

Subdivided Module Catalogue for the Subject

Aerospace Computer Science

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

> Examination regulations version: 2014 Responsible: Institute of Computer Science

JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record 82|f25|-|-|H|2014



Course of Studies - Contents and Objectives

The Bachelor of Science in aerospace computer science combining theoretical and practical elements is the first degree level offered by the Department of Mathematics and Computer Science at the Julius Maximilian University of Würzburg.

The aim of this degree is to teach students the most important aspects of computer science, to understand the theory of algorithms and their application, to improve analytical skills, the ability to think in abstract terms and to structure complex problems as well as basic skills and scientific aspects from aerospace technology, mathematics, physics, and astronomy.

This bachelor program focuses on:

- 1. Well established and fundamental knowledge of facts and methods as well as on the development of thought processes necessary for computer science,
- 2. basic skills to understand, develop and program avionic systems for aerospace applications and 3. basic knowledge about aerospace operations and orbit mechanics.

This programme covers the theoretical aspects as well as enough practical experience by concept building, constructing and programming such systems.

Abbreviations used

Course types: \mathbf{E} = field trip, \mathbf{K} = colloquium, \mathbf{O} = conversatorium, \mathbf{P} = placement/lab course, \mathbf{R} = project, \mathbf{S} = seminar, \mathbf{T} = tutorial, $\ddot{\mathbf{U}}$ = exercise, \mathbf{V} = lecture

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

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

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

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

Conventions

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

Notes

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

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

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

In accordance with

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

ASP02009

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

24-Mar-2014 (2014-9)

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		Method of	naga
			grading	page
Thesis (12 ECTS credits)				
10-I-LRI-BA-141-m01	Bachelor Thesis Space- and Aerospace Computer Science	12	NUM	27
Compulsory Courses (130	ECTS credits)			
Aerospace (35 ECTS credi	its)			
10-I-ELRS-141-m01	Introducing to Aerospace Systems	6	NUM	19
10-I-LRBE-141-m01	Operations of Aerospace Systems	10	NUM	25
10-I-LRDN-141-m01	Dynamics of aerospace systems	6	NUM	26
10-I-BDV-141-m01	On board data processing	8	NUM	14
10-I-LMT-141-m01	Measurement Technique	5	NUM	24
Computer Science (56 EC	TS credits)			
10-I-ADSV-141-m01	Algorithm and data structures	5	NUM	9
10-I-ADST-141-m01	Tutorial Algorithm and data structures	5	B/NB	8
10-I-PP-141-m01	Practical Course in Programming	10	B/NB	34
10-I-MEC-141-m01	Introduction to Core Avionics Hardware	10	NUM	31
10-I-AR-141-m01	Automation and Control Technology	8	NUM	13
10-I-IÜV-141-m01	Information Transmission	5	NUM	23
10-I-IÜT-141-m01	Tutorial Information Transmission	5	B/NB	22
10-I-HMR-141-m01	Practical Measurement and Control System Engineering	8	B/NB	20
Mathematics (20 ECTS cr	edits)			
10-M-I PI1-1/1-m01	Mathematics 1 for students of Space- and Aerospace Computer	10	NILIM	16
10-11-141-1101	Science	10	NOM	40
10-M-I RI2-141-m01	Mathematics 2 for students of Space- and Aerospace Compu-	10	NUM	47
	ter Science	10		47
Basics of Physics (19 ECT	S credits)			
11-ENNF1-062-m01	Introduction to Physics Part 1 for students of Physics Related	7	NUM	51
	Minor Subjects	/		ļ
11-ENNF2-062-m01	Introduction to Physics Part 2 for students of Physics Related	7	NUM	52
	Minor Subjects	,		
11-P-PA-092-m01	Practical Course A	5	B/NB	55
Compulsory Electives (18 E	CTS credits)			
10-l-EinP-141-m01	Introduction to Programming	5	NUM	18
10-l-AGT-141-m01	Algorithmic Graph Theory	5	NUM	10
10-I-WBS-141-m01	Knowledge-based Systems	5	NUM	43
10-I-DM-141-m01	Data Mining	5	NUM	17
10-l-00P-141-m01	Object oriented Programming	5	NUM	32
10-I-TIV-141-m01	Theoretical Informatics	5	NUM	42
10-I-TIT-141-m01	Tutorial Theoretical Informatics	5	B/NB	41
10-I-RALV-141-m01	Digital computer systems	5	NUM	37
10-I-RALT-141-m01	Tutorial Digital computer systems	5	B/NB	36
10-I-RAK-141-m01	Computer Architecture	5	NUM	35
10-I-STV-141-m01	Software Technology	5	NUM	40
10-I-STT-141-m01	Tutorial Software Technology	5	B/NB	39

