	man)	
		tion on SWS (weekly cont			
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
		pprox. 12 pages)			
Alloca	tion of _l	olaces			
Additio	onal inf	ormation			
Worklo	oad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
	e appea				
Bache Bache	lor' deg lor's de	ree (1 major) Mathematic ree (1 major) Mathematic gree (1 major, 1 minor) Ph gree (2 majors) Philosoph	s (2013) nilosophy (2013)		

Modul	Module title Abbreviation					
Proble	Problems of Theoretical Philosophy 06-B-W11-122-m01					
Modul	e coord	inator		Module offered by	1	
holder	ofthe	Chair of Theoretical Philos	sophy	Institute of Philoso	phy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate		site to assessment: ents of unexcused a	regular attendance of seminar (a bsence).	
Conter	nts					
Proble	ms in th	neoretical philosophy.				
Intend	ed lear	ning outcomes				
menta comple	tion; ab eteness	ility to apply general prin	ciples of argumentat	ion such as transpa	the principles of logic to argu- rency, consistency, discursivity, structured and linguistically and	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
S (no i	nformat	tion on SWS (weekly cont	act hours) and cours	e language available	2)	
		sessment (type, scope, langua ıle for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
term p	aper (a	pprox. 12 pages)				
Alloca	tion of _l	olaces				
Additio	onal inf	ormation				
Worklo	oad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor' degree (1 major) Mathematics (2012)						
	Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Philosophy (2013)					
Dache		giee (1 major, 1 mmor) Pr				

Module title Abbreviation						
Proble	Problems of Practical Philosophy 06-B-W12-122-m01					
Modul	e coord	inator		Module offered by	1	
holder	ofthe	Chair of Practical Philoso	phy	Institute of Philoso	phy	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate	Admission prerequi maximum of 2 incid		regular attendance of seminar (a bsence).	
Conter	its					
Proble	ms in p	ractical philosophy.				
Intend	ed lear	ning outcomes				
tation; pleten	ability ess, an	to apply general principle	es of argumentation s	such as transparency	e principles of logic to argumen- y, consistency, discursivity, com- ctured and linguistically and rhe-	
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Ger	rman)		
S (no i	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
term p	aper (a	pprox. 12 pages)				
Allocat	tion of _l	olaces				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor' degree (1 major) Mathematics (2012)						
Bachelor' degree (1 major) Mathematics (2013) Bachelor's degree (1 major, 1 minor) Philosophy (2013)						
Bachel	or's de	gree (1 major, 1 minor) Pr	1110SOPhy (2013)			



Application-oriented Subject Physics

(40 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 172 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Physics Compulsory Electives 1: Basics (16 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 173 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	1

Module	title		Abbreviation			
Introduction to Physics Part 1 for students of Physics Related Minor Subjects					11-ENNF1-062-m01	
Module coordinator Mod				Module offered by	Module offered by	
Managi	ng Dire	ector of the Institute of Ap	plied Physics	Faculty of Physics a	and Astronomy	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
7		rical grade				
Duratio		Module level	Other prerequisites			
1 semes	ster	undergraduate				
Conten	ts	U U				
		oration theory, thermody	namics.			
		ning outcomes				
		nave basic knowledge of	nhysics for engineeri	ng students		
		umber of weekly contact hours, l		-		
		mation on SWS (weekly d			ahla)	
		*				
		essment (type, scope, langua le for bonus)	ge — If other than German, e	examination offered — if no	ot every semester, information on whether	
		nation (approx. 120 minu	tes)			
Allocati			(00)			
		f pool of general key skill	s (ASO), 20 places P	laces will be allocat	ed by lot	
		ormation	3 (A3Q). 20 places. 1			
Additio	nat mit					
Worklo	ad					
WUTKIU	au					
Teeshin		-				
Teachir	ig cycl	e				
Referre	a to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
		•				
Module						
	-	ree (1 major) Mathematic ree (1 major) Mathematic				
	-	ree (1 major) Mathematic				
	-	ree (1 major) Mathematic				
	-	ree (1 major) Mathematic	-			
	-	ree (1 major) Technology		lls (2009)		
	-					
Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009)						
Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014)						
Bachelor' degree (1 major) Computational Mathematics (2012)						
	Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)					
	Bachelor' degree (1 major) Aerospace Computer Science (2009)					
		ree (1 major) Aerospace (
	-	ree (1 major) Aerospace (•			
	-	ree (1 major) Functional N	•	-		
	-	ree (1 major) Technology		Ils (2006)		

Bachelor's with 1 major Mathematics (2012)

Module title					Abbreviation	
Introduction to Physics Part 2 for students of Physics Related Minor Subjects					11-ENNF2-062-m01	
Module coordinator				Module offered by		
Managing Director of the Institute of Applied Physics				Faculty of Physics a	and Astronomy	
ECTS		od of grading	Only after succ. com	· · · · · ·	· · · · · · · · · · · · · · · · · · ·	
7		rical grade		. <u></u>		
, Duratio		Module level	Other prerequisites			
1 seme:		undergraduate				
Conten	ts	0				
		ctricity, magnetism, optic	s. Atomic Physics.			
		ning outcomes				
		nave basic knowledge of	nhysics for engineeri	ng students		
				-		
		umber of weekly contact hours, l			abla)	
		mation on SWS (weekly o				
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
		nation (approx. 120 minu	tes)			
Allocat						
		f pool of general key skill	s (ASO): 20 places P	laces will be allocat	ed by lot	
	· ·	ormation	3 (ASQ). 20 places. 1			
Auditio						
Worklo						
WUIKIU	au					
Toochir		•				
Teachir	ig cycl	e				
 Deferme						
Referre	a to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module			- (0)			
	-	ree (1 major) Mathematic ree (1 major) Mathematic				
	-	ree (1 major) Mathematic				
	-	ree (1 major) Mathematic				
	-	ree (1 major) Mathematic				
	-	ree (1 major) Technology		als (2009)		
Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009)						
Bachelor' degree (1 major) Computational Mathematics (2014)						
Bachelor' degree (1 major) Computational Mathematics (2012)						
	Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)					
	Bachelor' degree (1 major) Aerospace Computer Science (2009)					
	Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014)					
	-	ree (1 major) Aerospace (•			
	-	ree (1 major) Functional N	•			
	-	ree (1 major) Technology		als (2006)		

Module title					Abbreviation		
	Classical Physics (Mechanics, Thermodynamics, Waves, Oscillations, Electrici- 11-KP-092-mo1						
ty, Magnetism and Optics)							
Module coordinator				Module offered by			
Managi	ng Dire	ector of the Institute of	Applied Physics	Faculty of Physics a	nd Astronomy		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
16	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
2 seme	ster	undergraduate	-	ematische Rechenme sics) for first-semeste	-	Mathemati-	
Conten	ts						
gnetic v tion. In Non-lin rent. M	vibratio teractic earity a echanis	ns and waves, radiations ons and central forces. and chaos. Mechanics sms of conduction. Ma	lynamics, vibrations, w on and wave optics. Tim General relativity. Mecl of non-rigid bodies. Ga gnetostatics. Electroma aves. Geometric optics.	e, room and motion. hanics of rigid bodie sses. Thermodynami agnetic induction. Ma	Physical values. Fo s. Friction. Vibration cs. Electrostatics. El	rce and mo- and waves. lectric cur-	
Intende	ed learr	ning outcomes					
ves, sci are able	ience o e to ap	f electricity, magnetisn	rinciples and connection, electromagnetic vibra ods to the formulation natical-physical tasks.	ations and waves, ra	diation and wave op	otics. They	
Course	S (type, n	umber of weekly contact hour	s, language — if other than Ger	rman)			
tact ho Klassis	urs) + Ü che Ph) (2 weekly contact hou ysik 2 (Elektromagneti	en, Wärme) (Classical P urs), once a year (winter smus, Optik) (Classical hours), once a year (su	r semester) Physics 2 (Electroma			
		e essment (type, scope, lang le for bonus)	guage — if other than German, o	examination offered — if no	t every semester, informati	on on whether	
1. Topic on (a 2. Topic tion (3. Topic	 This module has the following assessment components 1. Topics covered in lectures and exercises in part 1 (Klassische Physik 1 (Classical Physics 1)): written examination (approx. 120 minutes). 2. Topics covered in lectures and exercises in part 2 (Klassische Physik 2 (Classical Physics 2)): written examination (approx. 120 minutes). 3. Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). 						
Assessment component 3 will be offered in German; English if agreed upon with examiner(s). Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment com- ponents 1 and 2. To qualify for admission to assessment component 3, students must pass assessment component 1 and/or 2. Students are highly recommended to attend both courses Klassische Physik 1 (Classical Physics 1) and Klassi- sche Physik 2 (Classical Physics 2). The topics discussed in these two courses will be covered in assessment component 3. Students must register for assessment components 1 through 3 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 and must then pass assessment component 3. The grade achieved in assessment component 1 or 2 (whichever is better) and the grade achieved in assessment component 3 will each count 50% towards the overall grade awarded for the module. Allocation of places							
Allocat		naces					
Bachelor's	witn 1 maj	or Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathemat	-	page 176 / 237	

dditional information					
Vorkload					
eaching cycle					
eferred to in LPO I (examination regulations for teaching-degree programmes)					
Iodule appears in					
achelor' degree (1 major) Mathematics (2012)					
achelor' degree (1 major) Mathematics (2013)					
achelor' degree (1 major) Physics (2010)					
achelor' degree (1 major) Physics (2012)					
achelor' degree (1 major) Nanostructure Technology (2010)					
achelor' degree (1 major) Nanostructure Technology (2012)					
achelor' degree (1 major) Mathematical Physics (2009)					
Bachelor' degree (1 major) Mathematical Physics (2012)					
Bachelor' degree (1 major) Computational Mathematics (2012)					
Bachelor' degree (1 major) Computational Mathematics (2013)					
achelor's degree (1 major, 1 minor) Physics (Minor, 2010)					
o final examination Special study offering (2010)					

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 177 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Physics Compulsory Electives 2: Lab Course

(9 ECTS credits)

Exactly one of the two modules 11-P-PA Physikalisches Praktikum Teil A (Physics Practical Course A) and 11-PNNF Physikalisches Praktikum für Studierende eines physiknahen Nebenfachs (Physics Practical Course for Students of Physics-related Minors) must be taken; students are not permitted to take both of these modules.

