

Subdivided Module Catalogue for the Subject

Computer Science

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

Examination regulations version: 2019 Responsible: Faculty of Mathematics and Computer Science Responsible: Institute of Computer Science

JMU Würzburg • generated 19-Apr-2025 • exam. reg. data record 82|079|-|-|H|2019



Learning Outcomes

German contents and learning outcome available but not translated yet.

Wissenschaftliche Befähigung

- Die Absolventinnen und Absolventen können die mathematischen, technischen, theoretischen und praktischen Grundlagen der Informatik anwenden.
- Die Absolventinnen und Absolventen verstehen die wesentlichen Zusammenhänge und Konzepte der einzelnen Teilgebiete der Informatik.
- Die Absolventinnen und Absolventen können tiefergehende Kenntnisse in mindestens einem Teilgebiet abrufen.
- Die Absolventinnen und Absolventen können unter Anleitung hard- und/oder softwaregetriebene Experimente durchführen, analysieren, auswerten und die erhaltenen Ergebnisse darstellen.
- Die Absolventinnen und Absolventen sind in der Lage, sich mit Hilfe von Fachliteratur in neue Aufgabengebiete einzuarbeiten und die Ergebnisse zu interpretieren und zu bewerten.
- Die Absolventinnen und Absolventen besitzen Abstraktionsvermögen, analytisches Denken, Problemlösungskompetenz und die Fähigkeit, Zusammenhänge zu strukturieren.
- Die Absolventinnen und Absolventen sind in der Lage, Methoden der Informatik unter Anleitung auf konkrete praktische oder theoretische Aufgabenstellungen anzuwenden, Lösungswege zu entwickeln und die Ergebnisse zu interpretieren und zu bewerten.
- Die Absolventinnen und Absolventen setzen die erlernten theoretischen und praktischen Methoden in geschlossener Form unter Anleitung ein, um zu zeigen, dass sie zur Anwendung der Grundlagen wissenschaftlichen Arbeitens befähigt sind.
- Die Absolventinnen und Absolventen können ihr Wissen und ihre Erkenntnisse einem Fachpublikum gegenüber darstellen und vertreten.

Befähigung zur Aufnahme einer Erwerbstätigkeit

- Die Absolventinnen und Absolventen können ihr Wissen und ihre Erkenntnisse einem Fachpublikum gegenüber darstellen und vertreten.
- Die Absolventinnen und Absolventen sind in der Lage, konstruktiv und zielorientiert in einem Team zusammenzuarbeiten und auftretende Konflikte zu lösen (Teamfähigkeit).
- Die Absolventinnen und Absolventen können ihre erworbenen Kompetenzen in unterschiedlichen interkulturellen Kontexten und in international zusammengesetzten Teams anwenden.
- Die Absolventinnen und Absolventen kennen wichtige Anforderungen und Arbeitsweisen im gewerblichen Umfeld sowie in Forschung und Entwicklung.
- Die Absolventinnen und Absolventen sind befähigt, Probleme zu analysieren und zu lösen und sich in weniger vertraute Themenkomplexe einzuarbeiten.

Persönlichkeitsentwicklung

- Eigenverantwortlichkeit, Selbstständigkeit, Zeitmanagement, Teamfähigkeit
- Die Absolventinnen und Absolventen kennen die Regeln guter wissenschaftlicher Praxis und beachten sie.
- Die Absolventinnen und Absolventen können ihr Wissen und ihre Erkenntnisse einem Fachpublikum gegenüber darstellen und vertreten.

Befähigung zum gesellschaftlichen Engagement

- Die Absolventinnen und Absolventen können naturwissenschaftliche Entwicklungen kritisch reflektieren und deren Auswirkungen auf die Wirtschaft, Gesellschaft und die Umwelt in Ansätzen erfassen, zum Beispiel Technikfolgenabschätzung, Ethik, IT-Recht oder Datenschutz.
- Die Absolventinnen und Absolventen haben ihr Wissen bezüglich wirtschaftlicher, gesellschaftlicher, naturwissenschaftlicher, kultureller etc. Fragestellungen erweitert und können begründet Position beziehen.



• Die Absolventinnen und Absolventen entwickeln die Bereitschaft und Fähigkeit, ihre Kompetenzen in partizipative Prozesse einzubringen und aktiv an Entscheidungen mitzuwirken.

Bachelor's with 1 major Computer Science (2	019)	
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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:

ASPO2015

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

26-Jul-2018 (2018-55)

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.

The subject is divided into

Abbreviation Module title		ECTS	Method of			
		credits	grading	page		
Compulsory Courses (125 l	ECTS credit	s)				
Computer Science (85 ECTS credits)						
10-I-GdP-172-m01	Fundamen	tals of Programming	5	NUM	48	
10-I-ADS-152-m01	Algorithms	and data structures	10	NUM	35	
10-I-ST-152-m01	Software T	echnology	10	NUM	76	
10-I-PP-191-m01	Practical C	ourse in Programming	10	B/NB	61	
10-I-SWP-152-m01	Practical co	ourse in software	10	B/NB	78	
10-I-RAL-152-m01	Digital com	nputer systems	10	NUM	65	
10-I-RIÜ-191-m01	Computer	Networks and Information Transmission	10	NUM	67	
10-I-DB-152-m01	Databases		5	NUM	44	
10-I-MCS-191-m01	Introductio	on into Human-Computer Interaction	5	NUM	59	
10-I-HWP-152-m01	Practical co	ourse in hardware	10	B/NB	51	
Theoretical Informatics (1	o ECTS cre	dits)				
10-I-TIV-152-m01	Theoretica	l Informatics	5	NUM	80	
10-I-TIT-191-m01	Tutorial Th	eoretical Informatics	5	B/NB	79	
Mathematics (30 ECTS cr	edits)					
10-l-LOG-152-m01	Logic for in	formatics	5	NUM	57	
10-M-INF1-152-m01	Mathemati	ics 1 for students in Computer Science	10	NUM	89	
10-M-INF2-152-m01	Mathemati	ics 2 for students in Computer Science	10	NUM	90	
10-I-AGT-152-m01	Algorithmi	c Graph Theory	5	NUM	37	
Compulsory Electives (25 E	CTS credits	5)				
Computer Science (15 EC	S credits)					
10-I-SEC-191-m01	IT Security		5	NUM	69	
10-l=lCG-152-m01	Interactive	Computer Graphics	5	NUM	31	
10-l-WBS-152-m01	Knowledge	e-based Systems	5	NUM	85	
10-I-DM-152-m01	Data Minin	g	5	NUM	46	
10-I-APR-172-m01	Advanced	Programming	5	NUM	39	
10-I-KT-191-m01	Computati	onal Complexity	5	NUM	55	
10-I-KD-191-m01	Cryptograp	hy and Data Security	5	NUM	53	
10-l-3D-152-m01	3D Point Cl	loud Processing	5	NUM	33	
10-l-BS-191-m01	Operating	Systems	5	NUM	42	
10-I-RAK-152-m01	Computer	Architecture	5	NUM	63	
10-I-SKS-191-m01	Control Pri	nciples of Modern Communication Systems	8	NUM	74	
10-l-Gl-152-m01	Selected B	asics of Computer Science	5	NUM	50	
subsidiary subject						
Students must select one of the minors offered and must achieve the required number of ECTS credits in this minor.						
Mathematics						
10-M-DIMaf-152-m01	Introduction to Discrete Mathematics for students of other subjects		10	NUM	88	
10-M-NUM1af-152-m01	Numerical	Numerical Mathematics 1 for students of other subjects		NUM	91	
10-M-STO-1af-152-m01	Stochastic	s 1 for students of other subjects	10	NUM	94	
10-M-ZTHaf-152-m01	Introductio	on Into Number Theory for students of other subjects	10	NUM	95	
10-M-DGLaf-152-m01	Ordinary D	ifferential Equations for students of other subjects	10	NUM	87	
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10-M-ORSaf-152-m01	1 Operations Research for students of other subjects			NUM	93	
Physics						
11-EFNF-152-m01	Introductio	on to Physics for Students of other Disciplines	7	NUM	96	
11-PFNF-152-m01	Laboratory	/ Course Physics for Students of other Disciplines	3	B/NB	102	
Economics						
12-NW-EBWL-152-m01	Introductio	on to Business Administration - Minor	5	NUM	122	
12-NW-EVWL-152-m01	Introductio	on to Economics - Minor	5	NUM	124	
12-ExtUR-G-152-m01	Financial A	Accounting	5	NUM	112	
12-IntUR-G-152-m01	Manageria	al Accounting	5	NUM	120	
12-BPL-G-152-m01	Supply, Pr tion	oduction and Operations Management. An Introduc-	5	NUM	108	
12-l&F-G-152-m01	Investmen	it and Finance. An Introduction	5	NUM	118	
12-Ewiinf-G-152-m01	Introductio	on to Business Informatics	5	NUM	110	
12-GP-G-152-m01	Integrated	Business Processes	5	NUM	116	
12-FRBE-F-152-m01	Forward a	nd Reverse Business Engineering	5	NUM	114	
Linguistics						
04-DtLABA-BM- SW-152-m01	Level One	Module German Linguistics	5	NUM	15	
04-DtLABA-AM- SW1-152-m01	Level Two	Module Grammatical Structures of German	5	NUM	13	
Biology	1			<u> </u>	<u> </u>	
07-1A1TI-152-m01	Evolution	and the Animal Kingdom	5	NUM	21	
07-2A2GENV-152-m01	Genetics,	Neurobiology, Behaviour	5	NUM	23	
07-M-BST-152-m01	Mathemat	ical Biology and Biostatistics	4	NUM	29	
07-3A30EK0-152-m01	Plant and	Animal Ecology	6	NUM	27	
07-3A3GEMT-152-m01	Genes, Mo	plecules, Technologies	6	NUM	25	
Law	<u> </u>			<u></u>		
02-J1-171-m01	Introductio	on to the German Legal System	5	NUM	9	
02-G&Hre-G-161-m01	Commerci	al and Business Law for Economists	5	NUM	8	
Geography	I			<u> </u>	<u>.</u>	
04-Geo-FER-						
NE-152-m01	Introductio	on to Geographical Remote Sensing	5	NUM	19	
04-Geo-FER-	Applicatio	na of Domoto Concing in Coography		NULAA		
NA-152-m01	Аррисано	is of kenote sensing in deography	5	NUM	1/	
Medicine						
03-M-MT-152-m01	Practical C	ourse in medical terminology	5	B/NB	12	
03-M-IM-152-m01	Internal M	edicine	5	NUM	11	
Key Skills Area (20 ECTS c	redits)					
General Key Skills (5 ECT In addition to the module transferable skills (ASQ).	S credits) es listed be	low, students may also take modules offered by JMU a	as part of t	he pool of gen	eral	
General Key Skills (subject-specific)						
10-I-IUI1-152-m01 Iutor activity 1 2 B/NB 82					82	
10-I-TUT2-152-m01	152-mo1 Tutor activity 2		2	B/NB	83	
10-I-IUI3-152-m01 UTOT ACTIVITY 3 2 B/NB 84						
Subject-specific Key Skills (15 ECTS credits)						
10-I-SEM1-152-m01	Seminar -	Selected Topics in Computer Science 1	5	NUM	71	
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10-I-SEM2-152-m01	Seminar - Selected Topics in Computer Science 2	5	NUM	73
10-I-PV-152-mo1 Project Presentation		5	NUM	62
Thesis (10 ECTS credits)				
10-l-BA-152-m01	Bachelor's Thesis Informatics	10	NUM	41

Module title			Abbreviation			
Comme	Commercial and Business Law for Economists 02-G&Hre-G-161-m01					
Module	e coord	inator		Module offered by		
Dean o	f the Fa	aculty of Law		Faculty of Law		
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					
This mo	odule p	provides an introduction t	o German and Europ	ean corporate and co	ommercial law.	
Intende	ed lear	ning outcomes				
The stu tation, ons and	ıdent h liability d comr	as knowledge of compan y, formation and dissolut nercial companies.	y and commercial lav ion of companies as	v, in particular of cor well as the basics of	mpany forms, power of represen- the law of commercial transacti-	
Course	s (type	, number of weekly conta	ct hours, language –	- if other than Germa	ın)	
V (3) +	Ü (2)					
Metho ster, in	d of as format	sessment (type, scope, la ion on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
written Assess	exami ment o	nation (approx. 120 minu ffered: Usually once a ye	tes) ar, summer semester			
Allocat	ion of _l	places				
There a chelor' other s the nur dents c lows: S tial cor allocat	are no r s stude ubjects mber of of other student nsidera ed by lo	estrictions with regard to ents with the minor Privat 5. 10 of these will be alloc f available places exceed r subjects. Should there b is applying after not havin tion. The remaining place ot as they become availab	available places for recht (Private Law). A cated to students of t the number of applic be more than 10 appli og successfully comp es will be allocated by ble.	students of Rechtsw total of 20 places w he Master's degree p cations, the remainin cations, the remaini leted assessment in y lot. A waiting list w	issenschaft (Law) as well as Ba- vill be allocated to students of programme Economics. Should ng places may be allocated to stu- ng places will be allocated as fol- past years will be given preferen- ill be maintained and places re-	
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teaching cycle						
Referred to in LPO L (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (4 major) Nanostructure Technology (2016)						
Bachelor's degree (1 major) Nanostructure Technology (2016) Bachelor's degree (1 major) Computer Science (2017) Baster's degree (1 major) Computer Science (2019) Master's degree (1 major) Nanostructure Technology (2020)						
mastel	Master's degree (1 major) Quantum reciniology (2021)					

Module title			Abbreviation		
Introduction t	Introduction to the German Legal System 02-J1-171-m01				
Module coordinator Module offered by			<u> </u>		
Dean of Studi	es Faculty of Law		Faculty of Law		
ECTS Methe	od of grading	Only after succ. con	npl. of module(s)		
5 nume	rical grade				
Duration	Module level	Other prerequisites	5		
1 semester	undergraduate				
Contents					
German conte	nts available but not tr	anslated yet.			
Die Vorlesung zessystematik den insbeson Arbeitsrecht b tionsrecht, da das Völkerrec	führt über die Beantwo k und Auslegungstechn dere die fünf Bücher de esprochen. Gegenstan s Verwaltungsrecht in s ht. Im Strafrecht wird ir	ortung allgemeiner juri iken in die großen Rec is Bürgerlichen Gesetz d der Einheit Öffentlich seinen allgemeinen un haltlich vor allem auf d	stischer Fragen wie c htsgebiete der Recht buches sowie das Ha nes Recht sind die Gr d besonderen Ausprä den allgemeinen Teil	ler Normenhierarchie swissenschaft ein. D Indels-, Gesellschaft undrechte, das Staa ägungen sowie das E und die wichtigsten	e, der Geset- vabei wer- s- und das tsorganisa- Europa- und Normen des
Intended loar		nes eingegangen.			
Gorman inton	ded learning outcomes		alatad vat		
German intended learning outcomes German intended learning outcomes available but not translated yet. Die Studierenden verfügen über Basiswissen in den wichtigsten Teilbereichen der Rechtswissenschaft. Sie haben neben fachlichen Grundkenntnissen über das materielle und das Prozessrecht auch allgemeine Kenntnisse beispielsweise über die Gesetzessystematik und die Rechtsquellenlehre erworben. Anhand von Beispielfällen haben sie ersten Einblick ins juristische Arbeiten erhalten. Courses (type, number of weekly contact hours, language — if other than German) V (4) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) written examination (approx. 120 minutes) Allocation of places max. 80 places. Students applying after not having successfully completed assessment in the past two semesters will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available. Places on all courses of the module with a restricted number of places will be allocated in the same procedure.					
Workload					
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)					
Bachelor's with 1 ma	jor Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informat	xam. reg. ik - 2019	page 9 / 125



Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Module title				Abbreviation		
Internal Medicine			03-M-IM-152-m01			
Module	e coord	inator		Module offered by		
unknov	wn			Faculty of Medicine		
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	unknown				
Conten	Its					
No info	rmatio	n on contents available.				
Intend	ed lear	ning outcomes				
No info	ormatio	n on intended learning ou	utcomes available.			
Course	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	in)	
V (o)						
Metho ster, in	d of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
oral ex per car Assess monolo	aminat ndidate ment w ogy, nei	ion (one candidate each:) vill usually have reference ohrology, endocrinology,	approx. 15 minutes, e to one of the sub-sp oncology, gastroente	or groups of up to 3 pecialities of internal prology, rheumatolog	candidates: approx. 10 minutes medicine, e. g. cardiology, pul- gy, infectious disease.	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor's degree (1 major) Computer Science (2015)						
Bachel	or's de	gree (1 major) Computer S	Science (2017)			
Bachel	Bachelor's degree (1 major) Computer Science (2019)					

Module title				Abbreviation		
Practical Course in medical terminology			03-M-MT-152-m01			
Module	e coord	inator		Module offered by		
Institut	e for th	e History of Medicine		Faculty of Medicine		
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	unknown				
Conten	ts					
No info	rmatio	n on contents available.				
Intende	ed lear	ning outcomes				
No info	rmatio	n on intended learning ou	utcomes available.			
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
P (o)		· · · · ·				
Methoo ster, in	l of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
written	exami	nation (approx. 60 to 90 i	minutes)			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in						
Bachelor's degree (1 major) Computer Science (2015)						
Bachel	Bachelor's degree (1 major) Computer Science (2017)					
Bachel	Bachelor's degree (1 major) Computer Science (2019)					
Bachel	Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)					
Bachel	or's de	gree (1 major) Artificial In	telligence and Data S	cience (2023)		
Bachel	Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)					

Module title				Abbreviation			
Level T	Level Two Module Grammatical Structures of German 04-DtLABA-AM-SW1-152-m01						
Module coordinator Module offered by			Module offered by				
holder	of the Chair of German Linguis	stics	Institute of German	Studies			
ECTS	Method of grading	Only after succ. con	npl. of module(s)				
5	numerical grade						
Duratio	on Module level	Other prerequisites					
	undergraduate						
Conter	its						
Within gramm cy dep tion of tise the start w sis of c and stu Intend	Within the lecture, this module aims to provide an overview of the German syntax with focus on the valency grammatical sentence analysis, e.g. determining clauses by the use of grammatical samples, determining valency depending and non-depending clauses, syntactical function and semantics of relative clauses, formal description of the structure of complex sentences. During this module, which is a part of the seminar, students will practise the analytical and description methods, covered during the lecture, by authentic sentences. This module will start with the analysis of simple sentences, then goes over to levels of clauses and will continue with the analysis of difficult sentences up to sub-levels. The tutorial, which is a part of the module, provides further practise and students will be confident with the covered description and analytical methods.						
Studer tify and up to t	nts possess solid knowledge o d determine syntactic structure he sentence level assuredly.	f the sub-area syntax w es and are acquainted	vith focus on valency with the description	grammar, they are a and analysis of lingu	able to iden- iistic units		
Course	es (type, number of weekly con	itact hours, language –	- if other than Germa	ın)			
V (1) +	S (2) + T (1)						
Metho ster, in	d of assessment (type, scope, formation on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-		
written	examination (approx. 75 minu	utes)					
Allocat	tion of places						
Additio	onal information						
Worklo	bad						
150 h							
Teachi	ng cvcle						
Referre	ed to in LPO L (examination reg	gulations for teaching-	degree programmes)				
8/311	vr 2 h)						
§ 63 I N	Nr. 2 b)						
Module appears in							
Bachelor's degree (1 major) Computer Science (2015)							
Bachelor's degree (1 major, 1 minor) German Language and Literature (Minor, 2015)							
Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)							
First state examination for the teaching degree Grundschule German (2015)							
First state examination for the teaching degree Gumpasium German (2015)							
First state examination for the teaching degree Mittelschule German (2015)							
Bachelor's degree (2 majors) German Language and Literature (2015)							
Master	's degree (1 major) Russian La	nguage and Culture (2	017)				
Bachelor's	with 1 major Computer Science (2019)	JMU Würzburg data record	g ● generated 19-Apr-2025 ● € Bachelor (180 ECTS) Informat	ixam. reg. ik - 2019	page 13 / 125		

Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) First state examination for the teaching degree Mittelschule German (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)

Module title			Abbreviation			
Level One Module German Linguistics 04-DtLABA-B				04-DtLABA-BM-SW-152-m01		
Module	e coordinator		Module offered by			
holder	of the Chair of German Linguist	ics	Institute of German	Studies		
ECTS	Method of grading	Only after succ. con	npl. of module(s)			
5	numerical grade					
Duratio	on Module level	Other prerequisites				
1 seme	ster undergraduate					
Conten	ts					
Within man lir descrip dual we analysi bet (IP/ ted tute acquire	Within the lecture, this module aims to provide an overview and first introduction to the important parts of Ger- man linguistics. At the same time, the seminar that is a part of the module, provides students with analytical and description methods up to the word level, for example morphological segmentation and classification of indivi- dual word forms into basic morphemes, morphology and inflectional morphemes, morphological and semantic analysis of word formation structures, phonetic and phonological transcription in International Phonetic Alpha- bet (IPA)-phonetics, graphical realisation of phonemes and associated with orthography principles. The associa- ted tutorial helps to practise further and to become more confident with the analytical and description methods,					
Intend	ed learning outcomes	-				
Studen le to de miliar v ted in t	its possess an overview of the c escribe and analyse linguistic un with the basic analytical and de the following modules.	liscipline German ling nits up to the word lev scription techniques	uistics and its indivi vel assuredly. Thanks of linguistics, which	dual subdisciplines. They are ab- s to the module, students are fa- will be extended and consolida-		
Course	s (type, number of weekly conta	act hours, language –	- if other than Germa	n)		
V (2) +	S (2) + T (1)					
Metho ster, in	d of assessment (type, scope, la formation on whether module c	anguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-		
written	examination (approx. 75 minut	es)				
Allocat	ion of places					
Additio	onal information					
Worklo	ad					
150 h						
Teachi	ng cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)						
§ 43 N § 63 N	§ 43 Nr. 2 b) § 63 Nr. 2 b)					
Module appears in						
Module appears inBachelor's degree (1 major) Computer Science (2015)Bachelor's degree (1 major, 1 minor) German Language and Literature (Minor, 2015)Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)First state examination for the teaching degree Grundschule German (2015)First state examination for the teaching degree Realschule German (2015)First state examination for the teaching degree Gymnasium German (2015)First state examination for the teaching degree Mittelschule German (2015)First state examination for the teaching degree Mittelschule German (2015)Bachelor's degree (2 majors) German Language and Literature (2015)						

Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) First state examination for the teaching degree Mittelschule German (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)

Module title				Abbreviation		
Applica	Applications of Remote Sensing in Geography 04-Geo-FERNA-152-mo1					
Modul	e coord	inator		Module offered by		
holder	of the I	Professorship of Remot	e Sensing	Institute of Geograp	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	i		
1 seme	ester	undergraduate				
Conter	its				· · · ·	
The lec fundan graphic topics atmosp cation	cture im nental u cal data are ana oheric c and cha	parts basic knowledge understanding of remo a, metadata, spatial ov logue, visual image inf correction. A focus lies ange detection. Further	about the analysis of i tely sensed data as geo erlaying of geodata, ge terpretation, digital ima on the digital remote s more, basics in model	remote sensing data binformation and late ographical informati age processing (calib ensing based mappi ling of remote sensir	for geographical que er geoinformation in on systems) is given oration, transformatio ng, i.e. spectral anal ng parameters is con	estions. First, general (geo- . Following on, filter) and ysis, classifi- veyed.
Intend	ed lear	ning outcomes				
The stu reflect sess di	udents o their es ifferent	explain applications of sential characteristics methodological appro	earth observation and . They summarise fund aches for the evaluatio	remote sensing. The amental aspects of (n of remote sensing	ey explain geographi digital) image proces data for geographica	cal data and ssing and as- al questions.
Course	s (type	, number of weekly cor	itact hours, language –	- if other than Germa	in)	
V (2) + Module	T (2) e taugh	t in: German and/or En	glish			
Metho ster. in	d of ass formati	sessment (type, scope, on on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
written Langua credita	examin age of a ble for	nation (approx. 45 min ssessment: German ar bonus	utes) nd/or English			
Allocat	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)		
Module appears in						
Bachelor's degree (1 major) Geography (2015)						
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2017)						
Bachelor's degree (1 major, 1 minor) Geography (Minor. 2015)						
Bachelor's degree (1 major, 1 minor) Geography (Kinior, 2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2015)						
Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2015)						
Bachelor's degree (2 majors) Geography (2015)						
Bachelor's degree (1 major, 1 minor) Geography (2017)						
Bachel	or s ae	gree (1 major) Compute	er Science (2017)			
Bachelor's	with 1 ma	jor Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informat	exam. reg. ik - 2019	page 17 / 125

Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Geography (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023)

Module title			Abbreviation		
Introdu	Introduction to Geographical Remote Sensing 04-Geo-FERNE-152-mo1				
Module	e coordinator		Module offered by		
holder	of the Professorship of Remote	Sensing	Institute of Geogram	ohy and Geology	
ECTS	Method of grading	Only after succ. con	npl. of module(s)	,	
5	numerical grade		, ,,		
Duratio	on Module level	Other prerequisites			
1 seme	ster undergraduate				
Conten	its				
The lec sensing - surfac ant ten and act mote s	ture gives an overview of the pr g / physical principles (energy a ces, objects under investigation nperature, emissivity / detector tive systems, e.g. hyperspectral ensing parameters (land, atmos	inciples of remote se and radiation, interact : soils, vegetation, wa s: characterisation of and LiDAR) / radar re sphere, oceans).	nsing, that are: theor tions radiation - atmo ater) / thermal remot remote sensing data emote sensing / rada	retical basics, history of remote osphere, interactions radiation re sensing: radiation laws, radi- a, platforms and sensors (passive ar interferometry / basics for re-	
Intend	ed learning outcomes				
The stu sphere mote s	idents describe basics of earth to the object under investigation ensing data, sensors and platfo	observation. They out on and back to the se orms.	tline and explain the nsor. They emphasis	radiation path through the atmo- e essential characteristics of re-	
Course	s (type, number of weekly conta	act hours, language –	- if other than Germa	n)	
V (2) + Module	T (2) e taught in: German and/or Eng	lish			
Metho ster, in	d of assessment (type, scope, la formation on whether module of	anguage — if other th an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
written Langua credita	examination (approx. 45 minut age of assessment: German and ble for bonus	res) /or English			
Allocat	ion of places				
Additio	onal information				
Worklo	ad				
150 h					
Teachi	ng cycle				
Referred to in LPO I (examination regulations for teaching-degree programmes)					
§ 66 Nr. 2					
Module appears in					
Bachelor's degree (1 major) Geography (2015)					
Bachelor's degree (1 major) Computer Science (2015)					
Bachelor's degree (1 major) Mathematics (2015)					
Bachelor's degree (1 major, 1 minor) Geography (Minor, 2015)					
Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015)					
Bachel	Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (Minor, 2015)				
Bachel	or's degree (1 major, 1 minor) G	eography (Focus Phys	sical Geography) (20	15)	
Bachel	or's degree (1 major, 1 minor) G	eography (Focus Hum	an Geography) (201	5)	
Гвасиеl	Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015)				

First state examination for the teaching degree Gymnasium Geography (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Geography (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) First state examination for the teaching degree Gymnasium Geography (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

UNIVERSITÄT

WÜRZBURG

Module title					Abbreviation
Evoluti	on and	the Animal Kingdom			07-1A1TI-152-m01
Module	e coord	inator		Module offered by	
holder of the Professorship of Zoology at the Department of Electronmicroscopy			at the Department of	Faculty of Biology	
ECTS	Methe	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	Admission prerequisite to assessment: exercises. Regular attendance		
			(minimum 80%) and successful completion of exercises (approx. 25 to		tion of exercises (approx. 25 to
			30 hours) are prerec	quisites for admissio	on to assessment.

Contents

The lecture *Evolution* will acquaint students with fundamental concepts and mechanisms of evolutionary biology: the origins of diversity; natural and sexual selection; speciation; population genetics. It will provide students with an introduction to phylogenetic reconstruction and will thus enable them to develop an understanding of the system of plants and animals. During the exercise, students will complete exercises on mechanistic evolution and evolutionary history. The lecture *Tierreich (Animal Kingdom)* will discuss the diversity of animal organisms on the basis of the phyla of the animal kingdom focusing on phylogenetic criteria. It will address the ecological constraints that led to the development of different types of body plans with their different structures and functions. In this context, the lecture will also develop an awareness in students of how important a knowledge of the fundamental principles of zoology is for research and applications not only but in particular in biology and medicine. In the exercise, students will prepare and/or examine selected species and histological preparations and will thus become familiar with the functional and morphological characteristics of the major multicellular animal phyla. In this context, students will practise working with light microscopes and stereo microscopes and will acquire fundamental preparation skills. They will prepare drawings, documenting and interpreting what they have seen.

Intended learning outcomes

Students will be familiar with the fundamental concepts and mechanisms of evolutionary biology and will know that these are key to understanding biological processes. They will have gained an overview of the diversity of animals on the basis of different types of body plans and will understand important structures in both a functional and an ecological context.

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

V (2) + Ü (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 minutes) creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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

§ 41 | Nr. 1 (4 ECTS credits) and § 41 | Nr. 4 (1 ECTS credits) § 61 | Nr. 1 (4 ECTS credits) and § 61 | Nr. 4 (1 ECTS credits)

bachelor s with I major computer Science (2019)	Bachelor's with 1	major Computer So	cience (2019)
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Module appears in

Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Computer Science (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major) Computer Science (2017)
Bachelor's degree (1 major) Computer Science (2019)
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Module	Module title				Abbreviation	
Geneti	cs, Neu	robiology, Behaviour			07-2A2GENV-152-m	01
Module	e coord	inator		Module offered by		
Dean o	f Studie	es Biologie (Biology)		Faculty of Biology		
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	Admission prerequi	site to assessment:	exercises. Regular at	tendance
			(minimum 80%) and	d successful comple	tion of exercises (ap	prox. 25 to
			30 hours) are prerec	quisites for admissio	n to assessment.	
Conten	ts					
Fundar	Fundamental principles of genetics, neurobiology and behavioural biology.					
Intend	ed learı	ning outcomes				
Students will understand that there are molecular, cellular and system biological mechanisms and processes in- volved in animal behaviour and will be able to relate animal behaviour to the molecular and formal bases of in- heritance.						
Course	s (type	, number of weekly con	tact hours, language –	- if other than Germa	n)	
V (3)						
Metho ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
written credita	examiı ble for	nation (approx. 60 to 90 bonus	o minutes)			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi		0				
	ig cycl	c				
Referre	d to in	LPO I (examination reg	ulations for teaching-	degree programmes)		
§ 61 N § 61 N § 61 N	Ir. 2 (2 Ir. 3 (1 E Ir. 4 (1 E	ECTS credits) ECTS credits) ECTS credits)				
Module	e appea	urs in				
Bachel	or's de	gree (1 maior) Biology (2015)			
Bachel	or's de	gree (1 major) Compute	r Science (2015)			
Bachel	or's de	gree (1 major) Mathema	tics (2015)			
Bachel	or's de	gree (1 major) Computa	tional Mathematics (20	015)		
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)						
Bachelor's degree (1 major) Biology (2017)						
Bachel	Bachelor's degree (1 major) Computer Science (2017)					
Bachel	Bachelor's degree (1 major) Computer Science (2019)					
Module	Module studies (Bachelor) Biology (2019)					
Module	Module studies (Bachelor) Orientierungsstudien (2020)					
Bachel	Bachelor's degree (1 major) Biology (2021)					
Bachel	or's de	gree (1 major, 1 minor)	Biology (Minor, 2020)			
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 23 / 125

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Module title					Abbreviation
Genes,	Molec	ules, Technologies			07-3A3GEMT-152-m01
Module	e coord	inator		Module offered by	
Dean o	Dean of Studies Biologie (Biology)			Faculty of Biology	
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)	
6	numerical grade				
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Its				
The mo ng topi to Gene of the e	odule <i>G</i> cs: The etics) a eukaryc will al	ene, Moleküle, Technolo e section Spezielle Genet nd will deepen the stude otic genome, regulatory F so focus on methods of s	gien (Genes, Molecul ik (Special Genetics) v ents' knowledge of top RNA, epigenetically ar	es, Technologies) wi vill build on Einführu bics from the followin d evolutionarily sigr ling, reverse genetic	I include lectures on the followi- ing in die Genetik (Introduction ng areas: structure and evolution nificant genetic mechanisms. The s and modern methods of gene

section will also focus on methods of gene expression profiling, reverse genetics and modern methods of gene function and gene sequence analysis. In the lecture *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. During the section *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 lecture *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 prote-ins. Pharmacokinetics describes the uptake, distribution, metabolism and elimination of a drug or xenobiotic in an organism.

Intended learning outcomes

Students possess an advanced knowledge on genome evolution and the regulation of gene expression and are familiar with current methods in genetics as well as methods for the analysis of DNA and protein databases. They have acquired an overview of both traditional and modern methods in biotechnology and are familiar with fundamental topics in biotechnology. Students have acquired an overview of the fundamental principles of the development and review of active agents in research, clinical practice and the pharmaceutical industry. They are familiar with methods and technologies in biology and are able to evaluate potential applications of these in research and industry.

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

V (4)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 90 minutes) creditable for bonus

Allocation of places

Additional information

Workload

180 h

Teaching cycle

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

Module appears in

Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Computer Science (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major) Computer Science (2017)
Bachelor's degree (1 major) Computer Science (2019)
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
exchange program Biosciences (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Modul	Module title							
Plant a	and Anii	nal Ecology			07-3A30EK0-152-m	101		
Modul	e coord	inator		Module offered by				
Doan	of Studie	Riologia (Biology)		Eaculty of Biology				
	Mothe	ad of grading	Only offer succ. con					
6	nume	rical grade						
Durati	an	Madula laval	Other prerequisites					
1 Seme	on		Other prerequisites					
Conte	nts	undergraduate						
This m	odule w	vill provide students wit	h an overview of the ir	nteractions of plants	and animals with th	eir abiotic		
and bi	otic env	ironments. The module	will focus on the func	tional adaptation to	environmental cond	itions as well		
as on t	he stru	cture and dynamics of p	oopulations, communi	ties and ecosystems	. Students will be in	troduced to		
fundar	nental r	nodel concepts of ecolo	ogy, will become famil	iar with examples of	research findings ar	nd will acqui-		
re the	fundam	ental knowledge neces	sary to develop an unc	derstanding of currer	it ecological problem	ns.		
Intend	ed leari	ning outcomes						
Stude	nts are f	amiliar with the fundan	nental principles of res	earch in the field of	ecology and with the	e most im-		
portan	t abiotio	c and biotic factors that	influence the distribu	tion and frequency of	of occurrence of orga	nisms in		
ronme	ntal issi	lent. In addition, they u		ic relevance ecology		ent of envi-		
Course	es (type	, number of weekly con	tact hours, language –	- if other than Germa	ın)			
V (2) +	Ü (2)	· · · ·						
Metho	d of ass	essment (type, scope,	 language — if other th	an German. examina	ition offered — if not	everv seme-		
ster, ir	formati	on on whether module	can be chosen to earn	a bonus)		,		
writter	ı examiı	nation (approx. 90 minu	ites)					
credita	ble for	bonus						
Alloca	tion of p	olaces						
Additi	onal info	ormation						
			_					
Workle	oad							
180 h								
Teachi	ng cycl	9						
Referr	ed to in	LPOI (examination reg	ulations for teaching-	degree programmes)				
§6111	Vr. 4							
Modul	e appea	rs in						
Bache	lor's de	gree (1 major) Biology (2	2015)					
Bache	lor's de	gree (1 major) Geograpł	ıy (2015)					
Bache	Bachelor's degree (1 major) Computer Science (2015)							
Bache	Bachelor's degree (1 major) Mathematics (2015)							
Bachelor's degree (1 major) Computational Mathematics (2015)								
Bache	lor's de	gree (1 major, 1 minor) I	Biology (Minor, 2015)					
First st	ate exa	mination for the teachin	ng degree Gymnasium	Biology (2015)				
Bache	Bachelor's degree (1 major) Biology (2017)							
Bache	Bachelor's degree (1 major) Computer Science (2017)							
Bache	lor's de	gree (1 major) Compute	r Science (2019)					
Bache	lor's de	gree (1 major) Biology (:	2021)					
Bachelor's	s with 1 maj	or Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informat	exam. reg. ik - 2019	page 27 / 125		

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) exchange program Biosciences (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Module	Module title			Abbreviation		
Mathe	natical	Biology and Biostatist	ics		07-M-BST-152-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	npl. of module(s)		
4	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Fundar	nental	principles of the most i	mportant mathematica	l and statistical met	hods in biology.	
Intend	Intended learning outcomes					
Studen	te will l	have acquired fundame	 Intal skills in the evalu	ation of experiments	the interpretation (of readings
and nu	mbers	as well as the mathema	itical description of bio	ological processes.	, the interpretation (n readings
Course	s (type	, number of weekly con	tact hours, language –	- if other than Germa	n)	
V (2) +	Ü (2)					
Metho ster, in	Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus)					
written	examii ble for	nation (approx. 60 minu bonus	utes)			
Allocat	ion of r					
Allocal		Jaces				
Additio	nal inf	ormation				
Worklo	ad					
120 h						
Teachi	ng cycl	е				
Referre	d to in	LPO I (examination reg	gulations for teaching-	degree programmes)		
 Modula	2000	arc in				
Rachol	or's do	aroo (1 major) Piochomi	ictn (2015)			
Bachol	or's de	gree (1 major) Biology (ISUIY (2015)			
Bachel	or's de	gree (1 major) Compute	2015) r Science (2015)			
Bachel	or's de	gree (1 major) Compute	1 Science (2015)			
Bachel	or's de	gree (1 major) Mathema	tional Mathematics (2)	715)		
Bachel	or's de	gree (1 major, 1 minor)	Riology (Minor, 2015)	((1))		
Bachel	or's de	gree (1 major) Biology (2	2017)			
Bachel	or's de	gree (1 major) Biochemi	istry (2017)			
Bachel	or's de	gree (1 major) Compute	r Science (2017)			
Bachel	or's de	gree (1 major) Compute	r Science (2019)			
Bachel	or's de	gree (1 major) Biology (2021)			
Bachel	or's de	gree (1 major, 1 minor) l	Biology (Minor, 2020)			
Bachel	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)					
Bachel	3achelor's degree (1 major) Computer Science und Sustainability (2021)					
Bachel	Bachelor's degree (1 major) Biochemistry (2022)					
Bachel	or's de	gree (1 major) Biology (:	2022)			
Bachel	or's de	gree (1 major) Artificial	Intelligence and Data S	Science (2022)		
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 29 / 125



Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Module title				Abbreviation	
Interactive C	omputer Graphics		10-I=ICG-152-m01		
Module coor	dinator		Module offered by		
holder of the	Chair of Computer Scie	nce IX	Institute of Computer Science		
ECTS Meth	nod of grading	Only after succ. con	npl. of module(s)		
5 num	erical grade				
Duration	Module level	Other prerequisites			
1 semester	graduate				
Contents					
Computer graphics studies methods for digitally synthesising and manipulating visual content. This course specifically concentrates on interactive graphics with an additional focus on 3D graphics as a requirement for many contemporary as well as for novel human-computer interfaces and computer games. The course will cover topics about light and images, lighting models, data representations, mathematical formulations of movements, projection as well as texturing methods. Theoretical aspects of the steps involved in ray-tracing and the raster pipeline will be complemented by algorithmical approaches for interactive image syntheses using computer systems. Accompanying software solutions will utilise modern graphics packages and languages like OpenGL, GLSL and/ or DirectX. Intended learning outcomes At the end of the course, the students will have a broad understanding of the underlying theoretical models of computer graphics. They will be able to implement a prominent variety of these models, to build their own interactive graphics applications and to choose the right software tool for this task. Courses (type, number of weekly contact hours, language — if other than German) V (2) + Ü (2) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) written examination (approx. 60 to 120 minutes).					
prox. 15 minu Language of creditable fo	utes per candidate each assessment: German ar r bonus	id/or English			idates (ap-
Allocation of	places				
Additional in	formation				
Focuses avai HCI	lable for students of the	Master's programme I	nformatik (Computer	Science, 120 ECTS o	credits):
Workload					
150 h					
Teaching cvo	le				
Referred to in LPO L (examination regulations for teaching-degree programmes)					
 Modulo appears in					
Bachelor's de	ars III	er Science (2015)			
Bachelor's d	egree (1 major) Mathem	atics (2015)			
Bachelor's degree (1 major) Computational Mathematics (2015)					
Master's degree (1 major) Computer Science (2016)					
Bachelor's d	egree (1 major) Compute	er Science (2017)			
Bachelor's with 1 m	ajor Computer Science (2019)	JMU Würzburg	• generated 19-Apr-2025 • e	xam. reg.	page 31 / 125
		data record I	3achelor (18o ECTS) Informati	K - 2019	



Bachelor's degree (1 major) Computer Science (2019)

Bachelor's with 1 major Computer Science (2019)	JMU Würzburg • generated 19-Apr-2025 • exam. reg.
	data record Bachelor (180 ECTS) Informatik - 2019

Module	Module title				Abbreviation	Abbreviation	
3D Poi	nt Clou	d Processing			10-l-3D-152-m01		
Module	e coord	inator		Module offered by			
holder	of the (Chair of Computer Scie	nce XVII	Institute of Computer Science			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
5	nume	rical grade					
Duratio	on	Module level	Other prerequisites	i			
1 seme	ester	undergraduate					
Conten	nts						
Laser scanning, Kinect and camera models, basic data structures (lists, arrays, oc-trees), calculating normals, k- d trees, registration, features, segmentation, tracking, applications for airborne mapping, applications to mobile mapping.							
Intend	ed lear	ning outcomes					
Studer munica data pr require	Students understand the fundamental principles of all aspects of 3D point cloud processing and are able to com- municate with engineers / surveyors / CV people / etc. Students are able to solve problems of modern sensor data processing and have experienced that real application scenarios are challenging in terms of computational requirements, in terms of memory requirements and in terms of implementation issues.						
Course	s (type	, number of weekly cor	itact nours, language –	– If other than Germa	in)		
V (2) +	U (2)						
Metho ster, in	d of ass formati	on on whether module	language — if other th can be chosen to earn	an German, examina 1 a bonus)	ition offered — if not	every seme-	
If anno examir prox. 1 Langua credita	ounced nation o 5 minut age of a ible for	by the lecturer at the b of one candidate each (ces per candidate). ssessment: German ar bonus	eginning of the course, approx. 20 minutes) or nd/or English	the written examina r an oral examination	tion may be replace in groups of 2 cand	d by an oral idates (ap-	
Allocat	tion of p	olaces					
Additio	onal inf	ormation					
Worklo	oad						
150 h							
Teachi	ng cycl	e					
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)			
§ 22	Nr. 3 b)						
Module appears in							
Bachelor's degree (1 major) Computer Science (2015)							
Bachel	Bachelor's degree (1 major) Mathematics (2015)						
Bachelor's degree (1 major) Computational Mathematics (2015)							
Bachelor's degree (1 major) Aerospace Computer Science (2015)							
rissi state examination for the teaching degree Gymnasium Computer Science (2015)							
Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)							
Bachel	or's de	gree (1 major) Aerospa	ce Computer Science (2	2017)	, •,		
Bachel	or's de	gree (1 major) Compute	er Science (2017)				
Bachelor's	with 1 ma	ior Computer Science (2010)	IMU Würzburg	g • generated 10-Apr-2025 • e	exam. reg.	page 33 / 125	
		, , , , , , , , , , , , , , , , , , , ,	data record	Bachelor (180 ECTS) Informati	ik - 2019		

UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Computer Science (2019)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)

Bachelor's degree (1 major) Aerospace Computer Science (2020)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)