Bachelor's with 1 major Aerospace Computer
Science (2014)

10-I-RK-141-m01	Computer Networks	8	NUM	38
10-I-HWP-141-m01	Practical course in hardware	10	B/NB	21
10-l=RO-141-m01	Robotics	8	NUM	6
10-M-DGLaf-141-m01	Ordinary Differential Equations for students of other subjects	10	NUM	45
10-M-NM1af-141-m01	Numerical Mathematics 1 for students of other subjects	10	NUM	48
10-M-NM2af-141-m01	Numerical Mathematics 2 for students of other subjects	10	NUM	49
10-M=ARTH-141-m01	Introduction to Control Theory	10	NUM	44
10-I-AKLR-141-m01	Selected Chapters of Aerospace Science and Engineering	5	NUM	12
10-I-AKI-141-m01	Selected Chapters of Computer Science	5	NUM	11
10-l-3D-141-m01	3D Point Cloud Processing	5	NUM	7
10-I-DB-141-m01	Data Bases	5	NUM	16
10-I-BS-141-m01	Operating Systems	5	NUM	15
11-A4-141-m01	Astrophysics	6	NUM	50
11-P-LRB-141-m01	Laboratory Course Physics B for Space- and Aerospace Compu- ter Science		B/NB	53
11-P-LRC-141-m01	11-P-LRC-141-mo1 Laboratory Course Physics C for Space- and Aerospace Compu- ter Science		B/NB	54
Subject-specific Key Skil	ls (17 ECTS credits)			
10-I-LRLA-141-m01	Aerospace Laboratory	5	NUM	28
10-I-LRS1-141-m01	10-I-LRS1-141-m01 Science 1 Science 1		NUM	29
10-I-LRS2-141-m01 Seminar for students of Space- and Aerospace Computer Science 2		5	NUM	30
10-I-PLR-141-m01	Practical work	2	B/NB	33