Module title					Abbreviation
Physics Laboratory Course for students of Physics Related Minor Subject					11-PNNF-062-m01
Module coordinator				Module offered by	
Managi	ing Dire	ector of the Institute of Ap	oplied Physics	Faculty of Physics a	and Astronomy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
3	(not)	successfully completed		-	
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten		undergraduate	<u> </u>		
	nics, vi	bration theory, thermody	namics, optics, X-ray	s, nuclear magnetic	resonance, Atomic and Nuclear
Intende	ed lear	ning outcomes			
The stu	dents	know the principles of Ph	ysics.		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
		tion on SWS (weekly cont			e)
		· · · · · ·			ot every semester, information on whether
		le for bonus)			or every semester, mornation on whether
a) oral	test (ai	oprox. 15 minutes) during	experiment and b) u	ngraded written exa	mination (approx. 90 minutes)
Allocat		·			
		f pool of general key skill	c (ASO), 15 places P	lacos will be allocat	ad by lat
		ormation	5 (ASQ). 15 places. P		
Additio	nat m	ormation			
Worklo	ad				
	-				
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Bachel	or' deg	ree (1 major) Mathematic	s (2008)		
		ree (1 major) Mathematic			
Bachel	or' deg	ree (1 major) Mathematic	s (2012)		
Bachel	or' deg	ree (1 major) Mathematic	s (2013)		
Bachel	or' deg	ree (1 major) Mathematic	s (2007)		
Bachelor' degree (1 major) Technology of Functional Materials (2009)					
Bachelor' degree (1 major) Technology of Functional Materials (2010)					
Bachelor' degree (1 major) Computational Mathematics (2009)					
Bachelor' degree (1 major) Computational Mathematics (2014)					
	-				
	-			<i></i>	
	-			als (2006)	
Bachel Bachel Bachel					

Bachelor's with 1 major Mathematics (2012)

Module title					Abbreviation	
Lab Co	urse A				11-P-PA-112-m01	
Module coordinator				Module offered by		
Managing Director of the Institute of Ap			plied Physics	Faculty of Physics a	and Astronomy	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
pagatic tests, w	on, grap vriting o	ohs, linear regression, av of lab reports and publica	erage values and sta		or, error approximation and pro- tribution functions, significance	
Intende	ed lear	ning outcomes				
le to in measu princip	depeno ring pro les of s	lently plan and conduct e otocol. They are able to ev tatistics and to draw, pre	experiments, to cooperative cooperation of the measuring sent and discuss the measure of the mea	erate with others, an g results on the basi conclusions.	menting techniques. They are ab- id to document the results in a is of error propagation and of the	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
Ü (1 we Beispie	ekly co ele aus	ntact hour), once a year	(winter semester)		ysis): V (1 weekly contact hour) + hermodynamics and Electricity,	
Method	d of ass	sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
		le for bonus)				
1. Topic 2. Lab c ted if	cs cove course: f a Test		ises: written examina and evaluating the e alk (with discussion)	xperiments will be c	inutes) considered successfully comple- ' understanding of the physics-re-	
Succes	sful co	mpletion of approx. 50%	of practice work is a	prerequisite for adm	ission to assessment component	
portuni	ty to re	take element a) and/or e	lement b).		. Students will be offered one op-	
Studen re atter Electric	Students must register for assessment components 1 and 2 online (details to be announced). Students must attend Auswertung von Messungen und Fehlerrechnung (Measurements and Data Analysis) befo- re attending Beispiele aus Mechanik, Wärmelehre und Elektrik (Examples from Mechanics, Thermodynamics and Electricity).					
To pass this module, students must pass both assessment component 1 and assessment component 2.						
Allocation of places						
Additional information						
Worklo	Workload					
Teaching cycle						

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Referred to in LPO I (examination regulations for teaching-degree programmes)
 § 53 (1) 1. a) Physik Mechanik, Wärmelehre, Elektrizitätslehre, Optik, der speziellen Relativitätstheorie § 53 (1) 1. c) Physik physikalische Grundpraktika § 77 (1) 1. a) Physik "Grundlagen der Experimentalphysik" § 77 (1) 1. d) Physik "physikalische Praktika"
Module appears in
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Physics (2012)
Bachelor' degree (1 major) Nanostructure Technology (2012)
Bachelor' degree (1 major) Mathematical Physics (2012)
Bachelor' degree (1 major) Computational Mathematics (2012)
Bachelor' degree (1 major) Computational Mathematics (2013)
First state examination for the teaching degree Grundschule Physics (2009)
First state examination for the teaching degree Hauptschule Physics (2009)
First state examination for the teaching degree Realschule Physics (2009)
First state examination for the teaching degree Gymnasium Physics (2009)
First state examination for the teaching degree Mittelschule Physics (2013)

Module title					Abbreviation	
Basic P	Practica	ll Course B (Minor Studie	s)		11-P-NFB-122-m01	
Module	e coord	inator		Module offered by		
Managing Director of the Institute of Applied Physics			oplied Physics	Faculty of Physics a	nd Astronomy	
ECTS	Meth	Method of grading Only after succ. compl. of module(s)				
4	(not)	successfully completed	11-P-PA			
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Contents						
		of optics, vibrations and	waves, science of ele	ectricity and circuits	with electric components.	
		ning outcomes				
measu princip	ring pro		valuate the measurin esent and discuss the	g results on the basi conclusions.	d to document the results in a s of error propagation and of the	
		tion on SWS (weekly cont				
		Sessment (type, scope, langua ele for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
(with d the mo the ass	iscussi dule co sessme	on; approx. 30 minutes) omponent. Talks that wer nt have to be successfull	to test the candidate' e not successfully co	s understanding of t	can be repeated once. And b) talk the physics-related contents of eated once. Both components of	
Allocat	ion of	places				
Additio	onal inf	ormation				
Additio	nal inf	ormation on module dura	tion: 1 to 2 semester	5.		
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)		
Module	e appea	ars in				
Bachel	or' deg	ree (1 major) Mathematic	s (2014)			
	-	ree (1 major) Mathematic				
	-	ree (1 major) Mathematic				
	-	ree (1 major) Computatio		•		
	-	ree (1 major) Computatio				
Bachel	or' deg	ree (1 major) Computatio	nal Mathematics (20:	13)		



Application-oriented Subject Physics Compulsory Electives 3

(24 ECTS credits)

Out of several module components covering the same contents, students may only use one each. This means that the following combinations are not permitted:

- 11-KM may neither be combined with 11-QAM nor with 11-FKP.

- 11-STE may neither be combined with 11-ST nor with 11-ED.

- 11-TQM may neither be combined with 11-TM nor with 11-QM.

Module title					Abbreviation	
Conder	ised Ma	atter (Quanta, Atoms, Mo	olecules, Solid State	Physics)	11-KM-092-m01	
Module coordinator				Module offered by		
Managing Director of the Institute of Ap			oplied Physics	lied Physics Faculty of Physics and Astronomy		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
16	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
2 seme	ster	undergraduate				
Conten	ts					
Quantu Atoms i mical b (FEG). C	in Physin exter onding Crystal	sics. Mathematical formu mal fields. Many-electror g. Molecule rotations and	lation of quantum mo atoms. Optical trans vibrations. Bonding lattice. Structure dete	echanics. Quantum i itions and spectrose in crystals. Mechani	ls. Experimental principles of mechanics of hydrogen atoms. copy. Laser. Molecules and che- cal properties. Free electron gas ibrations (phonons). Thermal	
Intende	ed learr	ning outcomes	· · · · · ·			
The stu ding an They ar	dents l d struc e able i	know the basic contexts a ture, lattice dynamics, th	nermal properties, pri ethods to the formula	nciples of electronic ation of modern phy	tomic Physics and solids (bon- properties (free electron gas)). sical contexts and autonomously	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
kly con Konder	tact ho sierte	urs) + Ü (2 weekly contac	t hours), once a year vsik 1) (Condensed Ma	(winter semester) atter 2 (Solid State P	ta, Atoms, Molecules)): V (4 wee- hysics)): V (4 weekly contact	
Method	l of ass	•	· · · · · · · · · · · · · · · · · · ·		t every semester, information on whether	
 Topic amin Topic amin Topic minu Assessi Succes ponent 	 This module has the following assessment components 1. Topics covered in lectures and exercises in part 1 (Kondensierte Materie 1 (Condensed Matter 1)): written examination (approx. 120 minutes). 2. Topics covered in lectures and exercises in part 2 (Kondensierte Materie 2 (Condensed Matter 2)): written examination (approx. 120 minutes). 3. Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). Assessment component 3 will be offered in German; English if agreed upon with examiner(s). Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment components 1 and 2. 					
Studen Konder sessme Studen To pass compor The gra	To qualify for admission to assessment component 3, students must pass assessment component 1 and/or 2. Students are highly recommended to attend both courses Kondensierte Materie 1 (Condensed Matter 1) and Kondensierte Materie 2 (Condensed Matter 2). The topics discussed in these two courses will be covered in as- sessment component 3. Students must register for assessment components 1 through 3 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 and must then pass assessment component 3. The grade achieved in assessment component 1 or 2 (whichever is better) and the grade achieved in assessment component 3 will each count 50% towards the overall grade awarded for the module.					
Allocat		-				
L						