Bachelor's degree (1 major) Mathematics (2023)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Bachelor's degree (1 major) Games Engineering (2025)

Modul	Module title			Abbreviation			
Algorit	thms an	d data structures			10-I-ADS-152-m01		
Modul	e coord	inator		Module offered by			
Dean o	of Studio	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					
Durati	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conter	nts						
Desigr ta type	and ar s, lists,	alysis of algorithms, re trees, graphs, basic gi	ecursion vs. iteration, s raph algorithms, progra	ort and search meth amming in Java.	ods, data structures	, abstract da-	
Intend	ed lear	ning outcomes					
Students are proficient in independently designing, precisely describing and analyzing algorithms. The students know the basic paradigms for the design of algorithms and can implement them in practical programs. Students are able to estimate the runtime behavior of algorithms and prove the correctness of algorithms.							
Course	Courses (type, number of weekly contact hours, language — if other than German)						
V (4) + Ü (2)							
Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus)							
If anno examin prox. 1 credita	If announced by the lecturer at the beginning of the course, 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. 15 minutes per candidate). creditable for bonus						
Additi	onal inf	ormation					
Workle	nad						
200 h	<u> </u>						
Teachi	ng cycl	e					
Teachi	ng cycle	e: only in winter semes	ter				
Referr	ed to in	LPO I (examination re	gulations for teaching-	degree programmes)			
§ 49 § 69	Nr. 1 a) Nr. 1 a)		<u></u>				
Modul	e appea	urs in					
Bache	lor's de	gree (1 major) Compute	er Science (2015)				
Bache	lor's de	gree (1 major) Mathema	athematics (2015)				
Bache	lor's de	gree (1 major) Economia gree (1 major) Human-(Computer Systems (201	5)			
Bache	lor's de	gree (1 major) Computa	ational Mathematics (2)	015)			
Bache	Bachelor's degree (1 major) Aerospace Computer Science (2015)						
First st	ate exa	mination for the teachi	ng degree Realschule (Computer Science (2	015)		
First st	First state examination for the teaching degree Gymnasium Computer Science (2015)						
Bache	Bachelor's degree (1 major) Aerospace Computer Science (2017)						
Bache	Bachelor's degree (1 major) Computer Science (2017)						
Bache	lor's de	gree (1 major) Compute	er Science (2019)				
Bachelor's	with 1 ma	jor Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informat	exam. reg. ik - 2019	page 35 / 125	



Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Mathematics (2023)
Module title				Abbreviation		
Algorithmic Graph Theory 10-I-AGT-152-m01					10-l-AGT-152-m01	
Module	e coord	inator		Module offered by		
holder	of the C	hair of Computer Scie	nce l	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	ical grade				
Duratio	on	Module level	Other prerequisites	6		
1 seme	ster	undergraduate				
Conten	ts					
We dis colouri of grap prograi	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.					
Intend	ed learr	ning outcomes				
The stu cipants course	idents a s are ab , studer	are able to model typic le to decide which too nts learn in detail how	al problems in comput I from the course helps to estimate the run tim	er science as graph p solve a given graph e of given graph algo - if other than Germa	problems. In additior problem algorithmic prithms.	1, the parti- ally. In this
V(a)	<u>а (турс,</u> П (а)	number of weekly cor		n other than defina	11)	
V (2) +			lawayaa if athay th		tion offered if not	
ster. in	d of ass formati	on on whether module	e can be chosen to earn	an German, examina 1 a bonus)	tion offered — if not	every seme-
If anno examir prox. 19 Langua credita	unced I nation o 5 minut age of a ble for ion of n	by the lecturer at the b f one candidate each (es per candidate). ssessment: German ar bonus Jaces	eginning of the course, (approx. 20 minutes) of nd/or English	, the written examina r an oral examination	tion may be replaced in groups of 2 cand	d by an oral idates (ap-
Additio	onal info	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	9				
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)		
§ 22	Nr. 3 b)					
Module	e appea	rs in				
Bachel	or's deg	gree (1 major) Compute	er Science (2015)			
Bachel	or's deg	gree (1 major) Mathem	atics (2015)			
Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachel	or's deg	gree (1 major) Aerospa	ce Computer Science (2	2015) Computer Science (c	2015)	
First state examination for the teaching degree Gymnasium Computer Science (2015)						
Supple	Supplementary course MINT Teacher Education PLUS, Flite Network Bavaria (FNB) (2016)					
Bachelor's degree (1 major) Aerospace Computer Science (2017)						
Bachel	or's deg	gree (1 major) Compute	er Science (2017)			
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 37 / 125

Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title				Abbreviation		
Advanced Programming				10-I-APR-172-m01		
Modul	e coord	inator		Module offered by		
holdor	of the (Thair of Computer Science	0.11	Institute of Computer Science		
FCTS	Mothe	d of grading		nl of module(s)		
	nume	rical grade				
Durati	munic	Madula laval	Other preveruisites			
	octor		other prerequisites			
Conter	nts	undergraduate	<u> </u>			
With the knowledge of basic programming, taught in introductory lectures, it is possible to realize simpler pro- grams. If more complex problems are to be tackled, suboptimal results like long, incomprehensible functions and code duplicates occur. In this lecture, further knowledge is to be conveyed on how to give programs and co- de a sensible structure. Also, further topics in the areas of software security and parallel programming are dis- cussed						
Intend	ed learı	ning outcomes				
Studer then in allel pr sing.	nts learr npleme rocessir	n advanced programming nted in multiple languag ng concepts are introduce	g paradigms especial es and their efficienc ed culminating in the	ly suited for space ap y measured using sta use of GPU architect	oplications. Differen andard metrics. In ac tures for extremely q	t patterns are ddition, par- uick proces-
Course	es (type	, number of weekly conta	ict hours, language –	- if other than Germa	n)	
V (2) +	Ü (2)					
Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, 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 (ap- prox. 15 minutes per candidate).						
credita	ible for	bonus				
Allocat	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	bad					
150 h						
Teachi	ng cycl	9				
Referre	ed to in	LPOI (examination regu	lations for teaching-	legree programmes)		
§ 22	Nr. 3 b)	· · · · ·				
Modul	e appea	rs in				
Bachel	lor's de	gree (1 major) Computer :	Science (2017)			
Bachel	lor's de	gree (1 major) Computer	Science (2019)			
Modul	e studie	es (Bachelor) Computer S	cience (2019)			
Master	r's degre	ee (1 major) Nanostructu	re Technology (2020)			
Master's degree (1 major) Physics (2020)						
Master	Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)					
Supple	ementar	y course MINT Teacher E	ducation PLUS, Elite	Network Bavaria (EN	B) (2020)	
Bachel	lor's de	gree (1 major) Business l	nformation Systems (2020)		
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record I	; • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 39 / 125

Master's degree (1 major) Physics International (2020) Master's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Master's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Business Information Systems (2023) Master's degree (1 major) Quantum Engineering (2024) Master's degree (1 major) Physics International (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module	Module title				Abbreviation
Bachel	or's Th	esis Informatics			10-I-BA-152-m01
Module	e coord	inator		Module offered by	
Dean of	f Studie	es Informatik (Computer S	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			
Conten	ts				
Researd scientif	ching a fic prac	nd writing on a defined p tice.	roblem within a giver	n time frame and adl	hering to the principles of good
Intende	ed leari	ning outcomes			
The stu practice	dents a e.	are able to research and v	write on a defined pro	blem, adhering to th	ne principles of good scientific
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
No cou	rses as	signed to module			
Methoo ster, inf	l of ass formati	essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Bachelo Langua	or's the ge of a	esis (approx. 50 to 100 pa ssessment: German and,	iges) /or English		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Time to	compl	ete: 10 weeks.			
Worklo	ad				
300 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
		· · · · · · · · · · · · · · · · · · ·			
Module	e appea	urs in			
Bachel	or's de	gree (1 major) Computer S	Science (2015)		
Bachel	or's de	gree (1 major) Computer S	Science (2017)		
Bachel	or's de	gree (1 major) Computer S	Science (2019)		

Operating Systems 10-I-BS-191-m01 Module coordinator Module offreed by Indice of the Chair of Computer Science II Institute of Computer Science ECTS Methode of grading Only after succ. compl. of module(s) 5 numerical grade - Duration Module tevel Other prerequisites 1 semester undergraduate - Contents Introduction to computer systems, development of operating systems, architecture principles, interrupt processing in operating systems, processes and threads, CPU scheduling, synchronisation and communication, memory management, device and file management, operating systems, architecture principles, interrupt processing in operating systems, processes and threads, CPU scheduling, synchronisation and communication, memory management, device and file management, operating systems, architecture principles, interrupt processing in operating systems, processes and threads, CPU scheduling, synchronisation and communication, memory management, device and file nanagement, operating systems, and communication, memory management, device and file nanagement, operating systems, and communication, memory management, device and file nanagement, operating systems, and communication, memory management, device and file nanagement, operating systems, and communication, memory management, device and file nanagement, operating systems, and communication, memory management, device and file nanagement, operating systems, and communication of the communication of the comman on whether module can be chosen to earn a bonus) V(1 (2) Module taught in:	Module title Abbreviation				Abbreviation		
Module corritation Module offered by holder of the Chair of Computer Science II Institute of Computer Science ECTS Method ✓ fr grading Only after succ. compl. of module(s) 5 numerical grade - Duration Module level Other prerequisites 1 semester undergraduate - Contents - - Introduction to computer systems, processes and threads, CPU scheduling, synchronisation and communication, memo-ry management, device and file management, operating system virtualisation. Intended learning outcomes - The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language – if other than German) V (2) + 0 (2) - - - Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module can be chosen to earn a bonus) written examination (approx. 6 to to 120 minutes). If announced by the lecture at the beginning of the course, 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. 5 minutes) or an oral examination in groups of 2 candidates (approx, 5 minutes) Idantional info	Operat	ting Sys	stems			10-l-BS-191-m01	
Institute of Computer Science Institute of Computer Science ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade	Modul	e coord	inator		Module offered by		
Carton of a standard of grading Only after succ. compl. of module(s) 5 Inum=rical grade Duration Module level Other prerequisites isemester undergraduate Contents Contents Contents Introduction to computer systems, processes and threads, CPU scheduling, synchronisation and communication, memory management, device and file management, operating systems virtualisation. Intended learning outcomes The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language if other than German, examination offered if not every semester, information on whether module can be chosen to earn a bonus) Worlte of yating and the approximately. If announced by the lecturer at the beginning of the course, the written examination in groups of z candidates (approx. z o minutes). If announced by the lecturer at the beginning of the course, the written examination in groups of z candidates (approx. z o minutes). Adtional information Adtional information	holder	of the (Chair of Computer Scie	nce ll	Institute of Computer Science		
5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Introduction to computer systems, development of operating system virtualisation. Introduction to computer systems, processes and threads, CPU scheduling, synchronisation and communication, memory management, device and file management, operating system virtualisation. Intended learning outcomes The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language – if other than German, examination offered – if not every semester, information on whether module can be chosen to ean a bonus) written examination (approx, 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate (approx, 20 minutes) or an oral examination in groups of 2 candidates (approx, 15 minutes per candidate). Language of assessment: (serman and/or English Alditional information Additional information Module appears in Bachelor's degree (1 major) Physics (2020) Master's degree (1 major) Physics (2020) <td>ECTS</td> <td>Metho</td> <td>od of grading</td> <td>Only after succ. con</td> <td>npl. of module(s)</td> <td></td> <th></th>	ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
Duration Module level Other prerequisites 1 semester undergraduate	5	nume	rical grade		,		
1 semester undergraduate Contents Introduction to computer systems, development of operating systems, architecture principles, interrupt processing in operating systems, processes and threads, CPU scheduling, synchronisation and communication, memory management, device and file management, operating system virtualisation. Intended learning outcomes The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language — if other than German) V (2) + 0 (2) Module taught in: English Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) written examination (approx. 60 to 120 minutes). If announced by the lecture at the beginning of the course, 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. 3 prinutes per candidate). Language of assessment: German and/or English Cereditable for bonus Allocation of place Additional information Module appears in Bachelor's degree (najor) Computer Science (2019) Master's degree (najor) Computer Science (2019) Master's degree (najor) Physics (12020) Bachelor's degree (najor) Physics International (2020) Master's degree (najor) Physics International (2020) Master's degree (najor) Physics International (2020) Bachelor's degree (najor) Automating (2020) Bachelor's degree (najor	Durati	on	Module level	Other prerequisites	i		
Contents Introduction to computer systems, processes and threads, CPU scheduling, synchronisation and communication, memo- ry management, device and file management, operating system virtualisation. Intendel learning outcomes The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language – if other than German) V (2) + Ü (2) Module taught in: English Method of assessment (type, scope, language – if other than German, examination offered – if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination on on candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (ap- prox. 15 minutes per candidate). Language of assessment: Germa and/or English creditable for bonus Allocation of places Morkload 150 h Teaching cycle Morkload 161 n. DO 1 (examination regulations for teaching-degree programmes) Matter appres in Bachelor's degree (1 major) Computer Science (2020) Master's degree (1 major) Nanostructure Technology (2020)<	1 seme	ester	undergraduate				
Introduction to computer systems, development of operating systems, architecture principles, interrupt processing in operating systems, processes and threads, CPU scheduling, synchronisation and communication, memo- ry management, device and file management, operating system virtualisation. Intended learning outcomes The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language – if other than German) V (2) + 0 (2) Module taught in: English Method of assessment (type, scope, language – if other than German, examination offered – if not every seme- ster, information on whether module can be chosen to eam a bonus) written examination on ofo e candidate each (aprox. 20 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (aprox. 20 minutes) or an oral examination in groups of 2 candidates (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English Ceditable for bonus Allocation of places - Additional information - Additional information - C Morkload - Sector Course Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Physics International (2020) Master's degree (1 major) Physics International (2020) Bachelor's degree (1 major) Physics Internation (2020) Bachelor's degree (1 major) Omputer Science (2020) Bachelor's degree (1 major) Omputer Science (2020) Bachelor's degree (1 major) Physics International (2020) Bachelor	Conter	nts					
Intended learning outcomes The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language — if other than German) Y (2) + 0 (2) Module taught in: English Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, 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 (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus	Introdu sing in ry man	uction to operati agemer	o computer systems, d ing systems, processes nt, device and file man	evelopment of operatir s and threads, CPU sch agement, operating sys	ng systems, architect eduling, synchronisa stem virtualisation.	ure principles, interr tion and communica	rupt proces- ation, memo-
The students possess knowledge and practical skills in building and using essential parts of operating systems. Courses (type, number of weekly contact hours, language — if other than German) V (2) + 0 (2) Module taught in: English Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) written examination (approx. 6o to 20 minutes). If announced by the lecturer at the beginning of the course, 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. 35 minutes per candidate). Language of assessment: Germa and/or English creditable for bonus Allocation of places Additional information Korkload Log I (2) Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Pusyics International (2020) Master's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Pusyics International (2020) Master's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Pusyics International (2020) Master's degree (1 major) Computer Science (2020) Bachelor's degree (1 majo	Intend	ed learı	ning outcomes				
Courses (type, number of weekly contact hours, language — if other than German) V (2) + 0 (2) Module taught in: English Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, 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. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus Allocation of places Additional information Workload 150 h Teaching cycle Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics Information Systems (2020) Master's degree (1 major) Quantum Engineering (2020) Master's degree (1 major) Computer Science (2020) Bachelor's degree (The stu	udents j	oossess knowledge an	d practical skills in bui	lding and using esse	ntial parts of operati	ing systems.
V(2) + Ü (2) Module taught in: English Method of assessment (type, scope, language – if other than German, examination offered – if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, 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. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus Allocation of places Additional information Workload 150 h Teaching cycle Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics Information Systems (2020) Master's degree (1 major) Physics Information Systems (2020) Bachelor's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Computer Science (2020)	Course	es (type	, number of weekly cor	ntact hours, language –	- if other than Germa	in)	
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, 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. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus Aldication of places Additional information Morkladd 150 h Teaching cycle Referred to in LPO1 (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Physics (2020) Baschelor's degree (1 major) Physics (2020) Baschelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Aerospace Computer Science (20	V (2) + Module	Ü (2) e taugh	t in: English				
written examination (approx. 6o to 120 minutes). If announced by the lecturer at the beginning of the course, 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 (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus Allocation of places 	Metho ster, in	d of ass Iformati	s essment (type, scope, on on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
Allocation of places Additional information Workload Workload Workload Workload Referred to in LPO 1 (examination regulations for teaching-degree programmes) Referred to in LPO 1 (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics International (2020) Master's degree (1 major) Physics International (2020) Bachelor's degree (1 major) Omputer Science (2020) Bachelor's degree (1 major) Physics International (2020) Master's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Omputer Science (2020) Bachelor's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)	lf anno examir prox. 1 Langua credita	ounced nation o 5 minut age of a able for	by the lecturer at the b of one candidate each (es per candidate). ssessment: German ar bonus	eginning of the course, (approx. 20 minutes) or nd/or English	the written examina an oral examination	tion may be replaced in groups of 2 cand	d by an oral idates (ap-
Additional information Additional information Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics Information Systems (2020) Master's degree (1 major) Physics International (2020) Master's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Attificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Attificial Intelligence and Data Science (2022)	Allocat	tion of p	olaces				
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Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics (2020) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Ouantum Engineering (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)							
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Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Business Information Systems (2020) Master's degree (1 major) Physics (2020) Master's degree (1 major) Physics International (2020) Master's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Master's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)							
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Module appears inBachelor's degree (1 major) Computer Science (2019)Master's degree (1 major) Nanostructure Technology (2020)Master's degree (1 major) Physics (2020)Bachelor's degree (1 major) Business Information Systems (2020)Master's degree (1 major) Physics International (2020)Master's degree (1 major) Quantum Engineering (2020)Bachelor's degree (1 major) Aerospace Computer Science (2020)Bachelor's degree (1 major) Computer Science und Sustainability (2021)Master's degree (1 major) Quantum Technology (2021)Bachelor's degree (1 major) Business Information Systems (2021)Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)Bachelor's with 1 major Computer Science (2019)JMU Würzburg • generated 19-Apr-2025 • exam. reg.page 42 / 125							
Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Business Information Systems (2020) Master's degree (1 major) Physics International (2020) Master's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Master's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's with 1 major Computer Science (2019) MU Würzburg • generated 19-Apr-2025 • exam. reg. page 42 / 125	Modul	e appea	nrs in				
Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 42 / 125	Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Nanostructure Technology (2020) Master's degree (1 major) Physics (2020) Bachelor's degree (1 major) Business Information Systems (2020) Master's degree (1 major) Physics International (2020) Master's degree (1 major) Quantum Engineering (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Master's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)						
	Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg	g • generated 19-Apr-2025 • e	xam. reg.	page 42 / 125

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Master's degree (1 major) Quantum Engineering (2024) Master's degree (1 major) Physics International (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Module	e title		Abbreviation		
Databa	ISES			10-I-DB-152-m01	
Module	e coordinator		Module offered by		
Dean o	f Studies Informatik (Compute	er Science)	Institute of Comput	er Science	
ECTS	Method of grading	Only after succ. cor	npl. of module(s)		
5	numerical grade				
Duratio	on Module level	Other prerequisites			
1 seme	ster undergraduate				
Conter	its				
Relatio ment.	nal algebra and complex SQL	statements; database	planning and norma	l forms; transaction	manage-
Intend	ed learning outcomes				
The sti	idents possess knowledge ab	 out database modellin	g and queries in SOL	as well as transactio	ons
Course	s (type, number of weekly con	tact hours language	if other than Corma	n)	5115.
Course			- II Other than Germa	11)	
V (2) +	U (2)				
Metho ster, in	d of assessment (type, scope, formation on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, 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 (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
Allocat	tion of places				
Additio	onal information				
Worklo					
150 h					
150 H					
Teachi	ng cycle				
Referre	ed to in LPO I (examination reg	gulations for teaching-	degree programmes)		
§4911 §6911	Vr. 1 b) Vr. 1 b)				
Module	e appears in				
Bachel	or's degree (1 major) Compute	r Science (2015)			
Bachel	or's degree (1 major) Mathema	atics (2015)			
Bachel	or's degree (1 major) Business	Information Systems	(2015)		
Bachel	or's degree (1 major) Computa	tional Mathematics (2	015)		
Bachel	or's degree (1 major) Aerospa	e Computer Science (2	2015)		
Bachelor's degree (1 major) Functional Materials (2015)					
First state examination for the teaching degree Realschule Computer Science (2015)					
First state examination for the teaching degree Gymnasium Computer Science (2015)					
Master	's degree (1 major) Physics (20	016)			
Bachel	Bachelor's degree (1 major) Business Information Systems (2016)				
Bachel	Bachelor's degree (1 major) Aerospace Computer Science (2017)				
Bachel	or's degree (1 major) Compute	r Science (2017)			
Bachelor's	with 1 major Computer Science (2019)	JMU Würzbur data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 44 / 125

Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title				Abbreviation		
Data N	lining				10-I-DM-152-m01	
Modul	e coord	inator		Module offered by	<u> </u>	
holder	of the (Chair of Computer Scie	nce VI	Institute of Computer Science		
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				
Conter	its					
model, relationship to data warehouse and OLAP, data preprocessing, data visualisation, unsupervised learning						
metho	ds (clus	ter and association me	ethods), supervised lea	rning (e. g. Bayes cla ng paradigme	assification, KNN, de	cision trees,
Intend		g methous for special of	iata types, other tearning	ng paradigins.		
	Idente I	noscess a theoretical a	ind practical knowledge	of typical methods	and algorithms in th	e area of da
ta mini	ing and	machine learning. The	y are able to solve prac	tical knowledge disc	covery problems with	the help of
the kn	owledge	e acquired in this cours	se and by using the KDI	D process. They have	acquired experienc	e in the use
or imp	lementa	ation of data mining alg	gorithms.		`	
Course	es (type	, number of weekly cor	ntact hours, language –	- if other than Germa	in)	
V (2) +	U (2)	- /				
Metho ster, in	d of ass Iformati	s essment (type, scope, on on whether module	, language — if other th e can be chosen to earn	an German, examina a bonus)	ition offered — if not	every seme-
writter	ı examiı	nation (approx. 60 to 1	20 minutes).			
If anno	ounced	by the lecturer at the b	eginning of the course,	the written examina	tion may be replace	d by an oral
examin	nation c	of one candidate each (res per candidate)	approx. 20 minutes) or	an oral examination	i in groups of 2 cand	idates (ap-
Langua	age of a	ssessment: German ar	nd/or English			
credita	ble for	bonus				
Alloca	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	oad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)		
§ 22	Nr. 3 b)					
Modul	e appea	irs in				
Bache	lor's de	gree (1 major) Compute	er Science (2015)			
Bachelor's degree (1 major) Mathematics (2015)						
Bachel	lor's de	gree (1 major) Busines	ational Mathematics (2)	(2015) 015)		
Bache	lor's de	gree (1 major) Aerospa	ce Computer Science (2	2015)		
First st	ate exa	mination for the teach	ing degree Gymnasium	Computer Science (2	2015)	
Bache	lor's de	gree (1 major) Busines	s Information Systems	(2016)		
Master	r's teacl	ning degree Gymnasiu	n MINT Teacher Educat	ion PLUS, Elite Netwo	ork Bavaria (ENB) (20	016)
Bachelor's	with 1 ma	or Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 46 / 125

Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Master's degree (1 major) Information Systems (2022) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title				Abbreviation			
Fundar	nentals	of Programming		_	10-I-GdP-172-m01		
Modul	o coord	inator		Modulo offered by			
Modul			U	Module offered by	Module offered by		
holder	of the (hair of Computer Scier		Institute of Comput	er Science		
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	ester	undergraduate					
Conter	its						
Data ty ject ori	Data types, control structures, foundations of procedural programming, selected topics of C, introduction to object orientation in Java, selected topics of C++, further Java concepts, digression: scripting languages.						
Intend	ed learı	ning outcomes					
The stu	idents i	possess a fundamental	knowledge about pros	gramming languages	(in particular lava, (and C++)	
and ar	e able t	o independently develo	op average to high leve	l Java programs.	(p	,	
Course	s (type)	, number of weekly con	tact hours, language –	- if other than Germa	in)		
V (2) +	Ü (2)						
Metho	d of ass	essment (type, scope,	language — if other th	an German, examina	tion offered — if not	every seme-	
ster, in	formati	on on whether module	can be chosen to earn	a bonus)		-	
written	exami	nation (approx. 60 to 12	20 minutes).				
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral							
examir	examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (ap-						
prox. 1 credita	5 minut ble for	es per candidate).					
Allocat	tion of r						
Allocal		Jaces					
Additic	nal inf	ormation					
Auun							
Workle							
workit	Jau						
150 n		-					
Teachi	ng cycl	8					
Referre	ed to in	LPOI (examination reg	gulations for teaching-	degree programmes)			
§ 49 1	Vr. 1b						
Modul		ore in					
Bachel	or's de	aree (1 major) Physics (2015)				
Bachel	or's de	gree (1 major) Aerospa	e Computer Science (2	2017)			
Bachel	or's de	gree (1 major) Aerospue gree (1 major) Compute	r Science (2017)	,)			
Bachel	or's de	gree (1 major) Compute	r Science (2019)				
Bachel	or's de	gree (1 major) Business	Information Systems	(2020)			
Bachelor's degree (1 major) Physics (2020)							
Bachelor's degree (1 major) Aerospace Computer Science (2020)							
Bachel	or's de	gree (1 major) Compute	r Science und Sustaina	ability (2021)			
Bachel	or's de	gree (1 major) Business	Information Systems	(2021)			
Bachel	Bachelor's degree (1 major) Mathematical Data Science (2022)						
Bachel	Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)						
Bachel	Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)						
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburş data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 48 / 125	

Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Economathematics (2025)

Module	title				Abbreviation
Selecte	d Basi	cs of Computer Science			10-l-Gl-152-m01
Module	coord	inator		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)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Selecte	d topic	s in computer science.			
Intende	ed leari	ning outcomes			
The stu them to	dents a relate	are able to understand so d topics.	olutions to fundamen	tal problems in com	puter science and to transfer
Course	s (type	, number of weekly conta	ct hours, language –	· if other than Germa	n)
V (4) +	Ü (2)				
Methoo ster, inf	l of ass formati	e ssment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
lf annoi examin prox. 15 Langua credital	ation of ation of minut ge of a ble for	by the lecturer at the beg fone candidate each (ap es per candidate). ssessment: German and, bonus	inning of the course, oprox. 20 minutes) or /or English	the written examina an oral examination	tion may be replaced by an oral in groups of 2 candidates (ap-
Allocat	ion of p	olaces			
Additio	nal inf	ormation	·		
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regu	lations for teaching-o	legree programmes)	
Module	appea	irs in			
Bachelo	or's de	gree (1 major) Computer S	Science (2015)		
Bachelo	or's deg	gree (1 major) Computer S	Science (2017)		
Bachelo	or's de	gree (1 major) Computer S	Science (2019)		
Module	e studie	es (Bachelor) Computer S	cience (2019)		
Bachelo	or's deg	gree (1 major) Computer S	Science und Sustaina	ability (2021)	
Bachelo	or's de	gree (1 major) Artificial In	telligence and Data S	Science (2022)	
Bachelo	or's de	gree (1 major) Artificial In	telligence and Data S	Science (2023)	
Bachelo	or's de	gree (1 major) Mathemati	cs (2023)		
Bachelo	or's deg	gree (1 major) Artificial In	telligence and Data S	Science (2024)	

Module title				Abbreviation		
Practic	al cour	se in hardware			10-I-HWP-152-m01	
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Informatik (Computer	r Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts	5				
Practica a comp	al expe olete mi	riments on hardware as croprocessor.	pects, for example in o	communication tech	nology, robots or the	e structure of
Intende	ed lear	ning outcomes				
The students are able to independently review, prepare and perform experiments with the help of experiment de- scriptions, to independently search for additional information as well as to document and evaluate experiment results.						
Course	s (type	, number of weekly cont	act hours, language –	- if other than Germa	n)	
P (6)						
Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus)						
portfolio: completion of approx. 3 to 10 project assignments (approx. 250 hours total) and presentation of results (approx. 10 minutes per project)						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Additio	mat min					
 Worklo	ad		_			
300 h						
Teachir	ng cycl	۵	_			
reaciiii	is cycl	6				
Referre	d to in	LPO I (examination reg	ulations for teaching-o	degree programmes)		
§ 22	Nr. 3 h)			<u> </u>		
Module	e appea	irs in				
Bachel	or's de	gree (1 major) Computer	Science (2015)			
Bachel	or's de	gree (1 major) Mathema	tics (2015)			
Bachel	or's de	gree (1 major) Computat	ional Mathematics (20	015)		
Bachel	or's de	gree (1 major) Aerospac	e Computer Science (2	2015)		
First sta	ate exa	mination for the teachir	ig degree Gymnasium	Computer Science (2	2015)	
Master	's teacl	ning degree Gymnasium	MINT Teacher Educat	ion PLUS, Elite Netwo	ork Bavaria (ENB) (2	016)
Supple	mentai	y course MINT Teacher	Education PLUS, Elite	Network Bavaria (EN	B) (2016)	
Bachelor's degree (1 major) Aerospace Computer Science (2017)						
Bachelor's degree (1 major) Computer Science (2017)						
Bachel	or's de	gree (1 major) Computer	Science (2019)			
Module	e studie	es (Bachelor) Computer	Science (2019)			
Master	's teacl	ning degree Gymnasium	MINT Teacher Educat	ion PLUS, Elite Netwo	ork Bavaria (ENB) (2	020)
Supple	Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)					
Bachel	or's de	gree (1 major) Aerospac	e Computer Science (2	2020)		
Bachel	Bachelor's degree (1 major) Computer Science und Sustainability (2021)					
Bachelor's	with 1 ma	or Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 51 / 125

Bachelor's degree (1 major) Mathematics (2023)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Modul	e title				Abbreviation	
Crypto	Cryptography and Data Security 10-I-KD-191-m01					
Modul	e coordin	ator		Module offered by	<u> </u>	
Dean o	of Studies	Informatik (Compute	er Science)	Institute of Comput	er Science	
ECTS	Method	l of grading	Only after succ. con	npl. of module(s)		
5	numerio	cal grade				
Duratio	on /	Module level	Other prerequisites			
1 seme	ester L	undergraduate				
Conter	nts					
Private RSA, D million	e key cryp iffie-Hellı aire prob	tography systems, Ve man, Elgamal, Goldw olem, secure circuit ev	ernam one-time pad, Al asser-Micali, digital sig valuation, homomorph	ES, perfect security, p nature, challenge-re ous encryption.	oublic key cryptogra sponse methods, se	phy systems, cret sharing,
Intend	ed learni	ng outcomes				
The students possess a fundamental and applicable knowledge in the areas of private key cryptography sy- stems, Vernam one-time pad, AES, perfect security, public key cryptography, RSA, Diffie-Hellman, Elgamal, Gold- wasser-Micali, digital signature, challenge-response method, secret sharing, millionaire problem, secure circuit evaluation, homomorphous encryption						
Course	es (type, r	number of weekly cor	ntact hours, language –	- if other than Germa	ın)	
V (2) +	Ü (2)					
Metho ster, in	d of asse Iformatio	ssment (type, scope, n on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
examir prox. 1 Langua Assess credita	nation of 5 minute age of ass sment off able for be tion of pla	one candidate each (s per candidate). sessment: German ar ered: In the semester onus aces	approx. 20 minutes) or ad/or English in which the course is	offered and in the su	ubsequent semester	idates (ap-
Additio	onal infor	rmation				
	1					
Worklo	bad					
150 h						
Teachi	ng cycle					
Referre	ed to in L	POI (examination re	gulations for teaching-	degree programmes)		
§ 22	Nr. 3 b)					
Modul	e appear	s in				
Bachelor's degree (1 major) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)						
Bachelor's	s with 1 major	Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	exam. reg. ik - 2019	page 53 / 125

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title				Abbreviation		
Compu	Itationa	l Complexity			10-I-KT-191-m01	
Modul	e coord	inator		Module offered by	<u> </u>	
Dean c	of Studio	es Informatik (Compute	er Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
5	nume	rical grade				
Durati	on	Module level	Other prerequisites	i		
1 seme	ester	undergraduate				
Conter	nts					
Compl sumpt	exity mo ion vers	easurements and class sus computation time,	ses, general relationshi determinism versus inc problems, Turing reduc	ps between space an leterminism, hierarc	nd time classes, mer hical theorems, trans of systems	nory con- slation me-
Intend	ed lear	ning outcomes	problems, runng reduc		or systems.	
The st	idente i	nossoss a fundamenta	and applicable knowl	edge in the areas of	complexity moscure	ments and
classe	s, gene	al relationships betwe	en space and time class	sses, memory consur	nption versus comp	utation time.
determ	ninism v	ersus indeterminism,	hierarchical theorems,	translation methods	, P-NP problem, com	pleteness
proble	ms, Tur	ing reduction, interact	ve proof systems.			
Course	es (type	, number of weekly cor	ntact hours, language –	- if other than Germa	ın)	
V (2) +	U (2)					
Metho ster, in	d of ass Iformati	s essment (type, scope, on on whether module	, language — if other th e can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
writter	ı examiı	nation (approx. 60 to 1	20 minutes).	-		
lf anno	ounced	by the lecturer at the b	eginning of the course,	the written examina	tion may be replace	d by an oral
exami	nation c	f one candidate each	(approx. 20 minutes) or	an oral examination	i in groups of 2 cand	idates (ap-
prox. 1	5 minui age of a	es per candidate). ssessment: German ai	nd/or English			
Assess	sment o	ffered: In the semester	r in which the course is	offered and in the su	ubsequent semester	
credita	ble for	bonus				
Alloca	tion of p	olaces				
Additio	onal inf	ormation				
	_					
Worklo	oad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)		
§ 22	Nr. 3 b)					
Modul	e appea	irs in				
Bache	lor's de	gree (1 major) Compute	er Science (2019)			
Master	r's teacl	ning degree Gymnasiu	m MINT Teacher Educat	ion PLUS, Elite Netwo	ork Bavaria (ENB) (2	020)
Supple	ementai	y course MINT Teacher	Education PLUS, Elite	Network Bavaria (EN	B) (2020)	
Bachel	lor's de	gree (1 major) Compute	Intelligence and Data 9	Science (2021)		
Bachel	lor's de	gree (1 major) Artificial	Intelligence and Data 9	Science (2023)		
Bache	lor's de	gree (1 major) Mathem	atics (2023)			
Bache	lor's de	gree (1 major) Artificial	Intelligence and Data S	Science (2024)		
Bachelore	with 1 ma	or Computer Science (2010)	[M11 \\//ijezh	• generated to Apr 2025 • 2	wam reg	nage 55 / 125
Dachelors	, with 1 lind	or computer science (2019)	data record	Bachelor (180 ECTS) Informat	ik - 2019	page 55 / 125

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title					Abbreviation	
Logic f	or infor	matics			10-l-LOG-152-m01	
Modul	e coord	inator		Module offered by		
Dean	f Studia	es Informatik (Compute	r Science)	Institute of Computer Science		
FCTS	Metho	od of grading		nl of module(s)		
5	nume	rical grade				
Duratio	n l	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conter	its	-	_ I			
Syntax nite for	and se rmula s	mantics of propositionates, syntax and semant	al logic, equivalence a ics of predicate logic.	nd normal forms, Ho	rn formulas, SAT, res	solution, infi-
Intend	Intended learning outcomes					
The stu norma	idents a	are proficient in the foll Horn formulas, SAT, re	owing areas: syntax ar solution, infinite form	nd semantics of prop ula sets, syntax and s	ositional logic, equiver	valence and ate logic.
Course	s (type	number of weekly con	tact hours, language –	- if other than Germa	n)	
V (2) +	Ü (2)	, , , , ,			,	
Metho	d of ass	essment (type, scope,	language — if other th	an German, examina	tion offered — if not	every seme-
ster, in	formati	on on whether module	can be chosen to earn	a bonus)		
written	examin	nation (approx. 60 to 12	o minutes).	the written examine	tion may be replace	d by an oral
n anno examir	If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral					
prox. 1	5 minut	es per candidate).				idutes (up
Langua	age of a	ssessment: German an	d/or English			
credita	ble for	bonus				
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination reg	ulations for teaching-	degree programmes)		
§ 22	Nr. 3 b)					
Modul	e appea	irs in				
Bachel	or's deg	gree (1 major) Compute	r Science (2015)			
Bachel	or's deg	gree (1 major) Mathema	itics (2015)			
Bachel	or's de	gree (1 major) Computa	tional Mathematics (2	015)	、 、	
First st	ate exa	mination for the teaching	ng degree Gymnasium	Computer Science (2	2015) arly Daviania (END) (a	
Master	's teacr	ning degree Gymnasium	Education PLUS Elito	Ion PLUS, Elite Netwo	DIK BAVAHA (ENB) (2) P) (2016)	016)
Bachel	or's deg	gree (1 major) Compute	r Science (2017)	CENTRO DAVAILA (EIN	(2010)	
Bachelor's degree (1 major) Computer Science (2017)						
Master	's teach	ning degree Gymnasium	n MINT Teacher Educat	ion PLUS, Elite Netwo	ork Bavaria (ENB) (2	020)
Supple	ementar	y course MINT Teacher	Education PLUS, Elite	Network Bavaria (EN	B) (2020)	
Bachel	or's deg	gree (1 major) Aerospac	e Computer Science (2	2020)		
Bachel	or's deg	gree (1 major) Compute	r Science und Sustaina	ability (2021)		
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 57 / 125

Bachelor's degree (1 major) Mathematics (2023)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title					Abbreviation		
Introduction into Human-Computer Interaction 10-I-MCS-191-m01							
Module coordinator				Module offered by			
holder	of the (Chair of Computer Scien	nce IX	Institute of Comput	er Science		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
5	nume	rical grade					
Durati	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Humar stems. technid design humar evalua means Accom evalua Intend	Contents Human-Computer Interaction studies the design, evaluation, and implementation of interactive computer sy- stems. Special focus lies on fundamental psychological and physiological properties of the human users, the technical principals and models of modern computer systems, as well as on the derived boundary conditions of designing usable and human-oriented interactions with technical systems. The topics of this course cover the human perception and cognition, the human memory and attention, the design of interactive systems, popuplar evaluation methods, principles of computer systems, input processing techniques, human interfaces and typical means of interaction, from text-based input methods over graphical user interfaces to multi-modal interfaces. Accompanying practical tasks convey to the students typical methods of requirement analysis, prototyping and evaluation.						
After s face de tions o les.	uccessf esign pr If mode	ully completing this co inciples. They understa rn user interfaces. They	urse, students have a f and the possibilities an v know the necessary si	undamental underst d limitations of tech teps of user-centric o	anding of human-co nology and user and lesign and typical de	mputer inter- I the applica- esign princip-	
Course	es (type	, number of weekly con	tact hours, language –	- if other than Germa	n)		
V (3) +	Ü (1)						
Metho ster, in	d of ass Iformati	essment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
written If anno examin prox. 1 Langua credita	examin ounced nation o 5 minut age of a oble for	nation (approx. 120 min by the lecturer at the bo of one candidate each (ces per candidate). ssessment: German an bonus	nutes) eginning of the course, approx. 20 minutes) or d/or English	the written examina an oral examination	tion may be replace in groups of 2 cand	d by an oral idates (ap-	
Alloca	tion of p	olaces					
Additio	onal inf	ormation					
Worklo	oad						
150 h							
Teaching cycle							
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Modul	e appea	ars in					
Bachel Bachel Bachel Bachel	Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021)						
			data record I	Bachelor (180 ECTS) Informati	k - 2019	1	

Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023)

Module	title				Abbreviation
Practica	al Cour	se in Programming			10-I-PP-191-m01
Module	coord	inator		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	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
		undergraduate	Intended learning ou GdP. It is therefore s	utcomes of the follow trongly recommende	ving module are required: 10-l- ed to complete this before.
Conten	ts				
The pro	gramm	ing language Java. Indep	endent creation of sr	nall to middle-sized,	, high-quality Java programs.
Intende	ed learr	ning outcomes			
The stu	dents a	are able to independently	develop small to mi	ddle-sized, high-qua	ality Java programs.
Course	s (type	number of weekly conta	ct hours, language —	if other than Germa	n)
P (6)	- (-)	, , , , , , , , , , , , , , , , , , , ,			,
Methoo ster, inf	l of ass formati	essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
practica minutes If annot examin prox. 15	al exam s) unced l ation o 5 minut	by the lecturer at the beg f one candidate each (ap es per candidate).	inning of the course, pprox. 20 minutes) or	the written examina an oral examination	tion may be replaced by an oral in groups of 2 candidates (ap-
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
300 h					
Teachir	ng cycl	9			
Referre	d to in	LPO I (examination regu	lations for teaching-c	legree programmes)	
§ 49 Nr. 1 c) § 69 Nr. 1 d)					
Module appears in					
Bachelo Module Module Bachelo Bachelo Bachelo	Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Module studies (Bachelor) Orientierungsstudien (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Mathematics (2023)				

			Abbreviation
ntation			10-I-PV-152-m01
inator		Module offered by	
es Informatik (Computer S	Science)	Institute of Compute	er Science
od of grading	Only after succ. com	pl. of module(s)	
rical grade			
Module level	Other prerequisites		
undergraduate			
of a project developed by aypersons with a knowle ess, is presented with the	the student (e.g. Ba dge of computer scie help of a poster, a s	chelor's thesis, softv nce at a trade fair. Th hort talk and optiona	vare project) analogous to a pre- ne project, which may also be ally a live demonstration.
ning outcomes			
are able to present a proj	ect they developed a	nd to create the requ	iired media.
, number of weekly conta	ct hours, language —	if other than Germa	n)
sessment (type, scope, la ion on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
of a project developed by er science at a trade fair a ssessment: German and,	the candidate analog s well as discussion /or English	gous to a presentatic (approx. 10 to 15 min	on for laypersons with a knowled- nutes total)
olaces			
ormation			
е			
LPOI (examination regu	lations for teaching-c	legree programmes)	
ars in			
mination for the teaching hing degree Gymnasium / ry course MINT Teacher Ed gree (1 major) Computer 9 gree (1 major) Computer 9 hing degree Gymnasium / ry course MINT Teacher Ed gree (1 major) Artificial In gree (1 major) Artificial In gree (1 major) Artificial In hing degree Gymnasium /	g degree Gymnasium MINT Teacher Educati ducation PLUS, Elite N Science (2017) Science (2019) MINT Teacher Educati ducation PLUS, Elite N telligence and Data S telligence and Data S telligence and Data S	Computer Science (2 on PLUS, Elite Network Network Bavaria (ENI Network Bavaria (ENI Network Bavaria (ENI cience (2023) cience (2024) on PLUS, Elite Network	2015) ork Bavaria (ENB) (2016) B) (2016) ork Bavaria (ENB) (2020) B) (2020) ork Bavaria (ENB) (2025)
	ntation inator es Informatik (Computer S od of grading rical grade Module level undergraduate of a project developed by aypersons with a knowle ess, is presented with the ning outcomes are able to present a proj , number of weekly conta sessment (type, scope, la ion on whether module ca of a project developed by er science at a trade fair a assessment: German and/ places ormation e LPO I (examination regu ars in gree (1 major) Computer S mination for the teaching hing degree Gymnasium I ry course MINT Teacher Ed gree (1 major) Artificial In gree (1 major) Artificial In g	ination inator es Informatik (Computer Science) od of grading Only after succ. com rical grade Module level Other prerequisites undergraduate of a project developed by the student (e. g. Backar) aypersons with a knowledge of computer scie ess, is presented with the help of a poster, a sing outcomes are able to present a project they developed and , number of weekly contact hours, language — of a project developed by the candidate analoge er science at a trade fair as well as discussion (assessment: German and/or English places ormation gree (1 major) Computer Science (2015) mination for the teaching degree Gymnasium hing degree Gymnasium MINT Teacher Education PLUS, Elite N gree (1 major) Computer Science (2017) gree (1 major) Computer Science (2017) gree (1 major) Computer Science (2017) gree (1 major) Artificial Intelligence and Data S gree (1 major) Artificial Intelligence and Data S	ntation inator Module offered by es Informatik (Computer Science) Institute of Comput od of grading Only after succ. compl. of module(s) rical grade Module level Other prerequisites undergraduate of a project developed by the student (e. g. Bachelor's thesis, softw aypersons with a knowledge of computer science at a trade fair. Th ess, is presented with the help of a poster, a short talk and options ning outcomes are able to present a project they developed and to create the requ, , number of weekly contact hours, language — if other than German, examina ion on whether module can be chosen to earn a bonus) of a project developed by the candidate analogous to a presentatic rescience at a trade fair as well as discussion (approx. 10 to 15 mir ssessment: German and/or English places PloD 1 (examination regulations for teaching-degree programmes) ars in gree (1 major) Computer Science (2015) mination for the teaching degree Gymnasium Computer Science (2017) gree (1 major) Artificial Intelligence and Data Science (2022) gree (1 major) Artificial Intelligence and Data Science (2022) gree (1 major) Artificial Intelligence and Data Science (2022) gree (1 major) Artificial Intelligence and Data Science (2022) gree (1 major) Artificial Intelligence and Data Science (2024) hing degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENI gree (1 major) Artificial Intelligence and Data Science (2024) hing degree Gymnasium MINT Teacher Education PLUS, Elite Network Bava