Module title			Abbreviation		
Robotics				10-I=RO-141-m01	
Module	coord	inator		Module offered by	
holder	of the C	hair of Computer Scienc	e VII	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
8	numei	rical grade	-		
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
History, applications and properties of robots, direct kinematics of manipulators: coordinate systems, rotations, homogenous coordinates, axis coordinates, arm equation. Inverse kinematics: solution properties, end effector configuration, numerical and analytical approaches, examples of different robots for analytical approaches. Workspace analysis and trajectory planning, dynamics of manipulators: Lagrange-Euler model, direct and inverse dynamics. Mobile robots: direct and inverse kinematics, propulsion system, tricycle, Ackermann steering, holonomes and non-holonome restrictions, kinematic classification of mobile robots, posture kinematic model. Movement control and path planning: roadmap methods, cell decomposition methods, potential field methods. Sensors: position sensors, speed sensors, distance sensors. Intended learning outcomes The students master the fundamentals of robot manipulators and vehicles and are, in particular, familiar with their kinematics and dynamics as well as the planning of paths and task execution. Courses (type, number of weekly contact hours, language — if other than German)					
V + U (r	io infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)
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 written oral exa Langua	examir examir aminati ge of a	nation (approx. 60 to 120 nation can be replaced by on in groups (groups of 2 ssessment: German, Eng	minutes); if annound / an oral examination e, approx. 30 minutes lish	ed by the lecturer at of one candidate ea)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Workload					
Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module	e appea	rs in			
Bachelo	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title			Abbreviation		
3D Point Cloud Processing				10-l-3D-141-m01	
Module	e coord	inator		Module offered by	
holder	of the (Chair of Computer Scienc	e XVII	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				
Laser s d trees, mappir	cannin , regist 1g.	g, Kinect and camera mo ration, features, segment	dels, basic data struc ation, tracking, appli	tures (lists, arrays, c cations for airborne	oc-trees), calculating normals, k- mapping, applications to mobile
Intende	ed lear	ning outcomes			
Studen munica data pr require	ts unde ite with ocessii ments,	erstand the fundamental engineers / surveyors / ng and have experienced in terms of memory requ	principles of all aspe CV people / etc. Stud that real application irements and in term	cts of 3D point cloud ents are able to solv scenarios are challe s of implementation	d processing and are able to com- ve problems of modern sensor enging in terms of computational issues.
Course	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)
V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Methoo ster, in	l of ass formati	sessment (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 written oral exa Langua	examii examii aminat ge of a	nation (approx. 60 to 120 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ced by the lecturer at of one candidate ea ;)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Computer Science (2014)					
Bachel	or' deg	ree (1 major) Mathematic	s (2014)		
Bachel	or' deg	ree (1 major) Computation	nal Mathematics (20:	14)	
Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title			Abbreviation		
Tutorial Algorithm and data structures			10-I-ADST-141-m01		
Module	e coord	inator		Module offered by	
Dean of	f Studi	es Informatik (Computer S	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Design ta types	and ar s, lists,	alysis of algorithms, recu trees, graphs, basic grap	ursion vs. iteration, so h algorithms, progra	ort and search metho mming in Java.	ods, data structures, abstract da-
Intende	ed lear	ning outcomes			
The stu student program	dents a ts are f ns. The s (type	are able to independently amiliar with the basic par e students are able to esti , number of weekly conta	v design algorithms a radigms of the desigr imate the run-time be ct hours, language —	s well as to precisely of algorithms and a chaviour of algorithm if other than Germa	y describe and analyse them. The are able to apply them in practical as and to prove their correctness. n)
U (no ir	nformat	tion on SWS (weekly cont	act hours) and cours	e language available	2)
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-
a) comp correctl candida	oletion ly) or bj ate.	of approx. 11 exercise sh) written examination (ap	eets with approx. 4 e prox. 180 to 240 min	xercises per sheet (utes). Method of ass	50% of exercises to be completed sessment to be selected by the
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	וס כערו	A			
	-5 cycl	<u>.</u>			
Poforro	d to in	IPOL (examination regu	lations for teaching	legree programmes)	
Referred to in LFOT (examination regulations for teaching-degree programmes)					
module appears in					
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014)					
Bachelo	or' deg	ree (1 major) Computation	nal Mathematics (20:	14)	
Bachelo	or' deg	ree (1 major) Aerospace (Computer Science (20	014)	