Additional information
Workload
Teaching cycle
Referred to in LPO I (examination regulations for teaching-degree programmes)
Module appears in
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Physics (2010)
Bachelor' degree (1 major) Physics (2012)
Bachelor' degree (1 major) Nanostructure Technology (2010)
Bachelor' degree (1 major) Nanostructure Technology (2012)
Bachelor' degree (1 major) Mathematical Physics (2009)
Bachelor' degree (1 major) Mathematical Physics (2012)
Bachelor' degree (1 major) Computational Mathematics (2012)
Bachelor' degree (1 major) Computational Mathematics (2013)
Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 185 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Statist	e title				Abbreviation			
Statistical Mechanics, Thermodynamics and Electrodynamics 11-STE-c				lics	11-STE-092-m01			
Module	e coord	inator		Module offered by				
Manag and As		ector of the Institute of sics	Theoretical Physics	Faculty of Physics and Astronomy				
ECTS	Meth	od of grading	Only after succ. cor	ompl. of module(s)				
16	nume	rical grade						
Duratio	on	Module level	Other prerequisites	isites				
2 seme	ester	undergraduate	10-M1-PHY and 10-N	d 10-M2-PHY or 10-M1-NST and 10-M2-NST				
Conten	Its							
ticles,	critical	-	quations, electrostati		istics, systems of interacting par- Maxwell equations in matter, dy-			
Intende	ed lear	ning outcomes						
trodyna	amics,	thermodynamics and st	tatistical mechanics. T	hey are familiar with	They know the principles of elec- the corresponding calculation ion of problems in this area.			
Course	S (type, r	number of weekly contact hours	s, language — if other than Ge	erman)	·			
hours) Theore	+ Ü (2) tische	weekly contact hours),	once a year (winter sen etical Electrodynamics)	mester)	dynamics): V (4 weekly contact t hours) + Ü (2 weekly contact			
		sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	ot every semester, information on whether			
1. Topic char 2. Topic mics 3. Topic	cs cove nics and cs cove)): writ cs cove	d Thermodynamics)): wi red in lectures and exe ten examination (appro	rcises in part 1 (Statist ritten examination (ap rcises in part 2 (Theor x. 120 minutes). rcises in parts 1 and 2	prox. 120 minutes). etische Elektrodynan : oral examination of	Thermodynamik (Statistical Me- nik (Theoretical Electrodyna- one candidate each (approx. 30			
Succes ponent Studen cal Mee discuss	sful co ts 1 and ts are l chanics sed in t ts mus	12. highly recommended to and Thermodynamics) hese two courses will b t register for assessmen odule, students must f	% of practice work eac attend both courses S and Theoretische Ele be covered in assessm nt components 1 throu	h is a prerequisite fo Statistische Mechani ktrodynamik (Theore ent component 3. Igh 3 online (details t	r admission to assessment com- k und Thermodynamik (Statisti- tical Electrodynamics). The topic			
To pass compo The gra	ide ach							
To pass compo The gra	nde ach nent 3	ieved in assessment co will each count 50% tov			he grade achieved in assessment odule.			
To pass compo The gra compo	nde ach nent 3	ieved in assessment co will each count 50% tov						
To pass compo The gra compo Allocat	ade ach nent 3 ion of 	ieved in assessment co will each count 50% tov						
To pass compo The gra compo Allocat	ade ach nent 3 ion of 	ieved in assessment co will each count 50% tov blaces						
To pass compo The gra compo Allocat Additic	ide ach nent 3 ion of p	ieved in assessment co will each count 50% tov blaces						
To pass compo The gra compo Allocat	ide ach nent 3 ion of p	ieved in assessment co will each count 50% tov blaces						

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Mathematics (2012)

Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Physics (2010)

Bachelor' degree (1 major) Physics (2012)

Bachelor' degree (1 major) Nanostructure Technology (2010)

Bachelor' degree (1 major) Mathematical Physics (2009)

Bachelor' degree (1 major) Mathematical Physics (2012)

Bachelor' degree (1 major) Computational Mathematics (2012)

Bachelor' degree (1 major) Computational Mathematics (2013)

Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 187 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation		
Theore	tical M	echanics and Quantum M	Aechanics		11-TQM-092-m01		
Module	e coord	inator		Module offered by			
Managi and Ast	-	ector of the Institute of Th sics	eoretical Physics	Faculty of Physics a	nd Astronomy		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
16 numerical grade							
Duratio	n	Module level	Other prerequisites				
2 seme	ster	undergraduate	10-M1-PHY, 10-M2-P	PHY and 11-MPI-3 or 1	o-M1-NST, 10-M2-NST and MPI-3		
Conten	ts						
Probler Limits o	ns of co of class . Angul	entral forces, minor vibra ical physics. Schrödinge ar momentum and spin. I	tions, rigid body, mo r equation, mathema	tion in electromagne tical principles of qu	conservation laws. Applications: tic fields. Relativistic dynamics. tantum mechanics, harmonic os- n. Motion in electric fields. Ma-		
Intende	ed learı	ning outcomes					
miliar w of quar	vith the itum th retical	e principles of theoretical eory. They are able to ap	mechanics and their ply the acquired calc	r different formulatio ulation methods and	Theoretical Physics. They are fa- ns and understand the principles I techniques to simple problems I knowledge of basic mathemati-		
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ge	rman)			
year (w Quante (summ	inter se nmech er seme	emester) anik (Quantum Mechanio ester)	cs): V (4 weekly conta	act hours) + Ü (2 wee	(2 weekly contact hours), once a kly contact hours), once a year		
		s essment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	t every semester, information on whether		
 Topic amin Topic tion (3. Topic 	 This module has the following assessment components 1. Topics covered in lectures and exercises in part 1 (Theoretische Mechanik (Theoretical Mechanics)): written examination (approx. 120 minutes). 2. Topics covered in lectures and exercises in part 2 (Quantenmechanik (Quantum Mechanics)): written examination (approx. 120 minutes). 3. Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). 						
Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment com- ponents 1 and 2. To qualify for admission to assessment component 3, students must pass assessment component 1 and/or 2. Students are highly recommended to attend both courses Theoretische Mechanik (Theoretical Mechanics) and Quantenmechanik (Quantum Mechanics). The topics discussed in these two courses will be covered in as- sessment component 3. Students must register for assessment components 1 through 3 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 and must then pass assessment component 3. The grade achieved in assessment component 1 or 2 (whichever is better) and the grade achieved in assessment component 3 will each count 50% towards the overall grade awarded for the module.							
Allocat	ion of p	olaces					

Additional information
Workload
Teaching cycle
Referred to in LPO I (examination regulations for teaching-degree programmes)
Module appears in
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Physics (2010)
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Physics (2010) Bachelor' degree (1 major) Physics (2012)
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Physics (2010) Bachelor' degree (1 major) Physics (2012) Bachelor' degree (1 major) Mathematical Physics (2009)
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Physics (2010) Bachelor' degree (1 major) Physics (2012) Bachelor' degree (1 major) Mathematical Physics (2009) Bachelor' degree (1 major) Mathematical Physics (2012)

Module title				_	Abbreviation		
Theore	tical E	lectrodynamics			11-ED-092-m01		
Modul	e coord	linator		Module offered by	offered by		
Manag and As		rector of the Institute of	f Theoretical Physics	Faculty of Physics and Astronomy			
ECTS	<u> </u>	od of grading	Only after succ. compl. of module(s)				
8	1	erical grade					
Duration Module level Other prerequis			Other prerequisites	5			
1 semester undergraduate			sessment. The lecture at the beginning of sidered a declaration dents have obtaine the course of the se sessment into effect ted to assessment	es must be met to qu urer will inform stude the course. Registrat on of will to seek adn d the qualification for emester, the lecturer ct. Students who mee in the current or in th date, students will h sment anew.	nts about the respe ion for the course w hission to assessme or admission to asse will put their registr et all prerequisites w e subsequent seme	ctive details vill be con- ent. If stu- essment over ation for as- vill be admit- ester. For as-	
Conter	nts	1					
Princip matter		electrostatics, magneto	ostatics, Maxwell equat	ions, covariant form	ulation, electrodyna	mics and	
		rning outcomes					
			e principles of classical	electrodynamics and	I the required calcul	ation me-	
	S (type,	number of weekly contact hou	ırs, language — if other than Ge	rman)			
V + Ü (no info	ormation on SWS (week	kly contact hours) and c	ourse language avail	able)		
		sessment (type, scope, lan ble for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, informa	tion on whether	
otherw Assess and wi	vise spo sment o Il be ai	ecified) offered: When and how	inutes, for modules with v often assessment will under observance of Se	be offered depends	on the method of as	sessment	
		places	· · · · · · · · · · · · · · · · · · ·				
Additio	onal in	formation					
Worklo	ad						
Teachi	ng cyc	le					
Referre	ed to ir	LPOI (examination regula	tions for teaching-degree progr	ammes)			
Modul							
	-	gree (1 major) Mathema gree (1 major) Mathema					
	-		icture Technology (2012	2)			
	-	ajor Mathematics (2012)		g • generated 26-Aug-2024 • /	exam. reg.	page 190 / 237	
				Bachelor (180 ECTS) Mathema			



Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 191 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title Abbreviation								
Solid Si	tate Ph	ysics 1			11-FKP-092-m01			
Module	coord	inator		Module offered by				
Managing Director of the Institute of Ap			Applied Physics	plied Physics Faculty of Physics and Astronomy				
ECTS Method of grading			Only after succ. con	Only after succ. compl. of module(s)				
8	nume	rical grade						
Duratio	n	Module level	Other prerequisites					
1 semester undergraduate		sessment. The lecture at the beginning of sidered a declaration dents have obtained the course of the set sessment into effect ted to assessment i sessment at a later	Certain prerequisites must be met to qualify for admission to as- sessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be con- sidered a declaration of will to seek admission to assessment. If stu- dents have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for as- sessment into effect. Students who meet all prerequisites will be admit- ted to assessment in the current or in the subsequent semester. For as- sessment at a later date, students will have to obtain the qualification for admission to assessment anew.					
Content	ts							
		of solids: Bonding and lectron gas).	structure, lattice dyna	mics, thermal proper	ties, principles of el	ectronic pro-		
Intende	d learr	ning outcomes						
			ontexts and principles tronic properties (free		nd structure, lattice	dynamics,		
Courses	5 (type, n	umber of weekly contact hour	s, language — if other than Ge	rman)				
V + Ü (n	o infor	mation on SWS (week	y contact hours) and co	ourse language avail	able)			
		e essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informat	on on whether		
otherwi Assessi and will	se spe ment o l be an	cified) ffered: When and how nounced in due form u	nutes, for modules with often assessment will nder observance of Se	be offered depends o	on the method of ass	sessment		
		egulations) 2009.						
Allocati	ion of p	olaces						
Additio	nal inf	ormation						
 Workloa	ad							
Teachin	ıg cycl	9						
Referre	d to in	LPO I (examination regulati	ons for teaching-degree progra	ammes)				
Module	appea	rs in						
Bachelo Bachelo	or' degi or' degi	ree (1 major) Mathema ree (1 major) Mathema ree (1 major) Mathema ree (1 major) Mathema	tics (2013) tical Physics (2009)					
Bachelor's v	with 1 maj	or Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 192 / 237		



Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 193 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation	
Theore	tical M	echanics			11-TM-092-m01	
Module	e coord	inator		Module offered by		
Manag and As		ector of the Institute o	f Theoretical Physics			
ECTS		od of grading	Only after succ. con	compl. of module(s)		
8	1	rical grade		•		
Duratio		Module level	Other prerequisites			
1 semesterundergraduateCertain prerequisites1 semesterundergraduateCertain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective de at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If st dents have obtained the qualification for admission to assessment the course of the semester, the lecturer will put their registration for sessment into effect. Students who meet all prerequisites will be a ted to assessment in the current or in the subsequent semester. For sessment at a later date, students will have to obtain the qualification to assessment admission to assessment anew.			ctive details ill be con- nt. If stu- ssment over ation for as- ill be admit- ster. For as-			
Conten	ts		· · · · · · · · · · · · · · · · · · ·			
Newtor	nian me	echanics, Lagrangian a	and Hamiltonian formali	sm, conservation lav	ws, limits of classica	l physics.
		ning outcomes				
The stu methoo		have knowledge of the	e principles of classical	theoretical mechanic	cs and the required o	calculation
Course	S (type, 1	number of weekly contact hou	urs, language — if other than Ge	rman)		
V + Ü (r	no info	rmation on SWS (weel	kly contact hours) and co	ourse language avail	able)	
		S essment (type, scope, lar ole for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
otherw Assess and wil	ise spe ment o Il be an	cified) ffered: When and how	inutes, for modules with v often assessment will under observance of Se	be offered depends	on the method of as	sessment
Allocat	ion of	places				
Additio	onal inf	ormation				
	-					
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regula	tions for teaching-degree progra	ammes)		
Module						
	-	ree (1 major) Mathema				
	-	ree (1 major) Mathema ree (1 major) Nanostri	atics (2013) Icture Technology (2012)		
	-	•	ational Mathematics (20			
		jor Mathematics (2012)	JMU Würzburg	• generated 26-Aug-2024 • achelor (180 ECTS) Mathema	-	page 194 / 237



Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 195 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title			Abbreviation		
Quanta	, Atom	s, Molecules			11-QAM-092-m01	
Module	e coord	inator		Module offered by		
Managi	ing Dire	ector of the Institute of	Applied Physics	plied Physics Faculty of Physics and Astronomy		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
8	nume	rical grade				
Duration Module level Other prereq			Other prerequisites			
1 semester undergraduate		sessment. The lecture at the beginning of sidered a declaration dents have obtained the course of the set sessment into effect ted to assessment i sessment at a later	Certain prerequisites must be met to qualify for admission to as- sessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be con- sidered a declaration of will to seek admission to assessment. If stu- dents have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for as- sessment into effect. Students who meet all prerequisites will be admit- ted to assessment in the current or in the subsequent semester. For as- sessment at a later date, students will have to obtain the qualification fo admission to assessment anew.			
Conten	ts					
Physica	al laws	of Atomic, Quantum ar	nd Molecular Physics.			
Intende	ed lear	ning outcomes				
Quantu	ım mec	hanical atom model, o	basic contexts and prin ne/multi-electron atom and elementary excitation	ns, electronic dipole	transitions, atoms ir	n B field, as
Course	S (type, r	umber of weekly contact hour	s, language — if other than Ge	rman)		
Ü + Ü (r	no info	rmation on SWS (week	ly contact hours) and c	ourse language avail	able)	
		essment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
otherwi Assess and wil	ise spe ment o Il be an	cified) ffered: When and how	nutes, for modules with often assessment will nder observance of Se	be offered depends o	on the method of ass	sessment
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
Module						
Bachel Bachel	or' deg or' deg	ree (1 major) Mathema ree (1 major) Mathema ree (1 major) Mathema ree (1 major) Mathema	tics (2013) tical Physics (2009)			
Bachelor's	with 1 maj	or Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathema	-	page 196 / 237



Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 197 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

	m Mec					
Module	Quantum Mechanics				11-QM-092-m01	
	e coord	inator		Module offered by	l	
			of Theoretical Physics			
and As						
ECTS		od of grading	Only after succ. con	Only after succ. compl. of module(s)		
8		rical grade				
Duratio		Module level	Other prerequisites			
1 seme	Ster	undergraduate	sessment. The lectur at the beginning of sidered a declaration dents have obtained the course of the se sessment into effect ted to assessment i	s must be met to qu arer will inform stude the course. Registrat on of will to seek adn d the qualification for mester, the lecturer t. Students who mee n the current or in th date, students will h sment anew.	nts about the respec- tion for the course we hission to assessme or admission to assess will put their registrates at all prerequisites we e subsequent seme	ctive details ill be con- nt. If stu- ssment over ation for as- ill be admit- ster. For as-
Conten	ts					
			inger equation, mathema spin, hydrogen atom, ma			s, harmonic
		ning outcomes		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
The stu	dents l	have knowledge of th	e principles of quantum	mechanics and the r	required calculation	methods.
Course	S (type, r	number of weekly contact ho	ours, language — if other than Ge	rman)		
V + Ü (r	10 infor	rmation on SWS (wee	kly contact hours) and co	ourse language avail	able)	
		sessment (type, scope, la le for bonus)	anguage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
otherwi Assess and wil	ise spe ment o Il be an	cified) ffered: When and ho	ninutes, for modules with w often assessment will l under observance of Sec	be offered depends	on the method of as	sessment
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
			· · · · · · · · · · · · · · · · · · ·			
Worklo	ad					
		2				
Teachi	ig cycl	e				
Referre	d to in	IPOI (examination result	ations for teaching-degree progra	ummes)		
				annie <i>s)</i>		
Module	apper	ars in				
Bachel Bachel	or' deg or' deg	ree (1 major) Mathem ree (1 major) Mathem	natics (2013)			
	-		ational Mathematics (20 ational Mathematics (20			
Dachel	-	jor Mathematics (2012)		• generated 26-Aug-2024 • 0	exam. reg.	page 198 / 237



Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 199 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	1

Module	e title				Abbreviation	
Statist	ical Me	chanics and Thermod	ynamics		11-ST-092-m01	
Module	e coord	inator		Module offered by	l	
	ing Dir	ector of the Institute of	Theoretical Physics	Faculty of Physics and Astronomy		
ECTS	<u>г і і</u>	od of grading	Only after succ. con	c. compl. of module(s)		
8	1	rical grade		•		
Duratio	on .	Module level	Other prerequisites	i		
1 semesterUndergraduateCertain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective of at the beginning of the course. Registration for the course will be sidered a declaration of will to seek admission to assessment. If set dents have obtained the qualification for admission to assessment the course of the semester, the lecturer will put their registration for sessment into effect. Students who meet all prerequisites will be ted to assessment in the current or in the subsequent semester. F sessment at a later date, students will have to obtain the qualification to assessment anew.			ctive details ill be con- nt. If stu- ssment over ation for as- ill be admit- ster. For as-			
Conten	its					
Princip chanics		hermodynamics, funda	amental theorems, ther	modynamic potentia	ls, principles of stat	istical me-
Intende	ed lear	ning outcomes				
		have knowledge of the ethods.	e principles of thermody	namics and statistic	al mechanics and th	e required
Course	S (type, 1	number of weekly contact hou	rs, language — if other than Ge	rman)		
ı) Ü + V	no info	rmation on SWS (week	ly contact hours) and co	ourse language avail	able)	
		sessment (type, scope, lan ble for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
otherw Assess and wil	ise spe ment o Il be an	cified) ffered: When and how	nutes, for modules with often assessment will under observance of Se	be offered depends	on the method of as	sessment
Allocat	-					
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
 D.(
	ea to in	LPUI (examination regulat	ions for teaching-degree progra	ammes)		
 Module	anner	ars in				
Bachel Bachel	or' deg or' deg	ree (1 major) Mathema ree (1 major) Mathema		12)		
		jor Mathematics (2012)		12)	ayam reg	nage 200 / 227
bachelor's	with 1 ma	joi mathematics (2012)	-	achelor (180 ECTS) Mathema	-	page 200 / 237



Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2010)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 201 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

	e title				Abbreviation	
Nuclea	r and E	lementary Particle Phy	/sics		11-KET-122-m01	
		• .				
	e coord			Module offered by		
	1	ector of the Institute of		Faculty of Physics and Astronomy		
ECTS	Meth	od of grading	Only after succ. cor	cc. compl. of module(s)		
6	nume	rical grade				
Duratio	on	Module level	Other prerequisites	5		
		sessment. The lecture at the beginning of sidered a declaration dents have obtaine the course of the se sessment into effect ted to assessment	Certain prerequisites must be met to qualify for admission to as- sessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be con- sidered a declaration of will to seek admission to assessment. If stu- dents have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for as- sessment into effect. Students who meet all prerequisites will be admit- ted to assessment in the current or in the subsequent semester. For as- sessment at a later date, students will have to obtain the qualification for			
Conten	nts					
Nuclea lerators Intende The stu They ha	ar mode is and d ed lear udents ave an	ls. Structure of nuclei. etectors. Electromagne ning outcomes understand the basic o	Radioactivity and spec etic interaction. Strong	troscopy. Nuclear en interaction. Weak int undamental Nuclear a	n. Methods of Nuclear Physics ergy. Radiation and matter. A teraction. Standard model. and Elementary Particle Physic the theoretical models which	
	es (type, r		rs, language — if other than Ge			
V + Ü (I	no info	rmation on SWS (week	ly contact hours) and c	ourse language avail	able)	
		sessment (type, scope, lan le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, information on wheth	
written	i exami	nation (approx. 120 mi	nutes)			
Allocat	tion of _l	olaces				
Additic	onal inf	ormation				
 Worklo	oad					
 Worklo	oad					
	oad ng cycl	e				
		e				
 Teachi	ng cycl		ions for teaching-degree progr	ammes)		
 Teachi	ng cycl		ions for teaching-degree progr	ammes)		
 Teachin Referre	ng cycl ed to in	LPOI (examination regulat	ions for teaching-degree progr	ammes)		
 Teachin Referre Module	ng cycl ed to in e appea	LPO I (examination regulat		ammes)		
 Teachin Referre Module Bachel	ed to in e appea	LPOI (examination regulat ars in ree (1 major) Mathema	tics (2012)	ammes)		
 Teachin Referre Module Bachel Bachel	ng cycl ed to in e appea lor' deg lor' deg	LPO I (examination regulat	tics (2012) tics (2013)	ammes)		
 Teachin Referre Module Bachel Bachel Bachel	ng cycl ed to in e appea lor' deg lor' deg lor' deg	LPO I (examination regulat ars in ree (1 major) Mathema ree (1 major) Mathema	tics (2012) tics (2013) 2012)	ammes)		
 Teachi Referre Module Bachel Bachel Bachel Bachel	ng cycl ed to in e appea lor' deg lor' deg lor' deg lor' deg	LPO I (examination regulat ars in ree (1 major) Mathema ree (1 major) Mathema ree (1 major) Physics (2 ree (1 major) Mathema	tics (2012) tics (2013) 2012)			
 Teachin Referre Module Bachel Bachel Bachel Bachel Bachel Bachel	ed to in ed to in e appea lor' deg lor' deg lor' deg lor' deg lor' deg	LPOI (examination regulat ars in ree (1 major) Mathema ree (1 major) Mathema ree (1 major) Physics (2 ree (1 major) Mathema ree (1 major) Computa	tics (2012) tics (2013) 2012) tical Physics (2012)	012)		



Application-oriented Subject Business Management and Economics

(40 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 203 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Business Management and Economics Compulsory Courses