Modul	e title				Abbreviation	
Compu	Computer Architecture 10-I-RAK-152-m01					
Modul	e coord	inator		Module offered by		
Dean o	of Studie	es Informatik (Compute	er Science)	Institute of Comput	er Science	
ECTS	Metho	d of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ester	undergraduate				
Instruction	Instruction set architectures, command processing through pipelining, statical and dynamic instruction schedu-					
Intend	ed learr	ning outcomes	I			
The stu compil	udents r ers and	naster the most impor operating systems.	tant techniques to desi	gn fast computers as	s well as their intera	ction with
Course	es (type,	number of weekly cor	itact hours, language –	- if other than Germa	n)	
V (2) +	Ü (2)					
Metho ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
written If anno examir prox. 1 Langua credita	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, 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 (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English					
Allocat	tion of p	olaces				
Additio	onal info	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	9				
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)		
§ 22	Nr. 3 b)					
<u>§</u> 69 1 1	vr. 1 c):	Rechnerarchitektur				
Modul	e appea	rs in				
Bachel Bachel	or's deg or's deg	gree (1 major) Compute gree (1 major) Mathem	er Science (2015) atics (2015)			
Bachel	or's deg	gree (1 major) Computa	ational Mathematics (2	015)		
Bachelor's degree (1 major) Aerospace Computer Science (2015)						
First state examination for the teaching degree Gymnasium Computer Science (2015)						
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)						
Bachelor's degree (1 major) Aerospace Computer Science (2017)						
Bachel	Bachelor's degree (1 major) Computer Science (2017)					
Bachelor's degree (1 major) Computer Science (2019)						
Master	's degre	ee (1 major) Physics (2	020)			
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 63 / 125

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Master's degree (1 major) Physics International (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Master's degree (1 major) Physics International (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title					Abbreviation		
Digital computer systems 10-I-RAL-152-m01							
Modul	e coord	inator		Module offered by	<u> </u>		
Dean c	of Studi	es Informatik (Compute	r Science)	Institute of Comput	er Science		
FCTS	Moth	ad of grading		nl of module(s)			
10	nume	rical grade					
Durati	name		Other prerequisites				
1 seme	ester	undergraduate					
Conter	nts						
Introdu cuits, f chy.	Introduction to digital technologies, Boolean algebras, combinatory circuits, synchronous and asynchronous cir- cuits, hardware description languages, structure of a simple processor, machine programming, memory hierar- chy.						
Intend	ed lear	ning outcomes					
The stu ming o design	udents of easy r of digit	oossess a knowledge o nicroprocessors as wel al systems.	f the fundamentals of l as knowledge for the	digital technologies application of hardw	up to the design and /are description lang	l program- guages for the	
Course	es (type	, number of weekly con	tact hours, language –	- if other than Germa	ın)		
V (4) +	Ü (2)						
Metho ster, in	d of ass Iformati	essment (type, scope, on on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
examir prox. 1 credita Allocat	nation o 5 minut Ible for t ion of ;	of one candidate each (tes per candidate). bonus blaces	approx. 20 minutes) or	an oral examination	i in groups of 2 cand	idates (ap-	
Additio	onal inf	ormation					
	1						
Worklo	bad						
300 h							
Teachi	ng cycl	e					
Referre	ed to in	LPOI (examination reg	gulations for teaching-	degree programmes)			
Modul	e appea	irs in					
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Orientierungsstudien (2020) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020)							
Bachelor's	with 1 ma	or Computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	exam. reg. ik - 2019	page 65 / 125	

Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title					Abbreviation		
Computer Networks and Information Transmission 10-I-RIÜ-191-mo1							
Module	e coord	inator		Module offered by			
holder	of the (Chair of Computer Science	e III	Institute of Comput	er Science		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
10	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
• • • • • • • • • • • • • • • • • • •	 Computer networks and the Internet: Structure and Mechanisms of Telecommunication Communication Protocols: Basic Principles and the Layer Model Computer and Communication Systems: Network Systems, Data Traffic in Distributed Systems and inter-network Communication The Internet: Important Protocols and Routing Architecture and Structure of Computer Networks: Network Architecture, Access Mechanisms, Flow Control and Traffic Management Coding Theory: Mechanisms for Error Detection and Error Correction Information Theory: Entropy of Data 						
Intende	ed learı	ning outcomes					
Studen puter n	ts com etwork	mand the technical, theo s, the Internet and comn	pretical as well as pra nunication systems fo	ctical knowledge to u or telecommunicatior	understand the struc า.	ture of com-	
Course	s (type	, number of weekly conta	act hours, language –	- if other than Germa	n)		
V (4) +	Ü (2)						
Methor ster, in	l of ass formati	e ssment (type, scope, la on on whether module c	anguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
written If anno examin prox. 19 credita	examin unced ation o 5 minut ble for	nation (approx. 60 to 120 by the lecturer at the beg f one candidate each (a es per candidate). bonus	o minutes). ginning of the course, oprox. 20 minutes) or	the written examina an oral examination	tion may be replaced in groups of 2 candi	l by an oral dates (ap-	
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
300 h							
Teachi		٥	_				
	ig cycl	5					
Referre	d to in	LPO I (examination regu	llations for teaching-o	degree programmes)			
§ 22 Nr. 3 b), § 69 Nr. 1 c)							
Module appears in							
Bachel	or's de	gree (1 major) Computer	Science (2019)				
Master	's teach	ning degree Gymnasium	MINT Teacher Educat	ion PLUS, Elite Netwo	ork Bavaria (ENB) (20	020)	
Supple	mentar	y course MINT Teacher E	ducation PLUS, Elite I	Network Bavaria (EN	B) (2020)		
Bachelor's degree (1 major) Aerospace Computer Science (2020)							
Bachel	or's de	gree (1 major) Computer	Science und Sustaina	ability (2021)			
Bachel	or's de	gree (1 major) Artificial Ir	itelligence and Data S	Science (2022)			
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record F	; • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 67 / 125	



Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Computer Science (2019)

Module	e title				Abbreviation		
IT Secu	IT Security 10-I-SEC-191-m01						
Module	e coord	inator		Module offered by			
holder	of the (Chair of Computer Science	ce II	Institute of Comput	er Science		
ECTS	Metho	od of grading	Only after succ. con	Only after succ. compl. of module(s)			
5	nume	rical grade					
Duratio	on .	Module level	Other prerequisites				
1 seme	ster	undergraduate	-				
Conten	ts		_				
Ihe col T (I M S T P C	 The course provides a broad sweep through concepts and technologies related to IT security: Theoretical aspects: information-theoretic security, computational security, introduction to cryptography (historical and modern ciphers, hash functions, pseudo-random generators, message authentication codes, public key cryptography) Network security: protocol security, security of TCP/IP, public key infrastructure, user authentication Software security: Software vulnerabilities, common programming errors and exploitation techniques, reverse engineering and obfuscation, malware and anti-malware Platform security: access control models, security policies, operating system security, virtualization, se- 						
Intende	ed learn	ning outcomes					
Studen and an going to exercis	ts will I alyze so o under es prov	be introduced to the mai ecurity of a system critic rstand the purpose and ride some hands-on exp	n concepts and abstr ally from the attacker function of several se erience of security flo	actions of IT security view point. After visi curity technologies, a ws in software.	. They learn how to r ting the lecture stud as well as their limita	nodel threats ents are ations. The	
Course	s (type.	number of weekly conta	act hours, language –	- if other than Germa	n)		
V(2) +	<u>ü (2)</u>				,		
Module	e taugh	t in: German and/or Eng	lish				
Methor ster, in	d of ass formati	e ssment (type, scope, la on on whether module c	anguage — if other th an be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
written If anno examin prox. 19 Langua credita	examir unced l ation o 5 minut ge of a ble for	nation (approx. 60 to 120 by the lecturer at the beg f one candidate each (a es per candidate). ssessment: German and bonus	o minutes). ginning of the course, pprox. 20 minutes) or //or English	the written examina an oral examination	tion may be replaced in groups of 2 cand	d by an oral idates (ap-	
Allocat	ion of r	places					
	<u></u>						
Additio	nal info	ormation					
Worklo	ad						
150 h							
Teaching cycle							
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module	appea	irs in					
Bachel	or's de	gree (1 maior) Computer	Science (2010)				
Module studies (Bachelor) Computer Science (2019)							
Bachel	or's deg	gree (1 major) Computer	Science und Sustaina	ability (2021)			
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 69 / 125	

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Games Engineering (2025)

Seminar - Selected Topics in Computer Science 1 10-1-SEM1+152-m01 Module offered by Institute of Computer Science Institute of Computer Science TECT Methode of grading Only Affer succ. compl. of module(s) 5 numerical grade - 5 modergraduate - Contents Independent review of a current topic in computer science on the basis of literature and, where applicable, software with withen and oral presentation. The topics in modules 10-1-SEM and 10-1-SEM2 must come from different lecturers). Independent review of a current topic in computer science net basis of literature and, where applicable, software with withen and oral present these in an appropriate way. Courses (type, number of weekly contact hours, language – if other than German. S S (J Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module can be chosen to eam a bons) Witten elaboration (approx. a to 15 pages) and present thon (approx. 3 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: Germa and/or English Induge deret in Information actic information on whether megulations for teaching-degree programmes) § 2 1 Nr. 3 b) S 2 INT S (D) Induge degree (main) Science (2015) Bachelor's degree (main) Science (2015) Bache	Module title					Abbreviation		
Module condinator Module offered by Deam of Studies Informatik (Computer Science) Institute of Computer Science ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade	Semina	Seminar - Selected Topics in Computer Science 1 10-I-SEM1-152-m01						
Dean of Studies Informatik (Computer Science) Institute of Computer Science ECTS Method of grading Only after succ. compl. of module(s) S numerical grade - Duration Module level Other prerequisites 1 semester undergraduate - Contents - - Independent review of a current topic in computer science on the basis of literature and, where applicable, software with written and oral presentation. The topics in modules 10-ISEM1 and 10-ISEM2 must come from different lecturers). Intended learning outcomes - Courses (type, number of weekly contact hours, language – if other than German) - S (2) - - Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module can be chosen to earn a bonus) - written elaboration (approx. to to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent discussions on a topic from the field of computer science - Language d'assessment (type, scope, language for teaching-degree programmes) - - Systemational information on whether module can be chosen to earn a bonus) - - Motidoation on places - -	Module	e coord	inator		Module offered by	red by		
ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade 1 semester Module level Other prerequisites 1 semester undergraduate Rependent review of a current topic in computer science on the basis of literature and, where applicable, software with written and oral presentation. The topics in modules 10-1-SEM2 must come from different rereat areas (this usually means that they are assigned by different lecturers). Intended Earning outcomes	Dean of Studies Informatik (Computer Science) Institute of Computer Science							
5 numerical grade Duration Module level. Other prerequisites 1 semestri undergraduate Contribution Contribution Contribution Contribution Independent review of a current topic in computer science on the basis of literature and, where applicable, software with written and oral presentation. The topics in modules to-FSEMa ant to-FSEMa must come from different areas (this usually means that they are assigned by different lectures). Intended learning of the subalt to independently review a current topic in computer science, to summarise the main aspects in written form and to orally present these in an appropriate way. Courses (type, number of weekly contact hours, language – if other than German, examination offered – if not every semester, information on whether module can be chosen to earn a bonus) written elab-ration (approx. to to ts pages) and presentation (approx. 30 to 45 minutes) with subsequent discussion on atopic from the field of computer science (anguage of assessment: German and/or English Aldtional Intermation Additional Intermation sp in sp in Sp in Sp in Sp	ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
Duration Module level Other prerequisites 1 semester undergaduate Contents Independent review of a current topic in computer science on the basis of literature and, where applicable, software with written and oral presentation. The topics in modules to-I-SEM1 and 1oI-SEM2 must come from different rear aceas (this usually means that they are assigned by different lecturers). Intended learning outcomes	5	nume	rical grade					
1 semester undergraduate Contents Independent review of a current topic in computer science on the basis of literature and, where applicable, software with written and oral presentation. The topics in modules to-I-SEMa and to-I-SEMa must come from different ereat areas (this usually means that they are assigned by different lecturers). Intended learning outcome The students are able to independently review a current topic in computer science, to summarise the main aspects in written form and to orally present these in an appropriate way. Courses (type, number of weekly contact hours, language – if other than German) S (a)	Duratio	on	Module level	Other prerequisites				
Contents Independent review of a current topic in computer science on the basis of literature and, where applicable, software with written and oral presentation. The topics in modules 10-1-SEM2 must come from different rent areas (this usually means that they are assigned by different lecturers). Intended learning outcomes Intended learning outcomes The students are able to independently review a current topic in computer science, to summarise the main aspects in written form and to orally present these in an appropriate way. Courses (type, number of weekly contact hours, language — if other than German) S (2) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) S 22 II Nr. 3 b) Module appears in Bachelor's degree (major) Computer Science (2015) First state examination for the teaching degree Gymasium Computer Science (201	1 seme	ster	undergraduate					
Independent review of a current topic in computer science on the basis of literature and, where applicable, soft- ware with written and oral presentation. The topics in modules 10-1-SEM2 must come from diffe- rent areas (this usually means that they are assigned by different lecturers). Intended learning outcomes The students are able to independently review a current topic in computer science, to summarise the main aspects in written form and to onally present these in an appropriate way. Courses (type, number of weekly contact hours, language — if other than German) S (2) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to ear a bonus) written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent dis- cussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places 	Conten	its						
Intended learning outcomes The students are able to independently review a current topic in computer science, to summarise the main aspects in written form and to orally present these in an appropriate way. Courses (type, number of weekly contact hours, language – if other than German) S (2) Course information on whether module can be chosen to earn a bonus) written elaboration (approx. 100 to 5 pages) and presentation (approx. 30 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places Allocation of place Current Course of the field of computer science Cuanguage of assessment: German and/or English Allocation of place Current Course of the field of computer science Cuanguage of assessment: German and/or English Allocation of place Current Course of the field of computer science Cuanguage of assessment: German and/or English Allocation of place Current Course of the field of Computer science Cuanguage of assessment: German and/or English Allocation of place Current Course Current Course Current Course Current Course Current Course Current Course Current Curren	Indepe ware w rent are	Independent review of a current topic in computer science on the basis of literature and, where applicable, soft- ware with written and oral presentation. The topics in modules 10-I-SEM1 and 10-I-SEM2 must come from diffe- rent areas (this usually means that they are assigned by different lecturers).						
The students are able to independently review a current topic in computer science, to summarise the main aspects in written form and to cally present these in an appropriate way. Courses (type, number of weekly contact hours, language — if other than German) S (2) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent dis- cussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places	Intend	ed learr	ning outcomes					
Courses (type, number of weekly contact hours, language — if other than German) S (2) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent dis- cussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places - Additional information Morkload 150 h Teaching cycle Referred to in LPO1 (examination regulations for teaching-degree programmes) § 2 zl INr. 3 b) Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 ma	The stu aspect	ıdents a s in writ	are able to independen tten form and to orally	tly review a current top present these in an ap	ic in computer scien propriate way.	ce, to summarise th	e main	
S (z) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent dis- cussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places Additional information Workload 150 h Teaching cycle Referred to in LPO 1 (examination regulations for teaching-degree programmes) § 22 Il Nr. 3 b) Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelo	Course	s (type	, number of weekly con	tact hours, language –	- if other than Germa	n)		
Wethod of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written elaboration (approx. to to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent dis- cussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places 	S (2)		,			,		
written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: German and/or English Allocation of places	Metho ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
Allocation of places Additional information Morkload Workload Workload Workload Teaching cycle Referred to in LPO 1 (examination regulations for teaching-degree programmes) § 22 II Nr. 3 b) Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Business Information Systems (2019) Module studies (Bachelor) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Module studies (Bachelor) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's degree (1 major) Computer Science (2020) Bachelor's de	written cussio Langua	elabor n on a t age of a	ation (approx. 10 to 15 opic from the field of c ssessment: German an	pages) and presentatic omputer science d/or English	on (approx. 30 to 45	minutes) with subse	quent dis-	
Additional information Additional information Additional information Additional information Additional information Additional information Average additional information Average additional information regulations for teaching-degree programmes) Second additional information Systems (2015) Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2016) Master's teaching degree of major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Computer Science (2019) Ba	Allocat	ion of p	olaces					
Additional information Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 22 II Nr. 3 b) Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Business Information Systems (2019) Module studies (Bachelor) Computer Science (2017) Bachelor's degree (1 major) Business Information Systems (2019) Module studies (Bachelor) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Master's teaching degree Gymnatium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Computer Science (2019) Module Studies (Bachelor) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Computer Science und Sustainability (2021)								
Workload 150 h Teaching cycle Referred to in LPO1 (examination regulations for teaching-degree programmes) § 2 2 II Nr. 3 b) Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Busines	Additio	onal info	ormation					
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Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 71 / 125	Bachelor's degree (1 major) Business Information Systems (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Business Information Systems (2020)							
	Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg	• generated 19-Apr-2025 • e	xam. reg.	page 71 / 125	

Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)
Module title			Abbreviation		
Seminar - Selected Topics in Computer Science 2 10-I-SEM2-152-m01					10-l-SEM2-152-m01
Module	e coord	inator		Module offered by	
Dean o	f Studie	es Informatik (Computer S	Science)	Institute of Comput	er Science
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				
Indepe ware w rent are	ndent r ith writ eas (thi	eview of a current topic i ten and oral presentation s usually means that the	n computer science o I. The topics in modul y are assigned by diff	n the basis of literat les 10-I-SEM1 and 10 erent lecturers).	ure and, where applicable, soft- -I-SEM2 must come from diffe-
Intende	ed learn	ning outcomes			
The stu aspects	dents a s in wri	are able to independently tten form and to orally pr	review a current topi esent these in an app	ic in computer scien propriate way.	ce, to summarise the main
Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
S (2)					
Methoo ster, in	l of ass formati	essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	in German, examina a bonus)	tion offered — if not every seme-
Wrap-u Langua	p repoi ge of a	rt on tutoring activities (5 ssessment: German and/	to 10 pages) ′or English		
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
150 h					
Toochi		•			
Teaciiii	ig cycu	e			
Referre	d to in	LPO I (examination regu	lations for teaching-d	legree programmes)	
Module	e appea	ars in			
Bachel	or's de	gree (1 major) Computer S	Science (2015)		
Bachel	or's de	gree (1 major) Business Ir	nformation Systems (2015)	
Bachel	or's deg	gree (1 major) Business Ir	nformation Systems (2016)	
Bachel	or's deg	gree (1 major) Computer S	Science (2017)		
Bachel	or's deg	gree (1 major) Computer S	Science (2019)		
Module	e studie	es (Bachelor) Computer S	cience (2019)	,	
Bachel	or's de	gree (1 major) Business Ir	ntormation Systems (2019)	
Bachel	or's deg	gree (1 major) Business Ir	Tormation Systems (2020)	
Bachel	or's deg	gree (1 major) Business Ir	normation Systems (2	2021)	
Bachel	or's deg	gree (1 major) Business If gree (1 major) Rusiness Ir	normation Systems (2023) 2024)	
Buchel			institución Systems (-~-4)	

Module title At				Abbreviation			
Control	Control Principles of Modern Communication Systems						
Module	e coord	inator		Module offered by	Module offered by		
holder	of the C	Chair of Computer Scier	ce III	Institute of Comput	er Science		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
8	numei	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
 C M B M H C S C It 	 Control Mechanisms of Modern Communication Systems Multimedia Networking Broadband Access Networks Mobile Communication Systems Home Access Networks Current trends such as Internet of Things (IoT) Software Defined Networking (SDN) Control mechanisms implemented and deployed on the Internet 						
Intende	d lear	ning outcomes					
The stu dern co measu analytic	dents p mmuni rement cal perf	oossess advanced know ication systems and are setups. In addition, stu formance evaluation.	vledge regarding the si able to apply it to eva dents have gathered i	tructure, architecture luate systems and p nsights of the basic	e and control mechan rotocols within simu methodologies in the	nisms of mo- Ilations and e field of	
Course	s (type,	number of weekly con	act hours, language –	if other than Germa	n)		
V (4) +	Ü (2)						
Methoo ster, in	l of ass formati	essment (type, scope, on on whether module	language — if other tha can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
written If anno examin prox. 19 Langua credita	examir unced l ation o 5 minut ge of a ble for	nation (approx. 60 to 12 by the lecturer at the be f one candidate each (a es per candidate). ssessment: German an bonus	o minutes). ginning of the course, approx. 20 minutes) or d/or English	the written examina an oral examination	tion may be replaced in groups of 2 cand	d by an oral idates (ap-	
Allocat	ion of p	olaces					
Additio	nal info	ormation					
Worklo	ad						
240 h							
Teachi	ng cycle	9					
Referred to in IPO I (examination regulations for teaching-degree programmes)							
Module	Module appears in						
Bachel	or's deg	gree (1 maior) Compute	r Science (2010)				
Bachel	or's deg	gree (1 major) Aerospac	e Computer Science (2	.020)			
Bachel	or's deg	gree (1 major) Artificial I	ntelligence and Data S	Science (2022)			
Bachel	or's deg	gree (1 major) Artificial I	ntelligence and Data S	Science (2023)			
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record E	• generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 74 / 125	