Module title			Abbreviation		
Algorithm and data structures			10-I-ADSV-141-m01		
Module	coord	inator		Module offered by	
Dean of	fStudie	es Informatik (Computer S	Science)	Institute of Compute	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 semes	ster	undergraduate			
Conten	ts				
Design ta types	and an 5, lists,	alysis of algorithms, recu trees, graphs, basic grap	ursion vs. iteration, so h algorithms, progra	ort and search metho mming in Java.	ods, data structures, abstract da-
Intende	ed learr	ning outcomes			
The stu student progran	dents a ts are fa ns. The	are able to independently amiliar with the basic par students are able to esti	design algorithms a radigms of the desigr mate the run-time be	s well as to precisely of algorithms and a chaviour of algorithm if other than Germa	y describe and analyse them. The able to apply them in practical as and to prove their correctness.
V (no in	format	ion on SWS (wookly conta	act hours) and course)
Method ster, inf written written oral exa	l of ass formati examir examir aminati	essment (type, scope, la on on whether module ca nation (approx. 60 to 120 nation can be replaced by on in groups (groups of 2	nguage — if other tha an be chosen to earn minutes); if annound / an oral examination 2, approx. 30 minutes	an German, examina a bonus) ced by the lecturer at of one candidate ea s)	tion offered — if not every seme- t the beginning of the course, the ach (approx. 20 minutes) or an
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title			Abbreviation		
Algorithmic Graph Theory					10-I-AGT-141-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Computer Scienc	e l	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				
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.					ximal flows, find matchings and loogle works. Using the examples w we model problems as linear
Intende	ed learı	ning outcomes			
The stu cipants course,	dents a are ab stude	are able to model typical le to decide which tool fr nts learn in detail how to	problems in compute om the course helps estimate the run time	er science as graph p solve a given graph e of given graph algo	problems. In addition, the parti- problem algorithmically. In this prithms.
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
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	an German, examina a bonus)	tion offered — if not every seme-
written written oral exa Langua	examin examin aminat ge of a	nation (approx. 60 to 120 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ed by the lecturer at of one candidate ea)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Computer Science (2014)					
Bachel	or' deg	ree (1 major) Mathematic	s (2014)		
Bachel	or' deg	ree (1 major) Computatio	nal Mathematics (201	14)	
Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title				Abbreviation	
Selected Chapters of Computer Science				10-I-AKI-141-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	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Selecte	ed topic	s in computer science.			
Intende	ed learı	ning outcomes			
The stu them to	idents a p relate	are able to understand th d questions.	e solutions to comple	ex problems in comp	outer science and to transfer
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
1) Ü + V	no infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
Metho ster, in	d 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-
written written oral exa Langua	examii examii aminati ige of a	nation (approx. 60 to 120 nation can be replaced by on in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ed by the lecturer at of one candidate ea)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title			Abbreviation		
Selected Chapters of Aerospace Science and Engineering			10-I-AKLR-141-m01		
Module	coord	inator		Module offered by	
holder	of the (Chair of Computer Scienc	e VII	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 semes	ster	undergraduate			
Conten	ts				
Selected topics in aerospace engineering, for example: satellite communication, rocket science, propulsion sy- stems, sensors and actuators for orientation control, perturbation of orbits, interplanetary orbits, rendezvous and docking, design of space ships, design of planetary bases, life support systems, special aspects of opera- tions, payloads, optical systems, RADAR, earth monitoring, thermo management, structure of space ships, spe- cial areas of navigation, space environment, environment simulation, verification and test of space faring sy- stems, space astronomy and planet missions, space medicine and biology, material science, quality manage- ment_space law					
Intende	ed leari	ning outcomes			
The stu conside	dents µ er these	possess an advanced kno e foundations in their futi	owledge about the reauter of a space of the second se	spective topic of the aceborne systems.	selected area and are able to
Courses	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)
V + Ü (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Method ster, inf	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 written oral exa Langua	examii examii aminati ge of a	nation (approx. 60 to 120 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ced by the lecturer at of one candidate ea s)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
		(
Module	appea	urs in			

Bachelor' degree (1 major) Aerospace Computer Science (2014)

Module title				Abbreviation	
Automation and Control Technology					10-I-AR-141-m01
Module	e coordina	ator		Module offered by	
holder	of the Ch	air of Computer Science	e VII	Institute of Comput	er Science
ECTS	Method	of grading	Only after succ. com	pl. of module(s)	
8	numeric	al grade			
Duratio	n M	Nodule level	Other prerequisites		
1 seme	ster u	ndergraduate			
Conten	ts				
Overvie differer structur sistent stems,	ew of auto ntial equa re images control d eigenvalu	omation systems, found ations, nomenclature, tr s and structure image re leviation, controller des ue based system analys	lations of control tec ransfer function, step eduction, locus curve ign through paramet sis, classification of a	hnology, simple des response and realis s and Bode diagram er optimisation, bas automation and cont	ign methods, model creation, sing of easy linear controllers, is, frequency characteristic, per- ics of fuzzy control, scanning sy- crol systems, examples.
Intende	ed learnin	ng outcomes			
The stu	dents ma	aster the fundamentals	of automation and co	ontrol.	
Course	s (type, n	umber of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no inform	ation on SWS (weekly c	contact hours) and co	urse language availa	able)
Method ster, inf	d of asses formation	ssment (type, scope, la n 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 written oral exa Langua	examinat examinat aminatior ge of ass	tion (approx. 60 to 120 tion can be replaced by n in groups (groups of 2 sessment: German, Eng	minutes); if annound an oral examination a approx. 30 minutes lish	ed by the lecturer at of one candidate ea)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of pla	ices			
Additio	nal inform	mation			
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appears	; in			
Bachelo	or' degree	e (1 major) Aerospace C	omputer Science (20	14)	