(30 ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 204 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation
Managerial Accounting					12-IntUR-G-082-m01
Module	e coord	inator	Module offered by		
holder ting	holder of the Chair of Business Management and Accoun- ting Faculty of Business Management and Economics				
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Outline 1. Mana 2. Mana 3. Diffe 4. Cost 5. Job c 6. Cost 7. Budg 8. Cost 9. Cost Reading Coener	urse of of syll agerial agerial rent typ centre osting centre geting a -volum inform g: uberg/F	fers an introduction to ai abus: accounting and financial accounting: basic terms bes of costs accounting based on tot based on total costs accounting and job costi and cost-variance analysi e-profit analysis ation and operating deci- sischer/Günther: Kostenre an/Pedell: Kostenrechnur	accounting al costs ing based on direct/v s sions echnung und Kostena	variable costs analyse, Stuttgart.	
		editions) ning outcomes			
After cc (i) set c (ii) defi the terr (iii) app	ompleti out the ne the ns; oly the	ng the course "Managem responsibilities of the co central concepts of interr basic methods of interna	mpany's internal acc nal enterprise compu l corporate accountir	ounting and control; ting restriction and c ng and control on a fu	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)	
V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	t every semester, information on whether
written examination (approx. 60 minutes)					
Allocation of places					
wissen and Wi of othe cated in quotas among	schaft rtschaf r subje n a star : Quota applica	(Business Management a tsinformatik (Business In cts. Should the number o ndardised procedure amo 1 (50% of places): total ants with the same numb	and Economics), Wirt formation Systems). of applications excee ong all applicants irre number of ECTS cred er of ECTS credits ac	schaftsmathematik (The remaining place d the number of avai espective of their sub its already achieved hieved, places will b	lor's students of Wirtschafts- Mathematics for Economics) s will be allocated to students lable places, places will be allo- jects according to the following in the respective degree subject; e allocated by lot. Quota 2 (25% licants with the same number of

 Bachelor's with 1 major Mathematics (2012)
 JMU Würzburg • generated 26-Aug-2024 • exam. reg.
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 data record Bachelor (180 ECTS) Mathematik - 2012
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subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who already have successfully completed at least one module component of the respective module will be given preferential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become available.

Additional information	
Workload	
Teaching cycle	
Referred to in LPO I (examination regulations for teaching-degree programmes)	
Module appears in	
Bachelor' degree (1 major) Computer Science (2010)	
Bachelor' degree (1 major) Mathematics (2012)	
Bachelor' degree (1 major) Mathematics (2013)	
Bachelor' degree (1 major) Business Management and Economics (2009)	
Bachelor' degree (1 major) Business Management and Economics (2008)	
Bachelor' degree (1 major) Business Management and Economics (2010)	
Bachelor' degree (1 major) Economathematics (2009)	
Bachelor' degree (1 major) Economathematics (2012)	
Bachelor' degree (1 major) Economathematics (2008)	
Bachelor' degree (1 major) Business Information Systems (2009)	
Bachelor' degree (1 major) Business Information Systems (2008)	
Master's degree (1 major) China Business and Economics (2014)	
Master's degree (1 major) China Business and Economics (2012)	
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2010)	
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)	

Module title					Abbreviation	
Financial Accounting					12-ExtUR-G-082-m01	
Module coordinator				Module offered by		
holder of the Chair of Business Management and Business Faculty of Business Management and Economics Taxation					conomics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	numer	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Content	ts					
ble-enti	ry book	fers an introduction to t c-keeping as well as the y according to German o	fundamentals of reco			
Intende	ed learr	ning outcomes	_			
		ire a basic unterstandin pply this knowledge, i.				o arrange, re-
Courses	S (type, n	umber of weekly contact hours	, language — if other than Ger	rman)		
V + Ü (n	io infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
		essment (type, scope, langu le for bonus)	age — if other than German, o	examination offered — if no	t every semester, informati	on on whether
written	examir	nation (approx. 60 minu	ites)			
Allocati	ion of p	olaces				
Number of places: 640. No restrictions with regard to available places for Bachelor's students of Wirtschafts- wissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allo- cated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who al- ready have successfully completed at least one module component of the respective module will be given prefe- rential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become availa-						
ble. Additio	nal info	ormation				
			_			
Workloa	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in					
Bachelor' degree (1 major) Computer Science (2010)						
	-	ree (1 major) Mathemati ree (1 major) Mathemati				
	_			• converted of Armonia	Nom 102	
Dachelor's V	with 1 maj	or Mathematics (2012)		• generated 26-Aug-2024 • e achelor (180 ECTS) Mathemat		page 207 / 237

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Bachelor' degree (1 major) Business Management and Economics (2009)
Bachelor' degree (1 major) Business Management and Economics (2008)
Bachelor' degree (1 major) Business Management and Economics (2010)
Bachelor' degree (1 major) Economathematics (2009)
Bachelor' degree (1 major) Economathematics (2012)
Bachelor' degree (1 major) Economathematics (2008)
Bachelor' degree (1 major) Business Information Systems (2009)
Bachelor' degree (1 major) Business Information Systems (2008)
Master's degree (1 major) China Business and Economics (2014)
Master's degree (1 major) China Business and Economics (2012)
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2010)
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 208 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title					Abbreviation		
Introduction to Business Administration					12-EBWL-G-082-mo	1	
Module coordinator				Module offered by			
holder of the Chair for Human Resource Management and Organisation				Faculty of Business	Management and E	conomics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
5		rical grade		•			
Duratio		Module level	Other prerequisites				
1 semes	ster	undergraduate					
Conten	Contents						
overvie enterpr ve and on-mak	This course will introduce students to relevant subject areas of business administration. Students will acquire an overview of the different perspectives and main points of view from which a theoretical examination of business enterprise may take place. The course will focus on what companies or other organisations are, how they behave and in what form they are organised. For this purpose, a study will be made of the economic subject's decision-making behaviour. Reading list to be provided during lecture.						
Intende	d learr	ning outcomes					
		lectures is to familiaris ss administration.	e the students with th	e basic problem issu	es and perspectives	within the	
Course	5 (type, n	umber of weekly contact hours	, language — if other than Ge	rman)			
V + Ü (n	o infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)		
		s essment (type, scope, langu le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether	
written	examir	nation (approx. 60 minu	ites)				
Allocation of places							
Number of places: 640. No restrictions with regard to available places for Bachelor's students of Wirtschafts- wissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allo- cated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who al- ready have successfully completed at least one module component of the respective module will be given prefe- rential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become availa- ble.							
Additio	nal inf	ormation					
Workload							
Teaching cycle							
Referre	d to in	IPOI (examination regulation	ns for teaching-degree progra	ammes)			
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module	annea	in in					
Bachelor's v	with 1 maj	or Mathematics (2012)	-	• generated 26-Aug-2024 • e achelor (180 ECTS) Mathemat	-	page 209 / 237	

Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Business Management and Economics (2009)
Bachelor' degree (1 major) Business Management and Economics (2009)
Bachelor' degree (1 major) Business Management and Economics (2008)
Bachelor' degree (1 major) Business Management and Economics (2010)
Bachelor' degree (1 major) Economathematics (2009)
Bachelor' degree (1 major) Economathematics (2012)
Bachelor' degree (1 major) Economathematics (2008)
Bachelor' degree (1 major) Business Information Systems (2009)
Bachelor' degree (1 major) Business Information Systems (2008)
Bachelor' degree (1 major) Political and Social Studies (2008)
Master's degree (1 major) China Business and Economics (2014)
Master's degree (1 major) China Business and Economics (2012)
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2010)
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)

Module	title				Abbreviation	
Introduction to Economics					12-EVWL-G-082-m0)1
Module coordinator				Module offered by		
holder Econom		Chair of Monetary Policy	and International	Faculty of Business	Management and E	conomics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
1. Econ 2. The c 3. The r 4. Mono 5. The l 6. The g 7. Gove 8. Envir 9. Objec 10How 11.The r 12How Intende By com grasp m Course V + Ü (r Methoo	omics : livisior narket opolies abour r covernr rnmen onmen ctives a do agg ole of f does a ed learn pleting nicroec s (type, n to infor	als with the following top shows how markets func- in action and cartels endanger m market and the role of ur nent's role in a social ma- tal redistribution guaran tal policy and the govern and agents in the macro regate supply and dema- iscal policy central bank stabilise agents this course, students re- onomic as well as macro umber of weekly contact hours, mation on SWS (weekly sessment (type, scope, langua le for bonus)	tion four wealth arket economies nions arket economy tees the social balanc ment's allocation fur economy nd come into equilibr ggregate demand by s ceive a fundamental beconomic subjects at language — if other than Ger contact hours) and co	nction ium? setting interest rates understanding of eco nd to analyze them i man) ourse language avail	? onomics. Students a n theoretical models able)	5.
written	examiı	nation (approx. 60 minut	tes)			
Allocat	ion of p	olaces				
Number of places: 640. No restrictions with regard to available places for Bachelor's students of Wirtschafts- wissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allo- cated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who al- ready have successfully completed at least one module component of the respective module will be given prefe- rential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become availa- ble.						
 Worklo	ad					
	uu					
Bachelor's	with 1 maj	or Mathematics (2012)	-	• generated 26-Aug-2024 • e	-	page 211 / 237

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Business Management and Economics (2009) Bachelor' degree (1 major) Business Management and Economics (2008) Bachelor' degree (1 major) Business Management and Economics (2010) Bachelor' degree (1 major) Economathematics (2009) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Economathematics (2008) Bachelor' degree (1 major) Business Information Systems (2009) Bachelor' degree (1 major) Business Information Systems (2008) Bachelor' degree (1 major) Political and Social Studies (2008) Master's degree (1 major) China Business and Economics (2014) Master's degree (1 major) China Business and Economics (2012)

Module title					Abbreviation
Macroe	econon	nics 1			12-Mak1-G-082-m01
Module	e coord	inator		Module offered by	
holder of the Chair of International Eco			nomics	Faculty of Business Management and Economics	
ECTS	TS Method of grading Only		Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 semester undergraduate					
Conten	Contents				

Description:

This module covers basic macroeconomic relationships, the declaration of employment, production, interest, current and capital account, nominal and real exchange rate, prices and inflation - in the long run (with flexible wages and prices) and in the short term (with fixed wages and prices). The course will familiarise students with concepts which are of central importance in a globalised environment (e. g. interest rate arbitrage, foreign exchange risk, purchasing power parity). The explanations will be applied to current issues (e. g. current account balances in the global economy; questions related to the European monetary union and the global financial crisis).