Bachelor's degree (1 major) Mathematics (2023)

Module title			Abbreviation			
Software Technology 10-I-ST-152-m01						
Modul	e coordinat	or		Module offered by		
Dean c	of Studies Ir	nformatik (Compute	er Science)	Institute of Comput	er Science	
ECTS	Method o	fgrading	Only after succ. con	npl. of module(s)		
10	numerica	l grade				
Duratio	on Mo	dule level	Other prerequisites			
1 seme	ester un	dergraduate				
Conter	nts					
Object bases cesses	Object-oriented software development with UML, development of graphical user interfaces, foundations of data- bases and object-relational mapping, foundations of web programming (HTML, XML), software development pro- cesses, unified process, agile software development, project management, quality assurance.					
Intend	ed learning	outcomes				
The stu softwa	udents poss re systems	sess a fundamenta	theoretical and praction	cal knowledge on the	e design and develop	oment of
Course	es (type, nu	mber of weekly con	tact hours, language –	- if other than Germa	n)	
V (4) +	Ü (2)					
Metho ster, in	d of assess Iformation (m ent (type, scope, on whether module	language — if other tha can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
lf anno examir prox. 1 credita	punced by t nation of or 5 minutes p able for bon	he lecturer at the b he candidate each (per candidate). us	eginning of the course, approx. 20 minutes) or	the written examina an oral examination	tion may be replaced in groups of 2 cand	d by an oral idates (ap-
Allocat	tion of plac	es				
Additio	onal inform	ation				
Worklo	bad					
300 h						
Teachi	ng cycle					
Teachi	ng cycle: or	nly in summer seme	ester			
Referre	ed to in LPC) (examination re	gulations for teaching-o	legree programmes)		
§ 49 § 69	Nr. 1 b) Nr. 1 b)					
Modul	e appears i	n				
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Human-Computer Systems (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015)						
First st First st Bachel Bachel Bachel	ate examin ate examin lor's degree lor's degree lor's degree	ation for the teachi ation for the teachi e (1 major) Business e (1 major) Aerospace e (1 major) Economa	ng degree Realschule (ng degree Gymnasium 5 Information Systems (ce Computer Science (2 athematics (2017)	.omputer Science (2 Computer Science (2 (2016) 2017)	015) 2015)	
Bachelor's	s with 1 major Co	mputer Science (2019)	JMU Würzburg data record E	s • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 76 / 125



Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Module studies (Bachelor) Orientierungsstudien (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024)

Module	e title				Abbreviation
Practical course in software 10-I-SWP-152-m01					10-I-SWP-152-m01
Module	e coord	inator		Module offered by	
Dean of	f Studi	es Informatik (Computer :	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	(not) s	successfully completed	10-I-PP, 10-I-ST		
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate	In addition, the know required. Prior atten ded.	wledge and skills ac dance of this modul	quired in module 10-I-ADS are e is therefore highly recommen-
Conten	ts				
Comple cation o tion and	etion of of solut d deliv	a project assignment in ion components (e. g. UI ery of the runnable softw	groups, problem ana ML) and milestones, ι are product in a collo	lysis, creation of req user manual, prograr quium.	uirements specifications, specifi- mming documentation, presenta-
Intende	ed lear	ning outcomes			
The stu small te	dents eams.	possess the practical skil	ls for the design, dev	elopment and execu	ition of a software project in
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (6)					
Methoo ster, in	l of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
practica sentatio	al proje on (app	ect (Completion of a large prox. 10 minutes per grou	r software project in g p)	groups (approx. 300	hours per person) and final pre-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
200 h					
Teachir		٩			
reaciii	is cyci	6			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§691N	Ir. 1 d)				
Module	Module appears in				
Bachelo Bachelo Bachelo First sta Bachelo Bachelo Bachelo	or's de or's de or's de ate exa or's de or's de or's de or's de	gree (1 major) Computer 5 gree (1 major) Mathemati gree (1 major) Computati mination for the teaching gree (1 major) Computer 5 gree (1 major) Computer 5 gree (1 major) Computer 5 gree (1 major) Mathemati	Science (2015) cs (2015) onal Mathematics (20 g degree Gymnasium Science (2017) Science (2019) Science und Sustaina cs (2023)	015) Computer Science (2 Ibility (2021)	2015)

Module titl	e			Abbreviation	
Tutorial Theoretical Informatics 10-I-TIT-191-m01				10-I-TIT-191-m01	
Module coo	ordinator		Module offered by		
Dean of Stu	dies Informatik (Computer	Science)	Institute of Comput	er Science	
ECTS Me	thod of grading	Only after succ. com	pl. of module(s)		
5 (no	t) successfully completed				
Duration	Module level	Other prerequisites			
1 semester	undergraduate				
Contents					
Computabi guages, co	ity, decidability, countabili ntext-sensitive languages, c	ty, finite automata, re omplexity of calculat	gular sets, generativ ions, P-NP problem,	e grammars, context-free lan- NP completeness.	
Intended le	arning outcomes				
The studen tability, fini complexity	ts possess a fundamental a te automata, regular sets, g of computations, P-NP prob	nd applicable knowle generative grammars, plem, NP completenes	edge in the areas of c context-free languag ss.	computability, decidability, coun- ges, context-sensitive languages,	
Courses (ty	pe, number of weekly conta	ict hours, language —	if other than Germa	n)	
Ü (2)					
Method of a ster, inform	assessment (type, scope, la ation on whether module c	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
a) exercises the exercise b) written e Die Prüfung	c (consisting in completion groups as well as approx. xamination (approx. 180 to sart ist vom Prüfling festzu	of approx. 11 home w 5 short assessments 240 minutes) legen	ork exercise sheets, written in the exercis	presentation of own solutions in se group) or	
Allocation	of places				
Additional	nformation				
Workload					
150 h					
Teaching c	/cle				
Referred to	in LPO I (examination regu	lations for teaching-d	legree programmes)		
Module ap	pears in				
Bachelor's Master's te Supplemen Bachelor's Bachelor's Bachelor's Bachelor's Bachelor's	Module appears in Bachelor's degree (1 major) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023)				

Module	e title				Abbreviation	
Theore	tical In	formatics			10-I-TIV-152-m01	
Module	e coord	inator		Module offered by		
Dean o	of Studie	es Informatik (Compute	er Science)	Institute of Comput	er Science	
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	Its					
Compu guages	itability 5, conte	, decidability, countab xt-sensitive languages	ility, finite automata, re , complexity of calculat	egular sets, generativ ions, P-NP problem,	/e grammars, contex NP completeness.	t-free lan-
Intend	ed learr	ning outcomes				
The stu tability comple	udents p , finite exity of	oossess a fundamenta automata, regular sets computations, P-NP pr	l and applicable knowl , generative grammars, oblem, NP completene	edge in the areas of a context-free languas ss.	computability, decid ges, context-sensitiv	ability, coun- e languages,
Course	s (type	, number of weekly con	tact hours, language –	- if other than Germa	n)	
V (4)						
Metho ster, in	d of ass formati	e ssment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
If anno examir prox. 1 Allocat	unced l nation o 5 minut t ion of p	by the lecturer at the b f one candidate each (es per candidate). blaces	eginning of the course, approx. 20 minutes) or	the written examina an oral examination	tion may be replaced in groups of 2 cand	d by an oral idates (ap-
Additio	onal info	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination reg	gulations for teaching-	degree programmes)		
§ 49 N § 69 N	Nr. 1 a) Nr. 1 a)					
Module	e appea	irs in				
Bachel	or's deg	gree (1 major) Compute	er Science (2015)			
Bachel	or's deg	gree (1 major) Mathema	atics (2015)			
Bachel	or's deg	gree (1 major) Computa	itional Mathematics (20	015)		
Bachel	or's deg	gree (1 major) Aerospa	ce Computer Science (2	2015)		
First st	ate exa	mination for the teachi	ng degree Realschule (Computer Science (20	015)	
First st	ate exa	mination for the teaching	ng degree Gymnasium	Computer Science (2	2015) ark Ravaria (ENR) (a.	or ()
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)						
Bachel	Bachelor's degree (1 major) Acrospace Computer Science (2017)					
Bachel	or's deg	gree (1 major) Compute	er Science (2019)			
Master Supple	's teach ementar	ning degree Gymnasiur y course MINT Teacher	n MINT Teacher Educat Education PLUS, Elite	ion PLUS, Elite Netwo Network Bavaria (EN	ork Bavaria (ENB) (20 B) (2020)	020)
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 80 / 125

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Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023)

Tutor activity a		
Tutor activity 1 10-I-TUT1-152-m01		
Module coordinator Module offered by		
Dean of Studies Informatik (Computer Science) Institute of Computer Science		
ECTS Method of grading Only after succ. compl. of module(s)		
2 (not) successfully completed		
Duration Module level Other prerequisites		
undergraduate		
Contents		
Tutoring activities in the area of computer science.		
Intended learning outcomes		
Imparting knowledge and skills to students of computer science.		
Courses (type, number of weekly contact hours, language — if other than German)		
T (2)		
Method of assessment (type, scope, language — if other than German, examination offered — if not ever ster, information on whether module can be chosen to earn a bonus)	ery seme-	
Wrap-up report on tutoring activities (5 to 10 pages)		
Allocation of places		
Additional information		
Workload		
60 h		
Teaching cycle		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
§ 22 II Nr. 2 f)		
§ 22 Nr. 3 t)		
Module appears in		
Bachelor's degree (1 major) Computer Science (2015)		
First state examination for the teaching degree Realschule Computer Science (2015)		
Rachelor's degree (1 major) Computer Science (2017)		
Bachelor's degree (1 major) Computer Science (2017)		
Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Computer Science und Sustainability (2021)		
Bachelor's degree (1 major) Computer Science and Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)		
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)		
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)		

Module	title				Abbreviation
Tutor activity 2 10-I-TUT2-152-m01				10-l-TUT2-152-m01	
Module	coord	inator		Module offered by	
Dean of	Studie	es Informatik (Computer S	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
		undergraduate			
Conten	ts				
Tutoring	g activi	ties in the area of compu	ter science.		
Intende	d learı	ning outcomes			
Imparti	ng kno	wledge and skills to stud	ents of computer scie	ence.	
Courses	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
T (2)					
Method ster, inf	l of ass ormati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Wrap-u	p repoi	t on tutoring activities (5	to 10 pages)		
Allocati	ion of p	olaces	· · · · · · · · · · · · · · · · · · ·		
Additio	nal inf	ormation			
Worklo	ad				
60 h					
Teachir	ig cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§ 22 N	Nr. 2 f)				
§ 22	Vr. 3 f)				
Module	appea	irs in			
Bachelo	or's deg	gree (1 major) Computer S	Science (2015)		
First sta	ite exa	mination for the teaching	g degree Realschule C	omputer Science (20	015)
FIRST Sta	ite exa	mination for the teaching	g degree Gymnasium	Computer Science (2	2015)
Bachold	n s ueg ar's day	gree (1 major) Computer S	Science (2017)		
Bachold	n s ueg ar's day	gree (1 major) Computer 3	Science (2019)	bility (2021)	
Bachel	n s ueg nr's dea	gree (1 major) Computer 3	telligence and Data S	cience (2021)	
Bachelo	or's de	gree (1 major) Artificial In	telligence and Data S	cience (2022)	
Bachelo	or's de	gree (1 major) Artificial In	telligence and Data S	cience (2024)	

Module	e title			Abbreviation
Tutor activity 3 10-I-TUT3-152-m01			10-I-TUT3-152-m01	
Module	e coordinator		Module offered by	
Dean o	f Studies Informatik (Computer	Science)	Institute of Comput	er Science
ECTS	Method of grading	Only after succ. com	pl. of module(s)	
2	(not) successfully completed			
Duratio	on Module level	Other prerequisites		
	undergraduate			
Conten	ts			
Tutorin	g activities in the area of compu	iter science.		
Intende	ed learning outcomes			
Imparti	ng knowledge and skills to stuc	lents of computer sci	ence.	
Course	s (type, number of weekly conta	act hours, language —	· if other than Germa	n)
T (2)				
Method ster, int	d of assessment (type, scope, la formation on whether module c	anguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
wrap-u	preport on tutoring activities (5	to to pages)		
Allocat	ion of places	-		
Additio	nal information	-		
Worklo	ad			
60 h		-		
Teachi	ng cycle			
Referre	d to in LPO I (examination regu	llations for teaching-c	legree programmes)	
Module	e appears in			
Bachel	or's degree (1 major) Computer	Science (2015)		
Bachel	or's degree (1 major) Computer	Science (2017)		
Bachel	or's degree (1 major) Computer	Science (2019)		
Bachel	or's degree (1 major) Computer	Science und Sustaina	ıbility (2021)	
Bachel	or's degree (1 major) Artificial In	telligence and Data S	cience (2022)	
Bachel	or's degree (1 major) Artificial In	telligence and Data S	cience (2023)	
Bachel	or's degree (1 major) Artificial In	telligence and Data S	icience (2024)	

Modul	e title				Abbreviation	
Knowledge-based Systems 10-I-WBS-152-m01						
Modul	e coord	inator		Module offered by	<u> </u>	
holder	of the (hair of Computer Scie	nce VI	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	nnl. of module(s)		
5	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
Founda thods,	ations i knowle	n the following areas: k dge acquisition, learni	knowledge managemer ng, guidance dialogue,	it systems, knowledg semantic web.	ge representation, so	olving me-
Intend	ed learı	ning outcomes				
The stu system	udents p ns inclu	oossess theoretical and ding knowledge formal	d practical knowledge f isation and have acqui	or the understanding red experience in a s	g and design of knov small project.	vledge-based
Course	es (type	, number of weekly cor	itact hours, language –	- if other than Germa	in)	
V (2) +	Ü (2)					
Metho	d of ass	essment (type, scope,	language — if other th	an German, examina	tion offered — if not	every seme-
writton	ovami	ation (approx 60 to 1	can be chosen to earn	a bonus)		
If anno	ounced	by the lecturer at the b	eginning of the course,	the written examina	tion may be replace	d by an oral
examir	nation o	of one candidate each (approx. 20 minutes) or	an oral examination	in groups of 2 cand	idates (ap-
prox. 1	5 minut	es per candidate).				
Langua	age of a	ssessment: German ar	id/or English			
Allocat	tion of r					
Alloca		Jaces				
Additi	onal inf	ormation				
Auditio						
Workle						
150 h	Jau					
Teachi	ng cycl	٩				
	ing cycu					
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)		
§ 22	Nr. 3 b)		<u></u>			
Modul	e appea	irs in				
Bache	lor's de	gree (1 major) Compute	er Science (2015)			
Bache	lor's de	gree (1 major) Mathem	atics (2015)			
Bache	lor's de	gree (1 major) Business	s Information Systems	(2015)		
Bache	lor's de	gree (1 major) Computa	ational Mathematics (2	015)		
Bachelor's degree (1 major) Aerospace Computer Science (2015)						
First st	First state examination for the teaching degree Gymnasium Computer Science (2015)					
Bache	Bachelor's degree (1 major) Business Information Systems (2016)					
Master	r's teach	ning degree Gymnasiur	n MINT Teacher Educat	ion PLUS, Elite Netwo	ork Bavaria (ENB) (2	016)
Supple	ementar	y course MINI leacher	Education PLUS, Elite	Network Bavaria (EN	в) (2016)	
Bacho	ioi s ueg Ior's dae	gree (1 major) Aerospa	e computer Science (2 ar Science (2017)	201/)		
Bachel	lor's de	gree (1 major) Compute	er Science (2017)			
Deck 1				· · · · · · · · · · · · · · · · · · ·		
Bachelor's	with 1 maj	or computer Science (2019)	JMU Würzburg data record	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	ik - 2019	page 85 / 125



Bachelor's degree (1 major) Business Information Systems (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title			Abbreviation			
Ordina	Ordinary Differential Equations for students of other subjects 10-M-DGLaf-152-mo1					01
Modul	e coordinator			Module offered by		
Dean o	of Studies Mathema	tik (Mathen	natics)	Institute of Mathem	natics	
ECTS	Method of grading	g	Only after succ. con	pl. of module(s)		
10	numerical grade	0				
Duratio	n Module lev	رما	Other prerequisites			
1 seme	ster undergradu	late				
Conter	its					
Exister ferenti	nce and uniqueness al equations; matri	s theorem; o x exponenti	continuous dependenc al series; linear differe	e of solutions on ini ntial equations of hi	tial values; systems gher order.	of linear dif-
Intend	ed learning outcom	nes		-	-	
Tho stu	ident is acquainted	l with the fu	ndamontal conconte a	nd mothods of the t	2000 of ordinary diff	orontial
equation	ons. He/she is able	to apply th	ese methods to practio	al problems.		erentiat
Course	s (type, number of	weekly con	tact hours, language –	· if other than Germa	n)	
V (4) +	Ü (2)					
Metho ster, in	d of assessment (ty formation on wheth	/pe, scope, her module	language — if other tha can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
a) writt	en examination (ar	nrox oo to	180 minutes usually	-hosen) or		
b) oral	examination of one	e candidate	each (15 to 30 minutes	5) or		
c) oral	examination in gro	ups (groups	of 2, 10 to 15 minutes	per candidate)		
Langua	age of assessment:	German an	d/or English			
credita	ble for bonus					
Allocat	tion of places					
Additio	onal information					
	,					
Worklo	ad					
300 h						
Teachi	ng cycle					
Referre	ed to in LPO I (exar	nination reg	gulations for teaching-o	legree programmes)		
Modul	e appears in					
Bachel	or's degree (1 maio	or) Compute	r Science (2015)			
Bachel	or's degree (1 majo	r) Aerospac	e Computer Science (2	015)		
Bachel	or's degree (1 majo	or) Functiona	al Materials (2015)			
Bachel	or's degree (1 majo) Aerospac	e Computer Science (2	.017)		
Bachel	or's degree (1 majo	or) Compute	r Science (2017)			
Bachelor's degree (1 major) Computer Science (2019)						
Bachelor's degree (1 major) Aerospace Computer Science (2020)						
Bachel	or's degree (1 majo	or) Functiona	al Materials (2021)			
Bachel	or's degree (1 majo	or) Compute	r Science und Sustaina	ability (2021)		
Bachel	or's degree (1 majo	or) Artificial I	Intelligence and Data S	Science (2022)		
Bachel	or's degree (1 majo	or) Artificial I	Intelligence and Data S	Science (2023)		
Bachel	or's degree (1 majo	or) Artificial I	Intelligence and Data S	Science (2024)		
Bachel	or's degree (1 majo	or) Functiona	al Materials (2025)			
Bachelor's	with 1 major Computer Scie	ence (2019)	JMU Würzburg data record E	• generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 87 / 125

Module title					Abbreviation	
Introduction to Discrete Mathematics for students of other subjects				subjects	10-M-DIMaf-152-m01	
Module	e coord	inator		Module offered by		
Dean o	f Studie	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			
1 seme	ster	undergraduate				
Conten	ts					
Technic error-co	ques fro prrectin	om combinatorics, introd g codes.	uction to graph theor	y (including applicat	tions), cryptographic methods,	
Intende	ed learr	ning outcomes				
The stu levant j realises	dent is proof te s the so	acquainted with the fun- echniques, is able to app cope of applications of di	damental concepts an ly methods from num screte structures.	nd results in discrete ber theory and algel	e mathematics, masters the re- ora to discrete mathematics and	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V (4) +	Ü (2)					
Method ster, in	l of ass formati	e ssment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
b) oral c) oral Langua credita	examin examin ge of a ble for	ation of one candidate e ation in groups (groups c ssessment: German and/ bonus	ach (15 to 30 minutes) of 2, 10 to 15 minutes or English	i) or per candidate)		
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
300 h						
Teachi	ng cycl	9				
Referre	d to in	LPOI (examination regu	lations for teaching-d	legree programmes)		
Module	annea	rs in				
Bachel	Rachalor's dograe (1 major) Computer Science (201r)					
Bachel	or's de	gree (1 major) Computer S	Science (2017)			
Bachel	Bachelor's degree (1 major) Computer Science (2019)					
Bachel	or's deg	gree (1 major) Computer S	Science und Sustaina	bility (2021)		
Bachel	or's deg	gree (1 major) Artificial In	telligence and Data S	cience (2022)		
Bachel	or's de	gree (1 major) Artificial In	telligence and Data S	cience (2023)		
Bachel	Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)					

Module title					Abbreviation	
Mathematics 1 for students in Computer Science					10-M-INF1-152-m01	
Module	coord	inator		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			
1 semes	ster	undergraduate				
Conten	ts					
Proposi integers system	itional s; elem s of lin	logic, set theory, proof te entary group theory; resi ear equations.	chniques, relations; s due class rings; basio	sequences, limits an cs in linear algebra,	nd lambda-symbols; the ring of linear maps and matrix calculus,	
Intende	ed learr	ning outcomes				
The stu to apply is able	dent ge y these to inter	ets acquainted with fund methods to problems in pret the results.	amental concepts and natural and engineer	d methods of advand ing sciences, in part	ced mathematics. He/She learns ticular in computer science, and	
Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V (4) + Í Module	Ü (2) taugh	t in: Ü: German or Englisł	1			
Method ster, inf	l of ass formati	e ssment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	in German, examina a bonus)	tion offered — if not every seme-	
a) writte b) oral e c) oral e Langua credital	en exar examin examin ge of a ole for	nination (approx. 90 to 1 ation of one candidate e ation in groups (groups c ssessment: German and, bonus	80 minutes, usually c ach (15 to 30 minutes of 2, 10 to 15 minutes ⁄or English	:hosen) or i) or per candidate)		
Allocati	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
300 h						
Teachir	ng cycl	9				
	3 - 9 - 61	-				
Referre	d to in	IPOI (examination regu	lations for teaching	egree programmec)		
Aciente						
Modulo						
Bachold	ahhag	aron (1 major) Computer (Science (2015)			
Bachelo	or's deg or's deg	gree (1 major) Computer 3	Science (2015)			
Bachelo	or's dea	gree (1 major) Computer (Science (2017)			
Bachelo	or's dea	gree (1 major) Computer S	Science und Sustaina	bility (2021)		
exchan	ge pros	gram Mathematics (2023))			