Module title			Abbreviation		
On board data processing			10-I-BDV-141-m01		
Module	e coord	inator		Module offered by	
holder	of the (Chair of Computer Scienc	e VIII	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
8	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Tasks o on into prograr plicatio	of onbo hardw nming, ons, ha	ard data handling system are and software tasks, s real-time operating syste rdware support.	ns (ODHS), componer ystem architecture, te ems, typical onboard	nts of ODHS, interfac opologies, reliable s software applicatior	es to other subsystems, divisi- ystems, fault tolerance, real-time ns, implementing of example ap-
Intende	ed lear	ning outcomes			
The stu connec system	dents (tions a s them	understand what the task nd dependencies with ar selves.	s of ODHS are and he nd from other subsyst	ow they are impleme tems. They are able t	ented. They understand the to implement and control such
Course	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)
V + Ű (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Methoo ster, in	l of ass formati	sessment (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 hours e	examiı each), v	nation (approx. 120 minu veighted 1:1	tes) and approx. 6 pr	actical exercises (ap	prox. 6 exercises, approx. 4
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	ars in			
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title					Abbreviation
Operat	Operating Systems 10-I-BS-141-m01				
Module	e coord	inator		Module offered by	
holder	of the (Chair of Computer Scienc	e ll	Institute of Comput	er Science
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	ster	undergraduate			
Conten	ts				
Introdu sing in ry mana	operat ageme	o computer systems, dev ing systems, processes a nt, device and file manag	elopment of operatin nd threads, CPU sche ement, operating sys	g systems, architect eduling, synchronisa tem virtualisation.	ure principles, interrupt proces- tion and communication, memo-
Intende	ed lear	ning outcomes			
The stu	dents	possess knowledge and p	practical skills in buil	ding and using esse	ntial parts of operating systems.
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
Method ster, in	d 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 written oral exa Langua	examii examii aminat ge of a	nation (approx. 60 to 120 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ed by the lecturer a of one candidate ea)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachel	or' deg	ree (1 major) Computer S	cience (2014)		
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