Outline of syllabus:

- 1. Macroeconomic issues and characteristics
- Issues of macroeconomics
- The measurement of economic activity
- 2. Long-term relationships
- The classic long-term model of the closed economy
- Money and Inflation
- The classic long-term model of a small open economy
- Unemployment
- 3. Short and medium-term relationships
- Fluctuations of economic activity: an introduction
- The IS-LM model of a closed economy
- The IS-LM model of an open economy
- Aggregate supply and Phillips curve
- Conclusion and outlook

Reading:

The latest editions of the following textbooks:

N. Gregory Mankiw: Macroeconomics [students are recommended to read the original English edition; they may also read the German translation]

Olivier Blanchard and David H. Johnson, Macroeconomics Prentice Hall; [a German-language edition of the book by Oliver Blanchard and Gerhard Illing is available from Pearson Studium].

Michael Burda and Charles Wyplosz: Macroeconomics. A European text.

To illustrate the lecture, case studies in particular will be developed in which more current sources are used.

Intended learning outcomes

This expertise enables the students to penetrate economically-intuitively and analytically macroeconomic interactions and problems in the course of advancing globalization and to deal with these arguments. Students learn to interpret on a scientific basis the impact of macroeconomic developments in individual economic actors (businesses, households, the state).

Courses (type, number of weekly contact hours, language - if other than German)

 $V + \ddot{U}$ (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes)

Allocation of places

Number of places: 640. No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allocated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who already have successfully completed at least one module component of the respective module will be given preferential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

--

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Business Management and Economics (2009) Bachelor' degree (1 major) Business Management and Economics (2008) Bachelor' degree (1 major) Business Management and Economics (2010) Bachelor' degree (1 major) Economathematics (2009) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Economathematics (2008) Bachelor' degree (1 major) Business Information Systems (2009) Bachelor' degree (1 major) Business Information Systems (2009) Master's degree (1 major) China Business and Economics (2014) Master's degree (1 major) China Business and Economics (2012) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 214 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Module title					Abbreviation			
Microeconomics 1					12-Mik1-G-082-m01			
Module	e coord	inator		Module offered by				
holder of the Chair for Economics, Contract Theory formation Economics			tract Theory and In-	Faculty of Business	Management and Economics			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)				
5	nume	rical grade						
Duratio	n	Module level	Other prerequisites					
1 seme	ster	undergraduate						
Conten	ts							
Theory 1. Utility 2. Com 3. Incor 4. Labo 5. Interf Theory 6. Prod 7. Profit 8. Long 9. Supp	The lecture covers the following topics Theory of the household: 1. Utility maximisation under constraints 2. Comparative statics 3. Income and substitution effects 4. Labour supply 5. Intertemporal consumption / savings decisions Theory of the firm: 6. Production functions (technology) 7. Profit maximisation 8. Long run versus short run cost minimisation 9. Supply of goods							
Intende	ed leari	ning outcomes						
					ehold and firm theory. Accordin- e scientific methods will serve as			

gly, they will know how to solve optimization problems under constraints. These scientific methods will serve as useful in many fields of specialization in economics and business administration. In particular, studends know analytically how to analyze the impact of changes in the economic environment, e.g., wages, interest rates, income on individual decision making.

Courses (type, number of weekly contact hours, language - if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes)

Allocation of places

Number of places: 640. No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allocated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who already have successfully completed at least one module component of the respective module will be given prefe-

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 215 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

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rential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become available.

Additional information

Workload

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Business Management and Economics (2009) Bachelor' degree (1 major) Business Management and Economics (2008) Bachelor' degree (1 major) Business Management and Economics (2010) Bachelor' degree (1 major) Economathematics (2009) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Economathematics (2008) Bachelor' degree (1 major) Business Information Systems (2009) Bachelor' degree (1 major) Business Information Systems (2008) Master's degree (1 major) China Business and Economics (2014) Master's degree (1 major) China Business and Economics (2012)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 216 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	



Application-oriented Subject Business Management and Economics Compulsory Electives

(ECTS credits)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 217 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Introdu	e title				Abbreviation	
Introduction to Market-Oriented Management				12-Mark-G-082-mo	1	
Module coordinator				Module offered by		
holder ting	lder of the Chair of Business Administration and Mark g		nistration and Marke-	Faculty of Business	Management and E	conomics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	5		
1 seme	ster	undergraduate				
Conten	Its					
Conten With th plainec ling. Th al purc sed on Outline 1. Mark	module nt: ne stake d and ex ne cours hasing a conjo e of syll ceting, e	e, students will acquire cholder approach as a s xemplified in the 5 clas se will focus not only or behaviour. A case stud oint analysis will provid abus: entrepreneurship and b s of consumer behavio	tarting point, the basic sical steps: situation a the behavioural appro y introducing students e students with deepe usiness management	c design of market-or analysis, objectives, s oaches of consumer s to the fundamental	riented managemen strategies, tools and behaviour but also principles of market	l control- on industri-
5. Corp Readin Foscht, Wiesba Hombu	g: , T. / Sw aden 2c urg, Ch.:	Grundlagen des Marke	us creating shared va Ilten: Grundlagen Pe tingmanagements: Eii	rspektiven Anwend nführung in Strategie		
	urg, Ch.: ehmen:	sführung, 4th revised a Grundlagen des Marke sführung, 3rd ed., Wies	etingmanagements: Ei			
Unterne Kroebe Meffert zepte Meffert 4th ed. Meyer,	t, H. / B - Instru t, H. / B ., Stuttg M.: Ök	N. /Weinberg, P.: Konsu urman, Ch / Kirchgeorg mente Praxisbeispiele urman, Ch / Becker, Ch gart 2010. onomische Organisatio	mentenverhalten, 9th , M.: Marketing Grun e, 11th revised and exp .: Internationales Marl	n ed., Munich 2009. Indlagen marktorientie D. ed., Wiesbaden 20 keting-Management	erter Unternehmens 12. Ein markenorientio	führung: Ko erter Ansatz
Unterne Kroebe Meffert zepte Meffert 4th ed. Meyer, Wiesba Porter, New Yo Simon, baden	t, H. / B - Instru t, H. / B ., Stuttg M.: Ök aden 19 M. E.: V ork 2012 , H. / Fa 2009.	urman, Ch / Kirchgeorg mente Praxisbeispiele urman, Ch / Becker, Ch art 2010. onomische Organisatio 95. Vettbewerbsvorteile S 4. (Original: Porter, M.: 9 ssnacht, M.: Preismana	Imentenverhalten, 9th , M.: Marketing Grun e, 11th revised and exp .: Internationales Marl n der Industrie: Netzw Spitzenleistungen erre Competitive Advantage	n ed., Munich 2009. ndlagen marktorientie o. ed., Wiesbaden 20 keting-Management erkarrangements zwi ichen und behaupter e, New York 1985.)	erter Unternehmens 12. Ein markenorientio ischen Markt und Ur n, 8th ed., Campus F	führung: Kon erter Ansatz, nternehmun Frankfurt /
Unterne Kroebe Meffert zepte Meffert 4th ed. Meyer, Wiesba Porter, New Yo Simon, baden Intende	t, H. / B - Instru t, H. / B ., Stuttg M.: Ök aden 19 M. E.: V ork 2012 , H. / Fa 2009. ed learn	urman, Ch / Kirchgeorg mente Praxisbeispiele urman, Ch / Becker, Ch art 2010. onomische Organisatio 95. Vettbewerbsvorteile S 4. (Original: Porter, M.: 9 ssnacht, M.: Preismana	Imentenverhalten, 9th , M.: Marketing Grun e, 11th revised and exp .: Internationales Mark n der Industrie: Netzw Spitzenleistungen erre Competitive Advantage Igement, Strategie A	n ed., Munich 2009. ndlagen marktorientie o. ed., Wiesbaden 20 keting-Management rerkarrangements zwi ichen und behaupter e, New York 1985.) nalyse Entscheidur	erter Unternehmens 12. Ein markenorientio ischen Markt und Ur n, 8th ed., Campus F ng Umsetzung, 3ro	führung: Ko erter Ansatz hternehmun Frankfurt / d ed., Wies-
Unterne Kroebe Meffert zepte Meffert 4th ed. Meyer, Wiesba Porter, New Yo Simon, baden Intende The stu matica	t, H. / B - Instru t, H. / B ., Stuttg M.: Ök aden 19 M. E.: V ork 2012 , H. / Fa 2009. ed learn udents I Ily. In a	urman, Ch / Kirchgeorg mente Praxisbeispiele urman, Ch / Becker, Ch art 2010. onomische Organisatio 95. Vettbewerbsvorteile S 4. (Original: Porter, M.: 9 ssnacht, M.: Preismana	imentenverhalten, 9th , M.: Marketing Grun e, 11th revised and exp .: Internationales Mark n der Industrie: Netzw Spitzenleistungen erre Competitive Advantage agement, Strategie A	n ed., Munich 2009. ndlagen marktorientie o. ed., Wiesbaden 20 keting-Management - erkarrangements zwi ichen und behaupter e, New York 1985.) nalyse Entscheidur	erter Unternehmens 12. Ein markenorientio ischen Markt und Ur n, 8th ed., Campus F ng Umsetzung, 3ro	führung: Ko erter Ansatz hternehmun Frankfurt / d ed., Wies- wledge syste
Unterne Kroebe Meffert zepte Meffert 4th ed. Meyer, Wiesba Porter, New Yo Simon, baden Intende The stu matical	t, H. / B - Instru t, H. / B ., Stuttg M.: Ök aden 19 M. E.: V ork 2012 , H. / Fa 2009. ed learn idents I Ily. In a ss man	urman, Ch / Kirchgeorg mente Praxisbeispiele urman, Ch / Becker, Ch art 2010. onomische Organisatio 95. Vettbewerbsvorteile S 4. (Original: Porter, M.: C ssnacht, M.: Preismana hing outcomes nave a basic understand ddition, they can use th	imentenverhalten, 9th , M.: Marketing Grun e, 11th revised and exp .: Internationales Mark n der Industrie: Netzw Spitzenleistungen erre Competitive Advantage gement, Strategie A ding of business mana te acquired knowledge	e ed., Munich 2009. Indlagen marktorientie D. ed., Wiesbaden 20 keting-Management Perkarrangements zwi ichen und behaupter e, New York 1985.) Inalyse Entscheidur agement and are able e solve and identify th	erter Unternehmens 12. Ein markenorientio ischen Markt und Ur n, 8th ed., Campus F ng Umsetzung, 3ro	führung: Ko erter Ansatz hternehmun Frankfurt / d ed., Wies- wledge syste
Unterne Kroebe Meffert zepte Meffert 4th ed. Meyer, Wiesba Porter, New Yo Simon, baden Intende The stu matical busine Course	t, H. / B - Instru t, H. / B ., Stuttg M.: Ök aden 19 M. E.: V ork 2012 , H. / Fa 2009. ed learn idents I Ily. In a ss man	urman, Ch / Kirchgeorg mente Praxisbeispiele urman, Ch / Becker, Ch art 2010. onomische Organisatio 95. Vettbewerbsvorteile S 4. (Original: Porter, M.: ssnacht, M.: Preismana hing outcomes have a basic understand ddition, they can use th agement.	imentenverhalten, 9th , M.: Marketing Grun e, 11th revised and exp .: Internationales Mark n der Industrie: Netzw Spitzenleistungen erre Competitive Advantage igement, Strategie A ding of business mana e acquired knowledge , language – if other than Ger	ed., Munich 2009. Indlagen marktorientie D. ed., Wiesbaden 20 keting-Management - rerkarrangements zwi ichen und behaupter e, New York 1985.) analyse Entscheidur agement and are able e solve and identify the rman)	erter Unternehmens 12. Ein markenorientio ischen Markt und Ur n, 8th ed., Campus F ng Umsetzung, 3rd e to classify the know he conventional pro	führung: Ko erter Ansatz hternehmun Frankfurt / d ed., Wies- wledge syste