Module title					Abbreviation	
Mather	natics	2 for students in Comput	er Science		10-M-INF2-152-m01	
Module	e coord	inator		Module offered by		
Dean o	f Studi	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			
1 seme	ster	undergraduate				
Conten	ts					
Determ distribu	inants, utions.	, eigenvalue theory; even parameter estimates: ba	t and probability spaces in analysis.	ces, combinatorics,	random variables, examples of	
Intende	ed lear	ning outcomes				
The stu to appl is able	dent ge y these to inte	ets acquainted with funda methods to problems in rpret the results.	amental concepts and natural and engineer	d methods of advand ing sciences, in part	ced mathematics. He/She learns ticular in computer science, and	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V (4) + Module	Ü (2) e taugh	t in: Ü: German or English	1			
Methoo ster, in	l of ass formati	essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	in German, examina a bonus)	tion offered — if not every seme-	
a) writt b) oral c) oral (Langua credita	en exai examir examin ge of a ble for	mination (approx. 90 to 1 nation of one candidate e ation in groups (groups c ssessment: German and/ bonus	80 minutes, usually c ach (15 to 30 minutes of 2, 10 to 15 minutes ⁄or English	:hosen) or) or per candidate)		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
300 h						
Teachir	ıg cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachel Bachel	or's de or's de	gree (1 major) Computer S gree (1 major) Computer S	Science (2015) Science (2017)			
Bachel	or's de	gree (1 major) Computer S	Science (2019)			
Bachel	or's de	gree (1 major) Computer S	Science und Sustaina	bility (2021)		
exchan	exchange program Mathematics (2023)					

Module title				Abbreviation		
Numer	rical Ma	thematics 1 for studen	ts of other subjects		10-M-NUM1af-152-n	101
Modul	e coord	inator		Module offered by		
Dean o	of Studi	es Mathematik (Mathe	matics)	Institute of Mathematics		
ECTS	Metho	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				
Conter	nts					
Solutio	on of system of space of the system of the s	stems of linear equatic tion with polynomials.	ons and curve fitting pro splines and trigonome	blems, nonlinear eq tric functions, nume	uations and system rical integration.	s of equati-
Intend	ed lear	ning outcomes		,	0	
Tho stu	udont ic	acquainted with the fu	indamontal conconts a	nd mothods in num	prical mathematics	applies them
to prac	to practical problems and knows about their typical fields of application.					
Course	es (type	, number of weekly cor	ntact hours, language –	- if other than Germa	n)	
V (4) +	Ü (2)					
Metho ster, ir	d of ass nformati	sessment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
a) writ	ten exa	mination (approx, 90 to	o 180 minutes, usually	chosen) or		
b) oral	examir	ation of one candidate	e each (15 to 30 minutes	s) or		
c) oral	examin	ation in groups (group	s of 2, 10 to 15 minutes	per candidate)		
Langua	age of a	ssessment: German ar	nd/or English			
credita	able for	bonus				
Alloca	tion of p	olaces				
	_					
Additi	onal inf	ormation				
Workle	oad					
300 h						
Teachi	ing cycl	e				
Referr	ed to in	LPO I (examination re	gulations for teaching-	degree programmes)		
Modul	e appea	urs in				
Bache	lor's de	gree (1 major) Compute	er Science (2015)			
Bache	lor's de	gree (1 major) Physics	(2015)			
Bache	lor's de	gree (1 major) Nanostru	ucture Technology (201	5)		
Bache	lor's de	gree (1 major) Aerospa	ce Computer Science (2	2015)		
Bache	lor's de	gree (1 major) Function	al Materials (2015)			
Bache	lor's de	gree (1 major) Aerospa	ce Computer Science (2	2017)		
Bache	lor's de	gree (1 major) Compute	er Science (2017)			
Bache	Bachelor's degree (1 major) Computer Science (2019)					
Bache	achelor's degree (1 major) Physics (2020)					
Bache	3achelor's degree (1 major) Nanostructure Technology (2020)					
Bache	Bachelor's degree (1 major) Aerospace Computer Science (2020)					
Bache	lor's de	gree (1 major) Function	al Materials (2021)			
Bache	lor's de	gree (1 major) Compute	er Science und Sustaina	ability (2021)		
Bachelor's	s with 1 ma	jor Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 91 / 125

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Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Functional Materials (2025)

Module title					Abbreviation	
Operations Research for students of other subjects					10-M-ORSaf-152-m01	
Module	e coord	inator		Module offered by		
Dean o	f Studi	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	on	Module level	Other prerequisites			
1 seme	ster	undergraduate	-			
Conten	Contents					
Linear	prograr	nming, duality theory, tra	nsport problems, inte	egral linear program	ming, graph theoretic problems.	
Intend	ed lear	ning outcomes				
The stu for solv proble	ident is /ing ma ms, bot	acquainted with the fun- iny practical problems es th theoretically and nume	damental methods in pecially in economics rically.	operations research . He/She is able to a	n, as required as a central tool apply these methods to practical	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V (4) +	Ü (2)					
Metho ster, in	d of ass formati	sessment (type, scope, la ion on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
b) oral c) oral Langua Assess credita	examir examin age of a ment o ble for	nation of one candidate e ation in groups (groups c ssessment: German and, ffered: In the semester in bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes /or English which the course is (i) or per candidate) offered and in the su	ıbsequent semester	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
300 h						
Teachi	ng cvcl	e				
Referre	ed to in	LPOI (examination regu	lations for teaching-d	legree programmes)		
Module appears in						
Bachelor's degree (1 major) Computer Science (2015) Master's degree (1 major) Physics (2016) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Physics (2020) Master's degree (1 major) Physics International (2020) Pachelor's degree (1 major) Computer Science and Susteinability (2021)						
васпеі	Bachelor's degree (1 major) Computer Science und Sustainability (2021)					

Module title					Abbreviation	
Stochastics 1 for students of other subjects					10-M-STO-1af-152-m01	
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Combir continu chastic varianc	natorics uous di indepo ce, limit	s, Laplace models, select stributions: normal distri endence, elementary con theorems: law of large n	ed discrete distributi bution, random varia ditional probability, o umbers, central limit	ons, elementary mea ble, distribution fun characteristics of dis theorem.	asure and integration theory, ction, product measures and sto- tributions: expected value and	
Intende	ed lear	ning outcomes				
The stu practica	ıdent is al prob	acquainted with fundam lems and knows about th	iental concepts and r ne typical fields of app	nethods in stochasti plication.	ics, applies these methods to	
Course	s (type	, number of weekly conta	ct hours, language —	- if other than Germa	n)	
V (4) +	Ü (2)					
Method ster, in a) writt b) oral c) oral Langua credita Allocat	Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus Allocation of places					
Additio	onal inf	ormation				
	-					
Worklo	ad					
300 h						
Teachi	ng cycl	е				
Referre	ed to in	LPOI (examination regu	lations for teaching-o	degree programmes)		
Module	Module appears in					
Bachel Bachel Bachel Bachel Bachel Bachel Bachel	Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)					

Module title					Abbreviation	
Introdu	ction lı	nto Number Theory for st	10-M-ZTHaf-152-m01			
Module	coord	nator		Module offered by		
Dean of	f Studie	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS	Metho	d of grading	Only after succ. com	pl. of module(s)		
10	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Elemen tests ar forms, o	tary pro nd meth diopha	operties of divisibility, pr nods for factorisation, str ntine approximation and	ime numbers and pri ructure of the residue diophantine equatio	me number factorisa class rings, theory c ns.	ation, modular arithmetics, prime of quadratic remainder, quadratic	
Intende	ed learr	ning outcomes				
The stu ploy the	dent is e basic	acquainted with the fund methods and proof tech	damental concepts a niques independently	nd methods of numb y.	per theory. He/she is able to em-	
Course	s (type,	number of weekly conta	ct hours, language —	if other than Germa	n)	
V (4) +	Ü (2)					
Method ster, inf a) writte b) oral e c) oral e Langua credital	 Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English 					
Allocat	ion of p	laces				
Additio	nal info	ormation				
Worklo	ad					
300 h						
Teachir	ng cycl	9				
Referre	d to in	LPOI (examination regu	lations for teaching-d	legree programmes)		
Module	Module appears in					
Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo	Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)					

Modul	Module title					
Introd	Introduction to Physics for Students of other Disciplines 11-EFNF-152-mo1					
Modul	e coordinator		Module offered by	<u> </u>		
Manag	ing Director of the Institute of A	Applied Physics	Faculty of Physics a	nd Astronomy		
FCTS	Method of grading	Only after succ. con	nl of module(s)	ind Astronomy		
7	numerical grade					
/ Durati	Module level	Other prorequisites				
2 seme	ester undergraduate					
Conter	nts					
Fundaı physic	mentals of mechanics, vibratio s.	n theory, thermodynar	nics, optics, science	of electricity, atomic	and nuclear	
Intended learning outcomes						
The students are able to identify fundamental physical contexts. They are able to assign them to corresponding fields in physics. They are able to apply simple formulae in order to analyse and evaluate these contexts.						
Course	s (type number of weekly cont	tact hours language -	- if other than Germa	n)		
V (4) +	V (3)					
Metho ster, in	d of assessment (type, scope, formation on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
writter	examination (60 to 120 minut	es)				
Alloca	tion of places					
Additi	anal information					
accord	ing to 8 2 para 2 contoneo 2 A	POI mCh in conjunction	n with No. I and lotte	vrd) and No. 1 1st lott	ord) of an	
nex 1 t	o the APOLmCh and No. 4 of ar	nnex 2 to the APOLmCh	n with No. 1 2nd lette		er u) or an-	
Worklo	bad					
210 h						
Teachi	ng cycle					
Referre	ed to in LPO I (examination reg	gulations for teaching-o	degree programmes)			
Modul	e appears in					
Bache	lor's degree (1 major) Biology (2	2011)				
Bache	lor's degree (1 major) Chemistr	y (2010)				
Bache	lor's degree (1 major) Psycholo	gy (2010)				
Bache	lor's degree (1 major, 1 minor) F	Pedagogy (2013)				
Bache	lor's degree (1 major, 1 minor) F	Political and Social Stu	dies (2013)			
Bache	lor's degree (1 major, 1 minor) F	Russian Language and	Culture (2008)			
Bache	lor's degree (2 majors) Special	Education (2009)				
Magister Theologiae Catholic Theology (2013)						
First state examination for the teaching degree Gymnasium English (2009)						
First state examination for the teaching degree Gymnasium Biology (2009)						
First st	First state examination for the teaching degree Gymnasium Chemistry (2009)					
First st	First state examination for the teaching degree Gymnasium Geography (2009)					
First st	First state examination for the teaching degree Gymnasium French Studies (2009)					
First st	ate examination for the teaching	ng degree Gymnasium	German (2009)			
First st	ate examination for the teaching	ng degree Gymnasium	History (2009)			
First st	ate examination for the teaching	ng degree Gymnasium	Greek Philology (200	09)		
Bachelor's	with 1 major Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informat	xam. reg. ik - 2019	page 96 / 125	

First state examination for the teaching degree Gymnasium Computer Science (2009) First state examination for the teaching degree Gymnasium Italian Studies (2009) First state examination for the teaching degree Gymnasium Catholic Theology (2009) First state examination for the teaching degree Gymnasium Latin Philology (2009) First state examination for the teaching degree Gymnasium Mathematics (2012) First state examination for the teaching degree Gymnasium Mathematics (2009) First state examination for the teaching degree Gymnasium Music (2009) First state examination for the teaching degree Gymnasium Physics (2009) First state examination for the teaching degree Gymnasium Russian (2009) First state examination for the teaching degree Gymnasium Social Science (2009) First state examination for the teaching degree Gymnasium Spanish Studies (2009) First state examination for the teaching degree Gymnasium Science of Sport (2009) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009) Bachelor's degree (2 majors) English and American Studies (2009) Bachelor's degree (2 majors) German Language and Literature (2013) Bachelor's degree (1 major) Biochemistry (2015) Bachelor's degree (1 major) Chemistry (2015) Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Food Chemistry (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Biomedicine (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 97 / 125 data record Bachelor (180 ECTS) Informatik - 2019

Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) First state examination for the teaching degree Gymnasium English (2015) First state examination for the teaching degree Gymnasium Biology (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Gymnasium French Studies (2015) First state examination for the teaching degree Gymnasium German (2015) First state examination for the teaching degree Gymnasium History (2015) First state examination for the teaching degree Gymnasium Greek Philology (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) First state examination for the teaching degree Gymnasium Italian Studies (2015) First state examination for the teaching degree Gymnasium Catholic Theology (2015) First state examination for the teaching degree Gymnasium Latin Philology (2015) First state examination for the teaching degree Gymnasium Mathematics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Gymnasium Russian (2015) First state examination for the teaching degree Gymnasium Social Science (2015) First state examination for the teaching degree Gymnasium Spanish Studies (2015) First state examination for the teaching degree Gymnasium Science of Sport (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) First state examination for the teaching degree Gymnasium Music (2015) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) First state examination for the teaching degree Gymnasium French Studies (2016) First state examination for the teaching degree Gymnasium Italian Studies (2016) First state examination for the teaching degree Gymnasium Spanish Studies (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) First state examination for the teaching degree Gymnasium English (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 98 / 125

data record Bachelor (180 ECTS) Informatik - 2019

Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) First state examination for the teaching degree Gymnasium Greek Philology (2018) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) First state examination for the teaching degree Gymnasium Physics (2018) Bachelor's degree (1 major) Computer Science (2019) First state examination for the teaching degree Gymnasium Mathematics (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Food Chemistry (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) First state examination for the teaching degree Gymnasium Physics (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) First state examination for the teaching degree Gymnasium Political and Social Studies (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Informatik - 2019

First state examination for the teaching degree Gymnasium History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) First state examination for the teaching degree Gymnasium English (2021) Bachelor's degree (1 major) Functional Materials (2021) First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) First state examination for the teaching degree Gymnasium Russian (2023) First state examination for the teaching degree Gymnasium Mathematics (2023) First state examination for the teaching degree Gymnasium English (2023) First state examination for the teaching degree Gymnasium Geography (2023) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) First state examination for the teaching degree Gymnasium German (2024) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 100 / 125 data record Bachelor (180 ECTS) Informatik - 2019

Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) First state examination for the teaching degree Gymnasium Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) First state examination for the teaching degree Gymnasium English (2024) First state examination for the teaching degree Gymnasium History (2024) First state examination for the teaching degree Gymnasium Greek Philology (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title					Abbreviation		
Labora	atory Co	urse Physics for Stude	nts of other Discipline	5	11-PFNF-152-m01		
Modu	e coord	inator		Module offered by			
Manas	ging Dire	ector of the Institute of	Applied Physics	s Faculty of Physics and Astronomy			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	,		
3	(not) s	successfully completed		1			
Durati	on	Module level	Other prerequisites				
1 sem	ester	undergraduate					
Conte	nts						
Simple tic res	e experi onance	ments in the fields of n atomic and nuclear ph	nechanics, vibration the ysics, imaging methods	eory, thermodynami s.	cs, optics, X-rays, nu	clear magne-	
Intended learning outcomes							
The students have recognised and understood physical contexts on the basis of the implementation of own ex- periments. They can conduct simple experiments in the laboratory. They are able to identify and assess sources of errors in experiments. They are able to compile a protocol for experimental procedures. They have a basic un- derstanding of physical phenomena and know the basic ideas and ways of functioning of different measuring and imaging methods as well as their applications, especially in the field of biomedicine.							
Course	es (type	, number of weekly con	tact hours, language –	- if other than Germa	in)		
P (4)							
Metho ster, ir	o d of ass nformati	s essment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
a) prac prox. g Each e ments	ctical as 90 minu experime can eao	signment with oral test tes). ent comprises preparat ch be repeated once.	: (approx. 15 minutes, c ion, performance and e	luring experiments)	and b) written exami vell as performance c	nation (ap- of experi-	
Alloca	tion of p	olaces					
Only a	s part o	f pool of general transf	erable skills (ASQ): 10	places (lottery)			
Additi	onal inf	ormation					
accord	ling to §	2 para. 2 sentence 2 A	POLmCh in conjunctio	n with No. I 2nd lette	er d) and No. I 1st lett	ter d) of an-	
Workl	nad bee	oemen und no. 4 or u					
workt	Jau						
90 n							
Teach	ing cyci	8					
Referr	ed to in	LPO I (examination reg	gulations for teaching-	degree programmes)			
Modu	e appea	irs in					
Bache	lor's de	gree (1 major) Biology (2011)				
Bache	lor's de	gree (1 major) Chemisti	y (2010)				
Bache	Bachelor's degree (1 major) Psychology (2010)						
Bachelor's degree (1 major, 1 minor) Pedagogy (2013)							
Bache	Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)						
Bache	lor's de	gree (1 major, 1 mmor)		Cullule (2008)			
Magis	Dachelor S degree (2 majors) Special Education (2009) Magister Theologiae Catholic Theology (2012)						
First st	tate exa	mination for the teachi	ng degree Gymnasium	English (2009)			
First st	tate exa	mination for the teachi	ng degree Gymnasium	Biology (2009)			
Bachelor's	s with 1 ma	or Computer Science (2019)	JMU Würzburg	• generated 19-Apr-2025 • e Bachelor (180 FCTS) Informat	xam. reg. ik - 2019	page 102 / 125	

First state examination for the teaching degree Gymnasium Chemistry (2009) First state examination for the teaching degree Gymnasium Geography (2009) First state examination for the teaching degree Gymnasium French Studies (2009) First state examination for the teaching degree Gymnasium German (2009) First state examination for the teaching degree Gymnasium History (2009) First state examination for the teaching degree Gymnasium Greek Philology (2009) First state examination for the teaching degree Gymnasium Computer Science (2009) First state examination for the teaching degree Gymnasium Italian Studies (2009) First state examination for the teaching degree Gymnasium Catholic Theology (2009) First state examination for the teaching degree Gymnasium Latin Philology (2009) First state examination for the teaching degree Gymnasium Mathematics (2012) First state examination for the teaching degree Gymnasium Mathematics (2009) First state examination for the teaching degree Gymnasium Music (2009) First state examination for the teaching degree Gymnasium Physics (2009) First state examination for the teaching degree Gymnasium Russian (2009) First state examination for the teaching degree Gymnasium Social Science (2009) First state examination for the teaching degree Gymnasium Spanish Studies (2009) First state examination for the teaching degree Gymnasium Science of Sport (2009) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009) Bachelor's degree (2 majors) English and American Studies (2009) Bachelor's degree (2 majors) German Language and Literature (2013) Bachelor's degree (1 major) Biochemistry (2015) Bachelor's degree (1 major) Chemistry (2015) Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Food Chemistry (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Biomedicine (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 103 / 125 data record Bachelor (180 ECTS) Informatik - 2019

Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) First state examination for the teaching degree Gymnasium English (2015) First state examination for the teaching degree Gymnasium Biology (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Gymnasium French Studies (2015) First state examination for the teaching degree Gymnasium German (2015) First state examination for the teaching degree Gymnasium History (2015) First state examination for the teaching degree Gymnasium Greek Philology (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) First state examination for the teaching degree Gymnasium Italian Studies (2015) First state examination for the teaching degree Gymnasium Catholic Theology (2015) First state examination for the teaching degree Gymnasium Latin Philology (2015) First state examination for the teaching degree Gymnasium Mathematics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Gymnasium Russian (2015) First state examination for the teaching degree Gymnasium Social Science (2015) First state examination for the teaching degree Gymnasium Spanish Studies (2015) First state examination for the teaching degree Gymnasium Science of Sport (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) First state examination for the teaching degree Gymnasium Music (2015) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) First state examination for the teaching degree Gymnasium French Studies (2016) First state examination for the teaching degree Gymnasium Italian Studies (2016) First state examination for the teaching degree Gymnasium Spanish Studies (2016) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 104 / 125 data record Bachelor (180 ECTS) Informatik - 2019

Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) First state examination for the teaching degree Gymnasium English (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) First state examination for the teaching degree Gymnasium Greek Philology (2018) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) First state examination for the teaching degree Gymnasium Physics (2018) Bachelor's degree (1 major) Computer Science (2019) First state examination for the teaching degree Gymnasium Mathematics (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Food Chemistry (2019) Module studies (Bachelor) Orientierungsstudien (2020) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) First state examination for the teaching degree Gymnasium Physics (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Informatik - 2019

Bachelor's degree (2 majors) Pedagogy (2020) First state examination for the teaching degree Gymnasium Political and Social Studies (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) First state examination for the teaching degree Gymnasium History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) First state examination for the teaching degree Gymnasium English (2021) Bachelor's degree (1 major) Functional Materials (2021) First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) First state examination for the teaching degree Gymnasium Russian (2023) First state examination for the teaching degree Gymnasium Mathematics (2023) First state examination for the teaching degree Gymnasium English (2023) First state examination for the teaching degree Gymnasium Geography (2023) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's with 1 major Computer Science (2019) JMU Würzburg • generated 19-Apr-2025 • exam. reg. page 106 / 125 data record Bachelor (180 ECTS) Informatik - 2019

Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) First state examination for the teaching degree Gymnasium German (2024) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) First state examination for the teaching degree Gymnasium Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) First state examination for the teaching degree Gymnasium English (2024) First state examination for the teaching degree Gymnasium History (2024) First state examination for the teaching degree Gymnasium Greek Philology (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title					Abbreviation		
Supply	r, Produ	iction and Operations Ma	uction	12-BPL-G-152-m01			
Module	e coord	inator		Module offered by	Module offered by		
holder Manag	of the (ement	Chair of Business Manag	ement and Industrial	Faculty of Managen	nent and Economics		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
5	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conten	its						
This co gistics res.	ourse wi and the	Il provide students with e related corporate functi	an overview of fundai ions as well as a mod	nental processes in el-based introductio	procurement, produ on to related plannin	iction and lo- g procedu-	
Intend	ed lear	ning outcomes					
The stu rate pro develo	udents v ocurem ping an	will be able to describe a ent, production and logi d applying basic plannir	nd discuss the object stics as well as their i ng models in these fie	ives and major proc nterdependencies. F lds.	esses in the domain Furthermore, they are	is of corpo- e capable of	
Course	s (type	, number of weekly conta	ect hours, language —	if other than Germa	ın)		
V (2) +	T (2)						
Metho ster, in	d of ass formati	sessment (type, scope, la on on whether module c	anguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
written	exami	nation (approx. 60 minut	es)				
Allocat	tion of p	olaces					
(1) No I Manag (BSc w as well (60 EC allocat will be ready a ved, pl applica ta 3 (29 availab	(1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits already achieved in the respective degree subject; 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 as (25 % of places): lottery. (4) A waiting list will be maintained and places re-allocated by lot as they become						
Additio	onal inf	ormation					
Worklo	oad						
150 h							
Teachi	ng cycl	e					
Teachi	ng cycle	e: winter semester					
Referre	ed to in	LPOI (examination regu	llations for teaching-o	legree programmes)			
Modul	e annes	urs in					
Bachel	or's de	gree (1 major) Computer	Science (2015)				
Bachel	or's de	gree (1 major) Mathemati	ics (2015)				
Bachel	or's de	gree (1 major) Business N	Management and Eco	nomics (2015)			
Bachelor's	with 1 ma	or Computer Science (2019)	- JMU Würzburg data record F	• generated 19-Apr-2025 • e	xam. reg. ik - 2010	page 108 / 125	
UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major, 1 minor) Business Management and Economics (2019) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019) Bachelor's degree (1 major) Business Information Systems (2020)

Module	e title				Abbreviation
Introdu	iction t	o Business Informatics			12-Ewiinf-G-152-m01
Module	e coord	inator		Module offered by	
holder of the Chair of Business Management and Business Information Systems			ement and Business	Faculty of Management and Economics	
ECTS	Metho	od of grading	Only after succ. compl. of module(s)		
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
This co The cor require	urse pr ntent ra ments	ovides a comprehensive anges from the history of and process modelling. I	overview of the theo information systems n addition to the lect	retical and practical and business softwa ures, tutorials with p	aspects of information systems. are to business models, technical practical exercises in HTML, CSS,

process mining and BPMN support a deeper understanding and application of the knowledge learnt.