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) 5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Relational algebra and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off	viation				
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) 5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Relational algebra and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off	B-141-m01				
Dean of Studies Informatik (Computer Science) Institute of Computer Science) ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Contents and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assesment (type, scope, language — if other than German, examination off					
ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Relational algebra and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off	nce				
5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Relational algebra and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off					
DurationModule levelOther prerequisites1 semesterundergraduateContentsRelational algebra and complex SQL statements; database planning and normal forms; ment.Intended learning outcomesThe students possess knowledge about database modelling and queries in SQL as wellCourses (type, number of weekly contact hours, language — if other than German)V + Ü (no information on SWS (weekly contact hours) and course language available)Method of assessment (type, scope, language — if other than German, examination off					
1 semester undergraduate Contents Relational algebra and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off					
Contents Relational algebra and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off					
Relational algebra and complex SQL statements; database planning and normal forms; ment. Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off					
Intended learning outcomes The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off	; transaction manage-				
The students possess knowledge about database modelling and queries in SQL as well Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off					
Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off	l as transactions.				
V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination off					
Method of assessment (type, scope, language — if other than German, examination off					
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 can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English					
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Business Information Systems (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title				Abbreviation	
Data Mining					10-I-DM-141-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Computer Scienc	e VI	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				
Founda model, methoc SVM), l	tions i relatio ls (clus earning	n the following areas: def nship to data warehouse ster and association meth g methods for special dat	inition of data mining and OLAP, data prep oods), supervised lea a types, other learnir	g and knowledge, di rrocessing, data visu rning (e.g. Bayes cla ng paradigms.	scovery in databases, process alisation, unsupervised learning assification, KNN, decision trees,
Intende	ed lear	ning outcomes			
The stu ta minin the kno or impl	dents ng and wledge ementa	possess a theoretical and machine learning. They a e acquired in this course ation of data mining algo	l practical knowledge are able to solve prac and by using the KDE rithms.	e of typical methods tical knowledge disc) process. They have	and algorithms in the area of da- overy problems with the help of acquired experience in the use
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Methoo ster, inf	l of ass formati	sessment (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 written oral exa Langua	examii examii aminat ge of a	nation (approx. 60 to 120 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ced by the lecturer at of one candidate ea s)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ıg cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachel	or' deg	ree (1 major) Computer S	cience (2014)		
Bachel	or' deg	ree (1 major) Business In	formation Systems (2	014)	
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title				Abbreviation	
Introduction to Programming					10-I-EinP-141-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Computer Science	e ll	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				
Data ty ject orie	pes, co entatio	ntrol structures, foundati n in Java, selected topics	ions of procedural pro of C++, further Java c	ogramming, selected concepts, digression	topics of C, introduction to ob- : scripting languages.
Intende	ed leari	ning outcomes			
The stu and are	dents p able t	oossess a fundamental k o independently develop	nowledge about prog average to high level	ramming languages I Java programs.	(in particular Java, C and C++)
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
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	an German, examina a bonus)	tion offered — if not every seme-
written written oral exa	examiı examiı aminati	nation (approx. 60 to 120 nation can be replaced by on in groups (groups of 2	minutes); if annound / an oral examination 2, approx. 30 minutes	ced by the lecturer at of one candidate ea ;)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces		·	
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachel	or' deg	ree (1 major) Computer So	cience (2014)		
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title					Abbreviation
Introducing to Aerospace Systems					10-I-ELRS-141-m01
Module	coord	inator		Module offered by	
Dean of	fStudie	es Informatik (Computer S	Science)	Institute of Compute	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
6	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
2 seme	ster	undergraduate			
Conten	ts				
History space a tions of on prop	of space of	ce flight, carrier rockets, o tions, foundations of sub ft aerodynamics, flight sta and suitable material.	orbits of spacecraft, e systems of spacecra ability, airplane techr	environment condition ft. Introduction to av nology and structure	ons in space, special aspects of iation systems, physical founda- of aircraft, foundations of aviati-
Intende	ed learn	ning outcomes			
The stu correctl culatior	dents p y ident 1s for s	possess the theoretical a ify the most important sy elected basic system ele	nd practical knowled vstem relationships, f ments.	ge necessary to corre formulate requirement	ectly classify aerospace systems, nts for new systems and do cal-
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü +	V + Ü (no information on SWS (v	weekly contact hours)) and course languag	ge available)
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 the writ an oral	examir ten exa examir	nation (approx. 180 to 24 amination can be replace nation in groups (groups	o minutes); if annour d by an oral examina of 2, approx. 30 minu	nced by the lecturer a tion of one candidat Ites)	at the beginning of the course, e each (approx. 20 minutes) or
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelo	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title					Abbreviation
Practic	Practical Measurement and Control System Engineering				10-I-HMR-141-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Computer Scienc	e VI	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
8	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Practic linear c	al expe controll	riments of control aspect ers in robotics or aerospa	s (hardware and soft ace information techr	ware), for example in nology.	mplementation of linear and non-
Intende	ed learı	ning outcomes			
Studen	its unde	erstand closed loop syste	ems and are able to ir	nplement and set co	ontrollers.
Course	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	ın)
P (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
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-
project	assign	ment with presentation (approx. 15 minutes) a	and written elaborati	ion (approx. 12 to 15 pages)
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	014)	