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes)

Allocation of places

Number of places: 405. No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allocated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who already have successfully completed at least one module component of the respective module will be given preferential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

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Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Business Management and Economics (2009) Bachelor' degree (1 major) Business Management and Economics (2008) Bachelor' degree (1 major) Business Management and Economics (2010) Bachelor' degree (1 major) Economathematics (2009) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Economathematics (2008) Bachelor' degree (1 major) Business Information Systems (2009) Bachelor' degree (1 major) Business Information Systems (2009) Bachelor' degree (1 major) Business Information Systems (2008) Master's degree (1 major) China Business and Economics (2014) Master's degree (1 major, 1 minor) Business Management and Economics (Minor, 2010) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)

Bachelor's with 1 major Mathematics (2012)	JMU Würzburg • generated 26-Aug-2024 • exam. reg.	page 219 / 237
	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation	
Supply, Production and Operations Management. An Intro			Management. An Introc	luction	12-BPL-G-082-m01	
Module coordinator			Module offered by	Module offered by		
holder of the Chair of Business Management and Industria Management			agement and Industrial	Faculty of Business	Management and E	conomics
ECTS Method of grading Only after succ. compl. of module(s)						
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conten	nts					
			h an overview of funda ctions as well as a mod			
Intend	ed lear	ning outcomes				
rate pro	ocurem	ent, production and lo	e and discuss the objec gistics as well as their i ning models in these fie	nterdependencies.		
Course	S (type, r	number of weekly contact hour	rs, language — if other than Ger	rman)		
1) Ü + V	no infoi	rmation on SWS (week	ly contact hours) and co	ourse language avail	able)	
		sessment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
		nation (approx. 60 min	utes)			
Allocat	tion of p	olaces				
sensch Wirtsch other s cated i quotas among of place subject ready h rential allocat ble.	haft (Bu haftsinf subjects n a star capplica applica es): nu t semes nave su consid ed in th	siness Management an ormatik (Business Info s. Should the number of ndardised procedure a a 1 (50% of places): tot ants with the same num mber of subject semes sters, places will be all ccessfully completed a eration. Places on all c he same procedure. A v	ns with regard to availa nd Economics), Wirtsch ormation Systems). The of applications exceed t mong all applicants irre al number of ECTS cred mber of ECTS credits ac ters of the respective a ocated by lot. Quota 3 (at least one module con ourses of the module con vaiting list will be maint	aftsmathematik (Ma remaining places wi he number of availa espective of their sul its already achieved hieved, places will b pplicant; among app (25% of places): allo nponent of the respe omponent with a res	thematics for Econo Il be allocated to stu ble places, places w ojects according to t in the respective de be allocated by lot. Q blicants with the sam cation by lot. Applic ective module will be stricted number of pl	mics) and idents of ill be allo- he following gree subject; uota 2 (25% ne number of ants who al- e given prefe- aces will be
Additio	onal inf	ormation				
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Worklo	Dad					
 Tooch!		2				
reactill	ng cycl	C				
 Referre	ed to in	LPO I (examination regulat	ions for teaching-degree progra	immes)		
	e appea					
	-	ree (1 major) Computer ree (1 major) Mathema				
Bachelor's	with 1 ma	jor Mathematics (2012)		• generated 26-Aug-2024 • achelor (180 ECTS) Mathema		page 220 / 237

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Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Business Management and Economics (2009) Bachelor' degree (1 major) Business Management and Economics (2008) Bachelor' degree (1 major) Business Management and Economics (2010) Bachelor' degree (1 major) Economathematics (2009) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Economathematics (2008) Bachelor' degree (1 major) Business Information Systems (2009) Bachelor' degree (1 major) Business Information Systems (2009) Master's degree (1 major) China Business and Economics (2014) Master's degree (1 major) China Business and Economics (2012) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2010) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)

Module title Abbreviation				Abbreviation	
Investn	nent an	d Finance. An Introductio	on		12-1&F-G-082-m01
Module	Module coordinator			Module offered by	<u> </u>
holder of the Chair of Business Management, Banking and Faculty of Business Management and Ecor Finance					Management and Economics
ECTS Method of grading Only after succ. compl. of module(s)					
5 numerical grade					
Duratio	Duration Module level Other prerequisites				
1 seme	ster	undergraduate			
Conten	ts				
and pri Outline	urse of nciples e of sylla	of financial economics. abus:	inciples of financial r	nathematics, severa	l methods of capital budgeting
 Principles of financial mathematics Fundamental concepts Problems of investment and finance in one commodity world under certainty Problems of investment and finance in one commodity world under uncertainty Problems of investment and finance in many commodities world under uncertainty Capital market and corporate financing in Germany 					
Intende	ed learr	ning outcomes			
After completing the course "Principles of Investments and Finance", the students will be able (i) to understand the fundamentals in financial mathematics and solve several problems, e.g. via the PV ap- proach; (ii) to address the central problems in intertemporal allocation given different capital market scenarios; (iii) to budget and calculate the optimal useful life given static and dynamic investment approaches under the consideration of several other investment opportunities and the capital market scenario, especially the influence of taxes.					
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written	examir	nation (approx. 60 minut	es)		
Allocat	ion of p	olaces			
Number of places: 405. No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allocated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters. Places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who already have successfully completed at least one module component of the respective module will be given preferential consideration. Places on all courses of the module component with a restricted number of places will be allocated by lot.					
Additional information					

Bachelor's with 1 major Mathematics (2012)	

Workload
Teaching cycle
Referred to in LPO I (examination regulations for teaching-degree programmes)
Module appears in
Bachelor' degree (1 major) Computer Science (2010)
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Business Management and Economics (2009)
Bachelor' degree (1 major) Business Management and Economics (2008)
Bachelor' degree (1 major) Business Management and Economics (2010)
Bachelor' degree (1 major) Economathematics (2009)
Bachelor' degree (1 major) Economathematics (2012)
Bachelor' degree (1 major) Economathematics (2008)
Bachelor' degree (1 major) Business Information Systems (2009)
Bachelor' degree (1 major) Business Information Systems (2008)
Master's degree (1 major) China Business and Economics (2014)
Master's degree (1 major) China Business and Economics (2012)
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2010)

Module title Abbr			Abbreviation		
Macroeconomics 2		12-Mak2-G-082-m01			
Module coordinator			Module offered by		
holder of the Chair of Public Finance			Faculty of Business Management and Economics		
ECTS Method of grading		Only after succ. com	pl. of module(s)		
5 numerical grade					
Duration Module level Other prerequisites					
1 semester undergraduate					
Contents					
Description: The lecture provides an introduction to long run or dynamic issues of macroeconomic theory and policy. Contents: 1. Phillips curve and dynamic model 2. Growth theory and policy 3. Microeconomic foundations of macroeconomics 4. Macroeconomic policy Lecture notes to be provided by Chair. Intended learning outcomes After completing the course "Makroökonomie 2" students are familiar with the most important concepts of grow- th theory, they know the microeconomic foundations of modern macroeconomic theory and understand the in- tertemporal budget constraint of the government. Therefore they are able to discuss the growth and distributio- nal consequences of policy reforms by applying simple economic models.					
Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available)					
	sessment (type, scope, langua			t every semester, information on whether	
written exami	nation (approx. 60 minut	es)			
Allocation of places					
Number of places: 640. No restrictions with regard to available places for Bachelor's students of Wirtschafts- wissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allo- cated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who al- ready have successfully completed at least one module component of the respective module will be given prefe- rential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become availa- ble.					
Additional inf	ormation				
Workload					

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013)

Bachelor' degree (1 major) Business Management and Economics (2009)

Bachelor' degree (1 major) Business Management and Economics (2008)

Bachelor' degree (1 major) Business Management and Economics (2010)

Bachelor' degree (1 major) Economathematics (2009)

Bachelor' degree (1 major) Economathematics (2012)

Bachelor' degree (1 major) Economathematics (2008)

Bachelor' degree (1 major) Business Information Systems (2009)

Bachelor' degree (1 major) Business Information Systems (2008)

Master's degree (1 major) China Business and Economics (2014)

Master's degree (1 major) China Business and Economics (2012)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)

Module title					Abbreviation
Microeconomics 2					12-Mik2-G-082-m01
Module	e coord	inator		Module offered by	
holder of the Chair of Industrial Economics		nics	Faculty of Business Management and Economics		
ECTS	ECTS Method of grading		Only after succ. compl. of module(s)		
5	numerical grade				
Duration Module level		Other prerequisites	i		
1 semester undergraduate					
Contents					

Outline of syllabus:

- 1. Cost minimisation
- 2. Profit maximisation and the supply function
- 3. Short-run market equilibrium
- 4. Long-run market equilibrium
- 5. Government interventions
- 6. Monopoly
- 7. Pricing strategies with market power
- 8. Introduction to game theory
- 9. Strategic interaction and oligopoly

Intended learning outcomes

The aim of the course is to understand how markets work. We will investigate the behavior of a company in different market structures; namely perfectly competitive markets, monopoly markets and all forms in between, the so-called oligopoly markets. Ultimately, we are interested in whether the market results from a social point of view is desirable. Using our models, we will also try to analyze the consequences of different government interventions. The knowledge that students gain in this course will be in their future course of studies of benefits to them. In almost all business and economics lectures markets play a role. It also discussed in detail how economic actors make their decisions. Students will thus learn the important building blocks of economic thought. This knowledge will also be useful in the workplace and even in their private lives.