Outline of syllabus:

1. overview and technological basics of WI

2. hardware, computer networks and the internet

- 3. databases and blockchain
- 4. business models, company structure and organisation
- 5. connection between business administration and information systems
- 6. business software and process mining

7. software development

8. future technologies and current research

Reading:

Thome: Grundzüge der Wirtschaftsinformatik.

Intended learning outcomes

The "Business Informatics" module aims to achieve the following learning outcomes:

- 1. Apply fundamentals: after completing the module, students will have an understanding of the basic concepts and terms of information systems and will be able to explain lecture elements addressed, such as hardware components, various database types or blockchain technology. Thanks to the practical exercises, they are able to implement simple applications and apply what they have learnt in practice. The students were also able to gain an overview of the various fields of business informatics.
- 2. Analysing business processes and system landscapes: After completing the module, students will be able to analyse business models and process modelling and demonstrate their skills by creating BPMN diagrams in practical exercises. They know the basics of software development and are familiar with ERP systems.
- 3. Conception of business solutions: Students are able to use learned knowledge about business software, structural and process organisation and new technologies to develop realistic solution strategies and business models for operational challenges. They have knowledge of the integration of information systems into operational processes.
- 4. Evaluating technology trends: Participants will be able to critically evaluate current and future trends in business informatics, including artificial intelligence and Industry 4.0, and contribute their assessments to discussions.

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

V (2) + T (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or

b) written examination consisting entirely or partly of multiple choice questions (approx. 60 minutes) Language of assessment: German and/or English

creditable for bonus

Bachelor's with 1 major Computer Science (2019)

Allocation of places

840 places.

(1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) Additional places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (4) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (5) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

Workload

150 h

Teaching cycle

Teaching cycle: winter semester

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

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Module appears in

Bachelor's degree (1 major) Computer Science (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Computer Science (2017)

Bachelor's degree (1 major) Computer Science (2019)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2020)

Module title					Abbreviation		
Financi	al Acco	ounting		12-ExtUR-G-152-mo	1		
Module	coord	inator		Module offered by			
holder Taxatio	of the (n	Chair of Business Mana	agement and Business	Faculty of Managem	nent and Economics		
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						
This con ble-ent ties and	urse of ry book d equity	fers an introduction to c-keeping as well as the y according to German	the fundamentals of fir e fundamentals of reco commercial law.	nancial accounting, i gnition, valuation an	ncluding the technic d presentation of as	jue of dou- sets, liabili-	
Intende	ed learr	ning outcomes					
Studen produce	ts acqu e and a	iire a basic unterstand pply this knowledge, i	ing of the fundamentals .e. they are able to solv	s of financial accoun e simple accounting	ting. They are able to problems.	o arrange, re-	
Course	s (type,	, number of weekly cor	itact hours, language –	if other than Germa	n)		
V (2) +	T (2)						
Method ster, inf	l of ass formati	e ssment (type, scope, on on whether module	language — if other tha can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
written	examir	nation (approx. 60 min	utes)				
Allocati	ion of p	olaces					
(1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) 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. b) 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. c) Quo-							
Additio	nal info	ormation					
Worklo	ad						
150 h							
Teachir	ng cycl	e					
Teachir	ng cycle	e: winter semester					
Referre	d to in	IPOL (examination re	gulations for teaching.	legree programmes)			
Referred to III LPO I (examination regulations for teaching-degree programmes)							
Module	appea	irs in					
Bachelo Bachelo Bachelo Bachelo	Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Sustemes (2015)						
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg	• generated 19-Apr-2025 • e	xam. reg.	page 112 / 125	
			data record E	Bachelor (180 ECTS) Informati	k - 2019		

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019) Bachelor's degree (1 major) Business Information Systems (2020)

Module title					Abbreviation	
Forward and Reverse Business Engineering 12-FRBE-F-152-m01						
Module	e coord	inator		Module offered by		
holder Informa	of the (ation Sy	Chair of Business Mana ystems	agement and Business	Faculty of Managen	nent and Economics	
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	Its					
 "Business Engineering" refers to the method and model-based design theory for companies in the information age. "Forward" refers to design methods (such as situation analysis, requirements analysis and business process modelling) that help implement a new solution. "Reverse" refers to approaches (such as the use and process analysis) that make it possible to improve or re-design existing structures and processes. Market requirements and technological innovation potential are typical reasons for the continuous transformation of a company. The resulting change needs to be implemented into the organisational structure, business processes and information systems. The course traces the implementation cycle of enterprise software from the point of view of a member of a project team. In addition to acquainting students with the theoretical basis of adaptation, the course will also discuss examples from practical projects. Intended learning outcomes The "Forward und Reverse Business Engineering" module aims to achieve the following learning outcomes: Students acquire profound expertise in the process of adapting business software libraries and learn how to apply this knowledge to practical scenarios. Mastery of forward engineering methods such as situation analysis, requirements analysis, process modeling, and business blueprinting, as well as reverse engineering methods like reverse business engineering and their practical implementation in corresponding tools. Students develop interdisciplinary methodological skills that enable them to independently and flexibly tack- 						
and	reverse	engineering	to at her we have we	if a the suith and Courses		
Course	s (type	, number of weekly con	itact nours, language –	- if other than Germa	in)	
V(2) +	$\frac{0}{0}$	sessment (type, scope,	language — if other the	an German, examina	tion offered — if not	everv seme-
ster, in	formati	on on whether module	can be chosen to earn	a bonus)		,
a) writt b) term c) term credita	en exa paper paper ble for	mination (approx. 60 m (approx. 15 pages) or (approx. 10 to 15 pages bonus	iinutes) or 5) and presentation (ap	prox. 10 minutes); (v	veighted 2:1)	
Allocat	ion of p	olaces				
50 places. Should the number of applications exceed the number of available places, places will be allocated as follows: (1) Bachelor's students of Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) will be given preferential consideration. (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (1) and (2) and the number of applications exceeds the number of available places, places will be allocated by lot among applicants from this group. (4) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (5) A waiting list will be maintained and places re-allocated by lot as they become available.						
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Bachelor's	with 1 ma	jor Computer Science (2019)	JMU Würzburg data record I	g • generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 114 / 125

Teaching cycle

Teaching cycle: winter semester

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

Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Master's degree (1 major) Media Communication (2015) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Master's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Master's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019) Master's degree (1 major) Media Communication (2019) Bachelor's degree (1 major) Business Information Systems (2020) Master's degree (1 major) China Business and Economics (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2021) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) exchange program Business Management and Economics (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2023)

Module title					Abbreviation		
Integra	Integrated Business Processes 12-GP-G-152-m01						
Module	e coord	inator		Module offered by			
holder Informa	of the (ation Sy	Chair of Business Manage /stems	ement and Business	Faculty of 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						
This col sensch parts. In sis for t quired text, the alt with The cou the exa cesses Intende After co 1. reflec 2. unde	This course is aimed at students of Wirtschaftsinformatik (Business Information Systems) and Wirtschaftswis- senschaft (Business Management and Economics) interested in the topic. The course is divided up into two parts. In the theoretical part, students will acquire the necessary theoretical knowledge that will serve as a ba- sis for the practical part. The practical exercise will present students with an opportunity to apply their newly ac- quired knowledge by working with an SAP S4/HANA on case studies on the model company Almika. In this con- text, the human resources, purchasing, sales, service, project management and finance departments will be de- alt with. The course will introduce students to business processes of an ERP system (Enterprise Resource Planning) using the example of SAP S/4HANA. In addition to the basic principles, students will also become familiar with the pro- cesses and functionalities. Intended learning outcomes After completing the course, the students will be able to 1. reflect technical principles and operational models of ERP systems,						
3. perfo	orm and	understand business pr	ocesses within the E	RP system SAP Busin	ness ByDesign.		
V(2) +	s (type,	, number of weekly conta	ct hours, language –	- if other than Germa	n)		
Mothod		accment (tuna ccona la	nguaga if other the	an Corman, ovamina	tion offered if not even come		
ster, in	formati	on on whether module ca	an be chosen to earn	a bonus)			
a) writte b) term c) term credital	en exar paper paper ble for	nination (approx. 60 min (approx. 15 pages) or (approx. 10 to 15 pages) a bonus	utes) or and presentation (ap	prox. 10 minutes); (v	veighted 2:1)		
Allocat	ion of p	olaces					
15 places. (1) The number of places is not restricted for students of the Bachelor's degree subject Wirtschafts- informatik (Business Information Systems) (BSc with 180 ECTS credits). (2) Additional places will be allocated to students of other subjects provided there is enough capacity. These additional places will be allocated by lot among all applicants irrespective of their subjects. (3) Places on all courses of the module with a restricted num- ber of places will be allocated in the same procedure. (4) A waiting list will be maintained and places re-alloca- ted by lot as they become available.							
Additio	Additional information						
Worklo	ad						
150 h							
Teaching cycle							
Teaching cycle: summer semester							
Referre	d to in	LPO I (examination regu	lations for teaching-o	degree programmes)			

Module appears in

Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Master's degree (1 major) Media Communication (2015) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Master's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Master's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019) Master's degree (1 major) Media Communication (2019) Bachelor's degree (1 major) Business Information Systems (2020) Master's degree (1 major) China Business and Economics (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2021) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) exchange program Business Management and Economics (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2023)

Module title					Abbreviation			
Investn	nent an	12-l&F-G-152-m01						
Module	e coordi	nator		Module offered by				
holder o Finance	holder of the Chair of Business Management and Corporate Faculty of Management and Economics Finance							
ECTS	Metho	d of grading	Only after succ. com	pl. of module(s)				
5	numer	rical grade		-				
Duratio	n	Module level	Other prerequisites					
1 semes	ster	undergraduate						
Conten	ts							
This mo rized wi	odule p ith the	rovides an overview of ne basics of finance, includ	eoclassical investme ng both tax aspects	nt and financing the and risk consideration	ory. The students will be familia- ons.			
Structu	re:							
Part 1: I a. Finar b. Inves c. Inves d. Inves	nvestm ncial Ma stments stments stments	ent calculation athematics: calculation o s under certainty s taking into account taxe s under uncertainty	f compound interest s	and annuities				
Part 2: 1 a. Form b. Capit c. Divid	Financi s of fin tal strue end po	ng ancing cture policy (equity versu licy (external versus inte	s debt financing) mal financing)					
Intende	ed tearr							
(i) unde (ii) solv lues; (iii) syst	erstand e inves tematiz	the fundamentals in fina tments decisions by mea te forms of financing and	incial mathematics; ans of dynamic appro evaluate their applic	aches, in particular	via capital plans and present va-			
Course	s (type.	number of weekly conta	ct hours, language —	if other than Germa	n)			
$V(2) + \frac{1}{2}$	T (2)	number of weekly conta						
Method ster, inf	l of ass formati	essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-			
written	examir	nation (approx. 60 minute	es)					
Allocati	ion of p	laces						
Allocation of places 620 places. (1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits al- ready achieved in the respective degree subject; among applicants with the same number of ECTS credits achie- ved, places will be allocated by lot. b) 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. c) Quo- ta 3 (25 % of places): lottery. (4) A waiting list will be maintained and places re-allocated by lot as they become available.								

Additional information

Workload

150 h

Teaching cycle

Teaching cycle: winter semester

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

Module appears in

Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019) Bachelor's degree (1 major) Business Information Systems (2020)

Module	title				Abbreviation		
Manage	Managerial Accounting 12-IntUR-G-152-mo1						
Module coordinator Module offered by							
holder of and Acc	of the (countin	Chair of Business Manage	ement, Controlling	Faculty of Managem	nent 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	i i i i i i i i i i i i i i i i i i i			
1 semes	ster	undergraduate					
Conten	ts						
Content This cou Outline	t: urse of of sylla	fers an introduction to ai abus:	ms and methods of n	nanagerial accountin	ng (cost accounting).		
1. Mana 2. Mana 3. Differ 4. Cost 5. Job c 6. Cost 7. Budg 8. Cost 9. Cost	 Managerial accounting and financial accounting Managerial accounting: basic terms Different types of costs Cost centre accounting based on total costs Job costing based on total costs Cost centre accounting and job costing based on direct/variable costs Budgeting and cost-variance analysis Cost-volume-profit analysis Cost information and operating decisions 						
Reading Coenen Friedl/H (most re	g: berg/F lofman ecent e	ischer/Günther: Kostenro n/Pedell: Kostenrechnur ditions)	echnung und Kostena ng. Eine entscheidun	analyse, Stuttgart. gsorientierte Einführ	ung.		
Intende	ed learn	ning outcomes					
After completing the course "Management Accounting and Control", the students will be able to (i) set out the responsibilities of the company's internal accounting and control; (ii) define the central concepts of internal enterprise computing restriction and control and assign case studies the terms; (iii) apply the basic methods of internal corporate accounting and control on a full and cost base to idealized ca- se studies of medium difficulty that calculate relevant costs and benefits and take on this basis a reasoned deci- sion.							
Course	s (type	, number of weekly conta	ct hours, language –	- if other than Germa	n)		
V (2) +	Г (2)						
Method ster, inf	l of ass formati	essment (type, scope, la on on whether module ca	nguage — if other than be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-		
written examination (approx. 60 minutes)							
Allocati	ion of p	olaces					
840 pla (1) No re Manage (BSc wi as well (60 ECT allocate will be	Allocation of places840 places.(1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places						

 Bachelor's with 1 major Computer Science (2019)
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ready achieved in the respective degree subject; among applicants with the same number of ECTS credits achie-

ved, places will be allocated by lot. b) 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. c) Quota 3 (25 % of places): lottery. (4) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

Workload

150 h

Teaching cycle

Teaching cycle: summer semester

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

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Module appears in

Bachelor's degree (1 major) Computer Science (2015)

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Bachelor's degree (1 major) Computer Science (2017)

Bachelor's degree (1 major) Computer Science (2019)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019)

Bachelor's degree (1 major) Business Information Systems (2020)

Module title					Abbreviation		
Introdu	ction t	o Business Administrati	12-NW-EBWL-152-m	01			
Module	e coord	inator		Module offered by			
holder Finance	of the (Chair of Business Manag	ement and Corporate	Faculty of Managem	nent and Economics		
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						
This con moderr on and Outline	This course aims to provide non-specialist students with an overview of the structure and the ways of thinking of modern business administration. In this context, we will also apply selected conventional tools for the description and solution of problems in selected areas of the subject. Outline of syllabus						
1. What 2. Busin 3. Optir 4. Coop 5. Coord 6. Mark 7. Coord 8. Stak 9. Finar 10. Leg	 What is business? Business and its view of human beings Optimal decisions in business administration Cooperation benefits Coordination of conventional markets Market failure Coordination in companies Stakeholder value vs. shareholder value Financial implementation of shareholder value 						
Intende	ed learn	 ning outcomes					
After co tific dis techniq	ompleti cipline	ng the module, students in its institutional econ ed on the character of a	s should be able to de omic expression and t n orientation session.	scribe the modern b o master appropriat	usiness economics a e level in their proble	as a scien- em-solving	
Course	s (type.	number of weekly cont	act hours, language —	if other than Germa	n)		
V(2) + 1	<u> (</u>)	, <u>, , , , , , , , , , , , , , , , , , </u>			,		
Method ster, inf	l of ass formati	e essment (type, scope, la on on whether module c	anguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-	
written	examir	nation (approx. 60 minu	tes)				
Allocat	ion of p	olaces					
200 pla	aces (lo	ttery)					
Additio	nal info	ormation					
Worklo	ad						
150 h							
Teaching cycle							
Teaching cycle: every year, winter semester							
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module	appea	irs in					
Bachelo	or's deg or's deg	gree (1 major) Geograph gree (1 major) Computer	y (2015) Science (2015)				
Bachelor's	with 1 maj	or Computer Science (2019)	JMU Würzburg data record E	• generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. k - 2019	page 122 / 125	

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Bachelor's degree (1 major) Political and Social Studies (2015) Master's degree (1 major) Media Communication (2015) Master's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Computer Science (2017) Master's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) Media Communication (2019) Master's degree (1 major) Diversity management, religion and education (2019) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Geography (2023)

Module title					Abbreviation			
Introduction to Economics - Minor					12-NW-EVWL-152-m	01		
Module coordinator				Module offered by				
holder	of the (Chair of Monetary Econo	omics and Internatio-	Faculty of Managen	nent and Economics			
nal Fin	ancial I	Markets		raculty of managen				
ECTS	Meth	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						
Conter	Contents							
The co mers for econor ronme In addi cles (u fiscal p Intend	The course offers basic insights into the principles of economics. We analyse how markets work, i. e. how consumers form their demand and how suppliers make production decisions. On the basis of first insights into market economies, we analyse why governments might want to intervene. In this context, we focus on monopoly, environmental issues and minimum wages in labour markets. In addition to micro topics, we also focus on macroeconomic aspects and analyse why we observe business cycles (unemployment, inflation) and long term economic growth. We also address topics related to monetary and fiscal policy in the euro area.							
ships. on, ele	idents They ca mentar	have a basic knowledge an deal critically with cu y mathematical technic	e of economics , with w irrent economic policy ques for solving microp	nich they can analyz issues and make an ores and macroecon	independent judgm independent judgm	c relation- ent. In additi- ediated.		
Course	es (type	, number of weekly con	tact hours, language –	- if other than Germa	n)			
V (2) +	Ü (2)							
Metho ster, in	d of ass Iformat	sessment (type, scope, ion on whether module	language — if other tha can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-		
written	exami	nation (approx. 60 mini	utes)					
Allocat	tion of _l	places						
max. 2 Wirtsch schafts matik (oo plac haftswi sinform (Mathei	ces. Modules 12-NW-EB ssenschaft (Business N atik (Business Informat matics for Economics) E	WL and 12-NW-EVWL an lanagement and Econo ion Systems) Bachelor Bachelor's (BSc with 18	re not open for stude mics) Bachelor's (BS 's (BSc with 180 ECT o ECTS credits).	ents of the following Sc with 180 ECTS cre S credits) and Wirtso	subjects: dits), Wirt- :haftsmathe-		
Additio	onal inf	ormation						
Worklo	bad							
150 h								
Teachi	ng cycl	Δ						
Toachi	ng cycl	o, ovory voar winter ser	mostor					
Deferre		LOOL (avamination red	The ster					
Referre		LPUT (examination reg	gulations for teaching-o	legree programmes)				
Modul	e appea	ars in						
Bachel	or's de	gree (1 major) Geograph	ny (2015)					
Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Computer Science (2015)								
Bachelor's degree (1 major) Political and Social Studies (2015)								
Bachelor's degree (1 major) Computer Science (2017)								
Bachelor's degree (1 major) Computer Science (2019)								
Master's degree (1 major) Diversity management, religion and education (2019)								
Bachelor's degree (1 major) Political and Social Studies (2020)								
Bachel	lor's de	gree (1 major) Artificial	Intelligence and Data S	Science (2022)				
Bachelor's	with 1 ma	jor Computer Science (2019)	JMU Würzburg data record E	• generated 19-Apr-2025 • e Bachelor (180 ECTS) Informati	xam. reg. ik - 2019	page 124 / 125		



Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Geography (2023)