Courses (type, number of weekly contact hours, language – if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes)

Allocation of places

Number of places: 405. No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allocated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who already have successfully completed at least one module component of the respective module will be given preferential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become available.

Additional information

Bachelor's with 1 major Mathematics (2012)

Workload	

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Business Management and Economics (2009) Bachelor' degree (1 major) Business Management and Economics (2008) Bachelor' degree (1 major) Business Management and Economics (2010) Bachelor' degree (1 major) Economathematics (2009) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Economathematics (2008) Bachelor' degree (1 major) Business Information Systems (2009) Bachelor' degree (1 major) Business Information Systems (2009) Master's degree (1 major) China Business and Economics (2014) Master's degree (1 major) China Business and Economics (2012)

Module	odule title			Abbreviation	
Introduction to Economic Policy 12-WiPo-G-082-mo1					
Module coordinator			Module offered by	odule offered by	
holder	nolder of the Chair of Economic Order and		and Social Policy	Faculty of Business	Management and Economics
ECTS					
5					
Duratio					
	emester undergraduate				
	Contents				
Descrip					
to the t with th Wirtsch croecoi possib Outline 1. Intro -What i - Objec - Instru - Reasc - Cure f 3. Price - Empir - Reasc - Cure f 3. Price - Empir - Reasc - Cure f 5. Bala - Empir - Reasc - Cure f 5. Bala - Empir - Reasc - Cure f 5. Bala - Empir - Reasc - Cure f 5. Bala	erm "e e object haft" ("I nomic of le prob e of syll duction s "Ecor tives of ments utions of e level s ics: The ons for for labo e level s ics: infor for price ontradi ness cy ics: cul- ons for for mac nce in f ics: ba ons for ics: ba ons for ics: ba ons for ics: ba ons for ics: ba ons for ics: ba ons for insta me dist	conomic policy" and disc tives that are set out in t Law for Promoting Stabili data to evaluate the degr lems and demonstrates a abus: nomic Policy"? f economic policy of economic policy of economic policy	usses its objectives, he German "Gesetz z ty and Growth of the ee to which the parti actions the governme r market stability? en full employment a th d economy and long determinants of ecor and means to facilita ermany, Europe and t ces	means and institution cur Förderung der Sta Economy") of 1967. I cular objective is ach ent may take to cure to and stable prices c-term ecnomoic growth ate economic growth ate economic growth the World	
		an increase in income ine uality and redistribution	-quanty		
Intend	ed lear	ning outcomes			
on a nu veridge learn to vernme	umber o e curve, o asses ental in	of macroeconomic model etc.), students study the s in which situations suc terventions may be harm	s (AS/AD, IS/LM, phi e abilitiy of the state h influence can be w ful. After successful	illips curve, labor ma to influence national velfare-enhancing and completion of the co	international economies. Based rket equilibria, Solow model, Be- and global economies. Students d under which circumstances go- urse, students are able to analy- ddition, students have learned to

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assess the situation of a country on the basis of empirical macroeconomic data and to explain the particular problems based on different models.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes)

Allocation of places

Number of places: 405. No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics), Wirtschaftsmathematik (Mathematics for Economics) and Wirtschaftsinformatik (Business Information Systems). The remaining places will be allocated to students of other subjects. Should the number of applications exceed the number of available places, places will be allocated in a standardised procedure among all applicants irrespective of their subjects according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Applicants who already have successfully completed at least one module component of the respective module will be given preferential consideration. Places on all courses of the module component with a restricted number of places will be allocated in the same procedure. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

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Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Business Management and Economics (2009)
Bachelor' degree (1 major) Business Management and Economics (2008)
Bachelor' degree (1 major) Business Management and Economics (2010)
Bachelor' degree (1 major) Economathematics (2009)
Bachelor' degree (1 major) Economathematics (2012)
Bachelor' degree (1 major) Economathematics (2008)
Bachelor' degree (1 major) Business Information Systems (2009)
Bachelor' degree (1 major) Business Information Systems (2008)
Bachelor' degree (1 major) Political and Social Studies (2008)
Bachelor' degree (1 major) Political and Social Studies (2011)
Master's degree (1 major) China Business and Economics (2014)
Master's degree (1 major) China Business and Economics (2012)
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2010)
Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2008)



Thesis

(11 ECTS credits)

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Module	e title				Abbreviation
Thesis	Thesis Mathematics (Bachelor Thesis) 10-M-BAM-122-m01				
Module coordinator Module of				Module offered by	I
Dean o	of Studi	es Mathematik (Math	ematics)	Institute of Mathen	natics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
11	numerical grade Where applicable, specific modules/module components as specific supervisor.			dule components as specified by	
Duratio	on	Module level	Other prerequisites	i	
1 seme	ster	undergraduate			
Conten	Its				
Indepe	ndentl	y researching and writ	ting on a topic in mather	natics selected in co	nsultation with the supervisor.
Intend	ed lear	ning outcomes			
	during	his/her studies in the			pply the skills and methods ob- vn the result of his/her work in a
Course	S (type, 1	number of weekly contact ho	urs, language — if other than Ge	rman)	
no cou	rses as	signed			
		sessment (type, scope, la ble for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether
written Langua			English if agreed upon w	vith the examiner	
Allocat	ion of	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regula	ations for teaching-degree progra	ammes)	
Module appears in					
Bachel Bachel	or' deg or' deg	rree (1 major) Mathem rree (1 major) Mathem rree (1 major) Mathem	atics (2012)		



Subject-specific Key Skills

(16 ECTS credits)

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	data record Bachelor (180 ECTS) Mathematik - 2012	

Module title Abbreviation					Abbreviation
Mathematics and Computer					10-M-MCO-122-m01
Module	e coord	inator		Module offered by	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
7	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
2 seme	ester	undergraduate	By way of exception assessments.	, additional prerequ	isites are listed in the section on
Conten	ts		·		
analysi Intende The stu	ed lear Ident is n mathe	articular differential and i ning outcomes able to work on small pr	ntegral calculus; visu ogramming exercises	alisation of function	s in linear algebra, geometry, ns. e/She learns the use of advanced pplication to solve mathematical
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)	
 This module comprises 2 module components. Information on courses will be listed separately for each module component. 10-M-COM-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) 10-M-PRG-1-122: P (no information on SWS (weekly contact hours) and course language available) 					
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)					
Assessment in this module comprises the assessments in the individual module components as specified be- low. Unless stated otherwise, successful completion of the module will require successful completion of all indi- vidual assessments.					

Assessment in module component 10-M-COM-1-122: Computational Mathematics Computational Mathematics

- 4 ECTS, Method of grading: (not) successfully completed
- 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: 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 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 anew.

Assessment in module component 10-M-PRG-1-122: Programming course for students of Mathematics and other subjects

- 3 ECTS, Method of grading: (not) successfully completed
- 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: 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 over the course of the semester, the lecturer will

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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 anew.

Allocation of places

Additional information

Workload

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013)

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	data record Bachelor (180 ECTS) Mathematik - 2012	1

Module	Module title Abbreviation				Abbreviation	
Introdu	Introduction into mathematical thinking and working 10-M-MDA-122-mo1					
Module coordinator				Module offered by	odule offered by	
Dean of Studies Mathematik (Mathema		atics)	Institute of Mathem	atics		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
4	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate	By way of exception assessments.	, additional prerequi	sites are listed in the section on	
Conten	ts					
		ations of mathematical p and functions; basic tecl			on; basic concepts in mathema- natical writing.	
Intend	ed lear	ning outcomes				
	asy mat				ematics. He/She is able to per- y and reasonably in written and	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
compo • 1 • 1	nent. o-M-M o-M-M	DA-1-122: V + Ü (no inforn DA-2-122: V + Ü (no inforr	nation on SWS (week nation on SWS (week	ly contact hours) and ly contact hours) an	sted separately for each module d course language available) d course language available) t every semester, information on whether	
		le for bonus)	ge – Il other than German, o	examination onered — ii no	t every semester, mornation on whether	
	iless st	ated otherwise, successf			e components as specified be- successful completion of all indi-	
sic Not 2 p c L 0 C t t c 0 c c c c c c c c c c c c c	 Assessment in module component 10-M-MDA-1-122: Basic Notions and Methods of Mathematical Reasoning Basic Notions and Methods of Mathematical Reasoning 2 ECTS, Method of grading: (not) successfully completed 					
• 2 • p c • L • C t t	 Assessment in module component 10-M-MDA-2-122: Reasoning and Writing in Mathematics Reasoning and Writing in Mathematics 2 ECTS, Method of grading: (not) successfully completed project assignments (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: 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 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 					

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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.

Allocation of places Additional information --Workload --**Teaching cycle** Referred to in LPO I (examination regulations for teaching-degree programmes) § 73 (1) 5. Mathematik Angewandte Mathematik Module appears in Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Mathematical Physics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) First state examination for the teaching degree Gymnasium Mathematics (2012)

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	data record Bachelor (180 ECTS) Mathematik - 2012	

Module	e title				Abbreviation	
Seminar Mathematics				10-M-SEM-122-mo:	1	
Module coordinator			Module offered by			
Dean of Studies Mathematik (Mathematics)			atics)	Institute of Mathematics		
ECTS Method of grading			F	lcc. compl. of module(s)		
5	· · · · · ·	successfully completed				
Duratio	· · · · · · · · · · · · · · · · · · ·	Module level	Other prerequisites			
1 semester undergraduate			Certain prerequisites must be met to qualify for admission to as- sessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be con- sidered a declaration of will to seek admission to assessment. If stu- dents have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for as- sessment into effect. Students who meet all prerequisites will be admit- ted to assessment in the current or in the subsequent semester. For as- sessment at a later date, students will have to obtain the qualification for admission to assessment anew.			
Conten	ts					
		ic in mathematics.				
		ning outcomes				
ly in a s Course S (no ir Method	scientif s (type, n format d of ass	c using selected literatur ic discussion. umber of weekly contact hours, ion on SWS (weekly cont essment (type, scope, langua le for bonus)	language — if other than Ger tact hours) and cours	^{man)} e language available	2)	·
Langua	ge of a	o to 180 minutes) ssessment: German, Eng	glish if agreed upon w	ith the examiner		
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
			-			
Teachi	ng cycl	9				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module	e appea	rs in				
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematical Physics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) First state examination for the teaching degree Gymnasium Mathematics (2012)						
Bachelor's	achelor's with 1 major Mathematics (2012) JMU Würzburg • generated 26-Aug-2024 • exam. reg. page 237 / 237 data record Bachelor (180 ECTS) Mathematik - 2012 page 237 / 237					