Module title					Abbreviation
Practical course in hardware 10-I-HWP-141-m01					10-I-HWP-141-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)	
10	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Practica a comp	al expe olete mi	riments on hardware asp croprocessor.	ects, for example in o	communication tech	nology, robots or the structure of
Intende	ed learı	ning outcomes			
The stu scriptic results.	idents a ons, to i	are able to independently independently search for	review, prepare and additional information	perform experiment on as well as to docu	s with the help of experiment de- iment and evaluate experiment
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (no ir	nformat	ion on SWS (weekly cont	act hours) and course	e language available)
Methoo 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-
project results	portfol (appro	io: completion of approx x. 10 minutes per project)	. 3 to 10 project assig)	nments (approx. 250	o hours total) and presentation of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachel	or' deg	ree (1 major) Computer S	cience (2014)		
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title	Abbreviation				
Tutorial Information Transmission			10-I-IÜT-141-m01		
Module coordinator		Module offered by			
holder of the Chair of Computer Sci	nce III	Institute of Comput	er Science		
ECTS Method of grading	Only after succ. con	npl. of module(s)			
5 (not) successfully complete	d				
Duration Module level	Other prerequisites	i			
1 semester undergraduate					
Contents					
Introduction to probability calculus, theory, spectrum and Fourier transfe duction to the structure of compute	coding theory, coding f orm, modulation technic networks, communicat	or fault detection and que, structure of digit ion protocols.	d fault correction, information tal transmission systems, intro-		
Intended learning outcomes					
The students possess a technical, t transmission, a knowledge that is n	neoretical and practical ecessary to understand	knowledge of the str these systems.	ucture of systems for information		
Courses (type, number of weekly co	ntact hours, language –	- if other than Germa	n)		
Ü (no information on SWS (weekly c	ontact hours) and cours	e language available	2)		
Method of assessment (type, scope ster, information on whether modul a) completion of approx. 11 exercise correctly) or b) written examination	, language — if other the e can be chosen to earn sheets with approx. 4 e (approx. 180 to 240 min	an German, examina a bonus) exercises per sheet (e utes). Method of ass	tion offered — if not every seme- 50% of exercises to be completed sessment to be selected by the		
candidate.					
Additional information					
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title				Abbreviation		
Information Transmission					10-I-IÜV-141-m01	
Module	coord	inator		Module offered by		
holder	of the C	Chair of Computer Science	e III	Institute of Compute	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 semes	ster	undergraduate				
Conten	ts					
Introdu theory, duction	ction to spectro to the	o probability calculus, co um and Fourier transform structure of computer ne	ding theory, coding fo , modulation techniq tworks, communicat	or fault detection and ue, structure of digit ion protocols.	d fault correction, information al transmission systems, intro-	
Intende	ed learn	ning outcomes				
The stu transmi	dents p ission,	possess a technical, theo a knowledge that is nece	retical and practical ssary to understand	knowledge of the str these systems.	ucture of systems for information	
Courses	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V (no in	format	ion on SWS (weekly cont	act hours) and course	e language available)	
Method ster, inf	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 written oral exa	examir examir aminati	nation (approx. 60 to 120 nation can be replaced by ion in groups (groups of 2	minutes); if annound an oral examination an approx. 30 minutes	ced by the lecturer at of one candidate ea s)	the beginning of the course, the ach (approx. 20 minutes) or an	
Allocati	ion of p	olaces		·		
Additio	nal infe	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor' degree (1 major) Computer Science (2014)						
Bachelo	Bachelor' degree (1 major) Mathematics (2014)					
Bachelo	or' deg	ree (1 major) Computation	nal Mathematics (201	14)		
Bachelo	Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title					Abbreviation
Measurement Technique					10-I-LMT-141-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)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Definitions of terms, units of measurement, fundamental measurement techniques, sensitivity of analogue and digital measurement devices, measurement errors and measurement uncertainty, error kinds, error propagation, measurement uncertainty, measurement of electric values, voltage and current measurement, power measurement, resistance measurement (effective resistance and reactance), measurement bridge, influence of ground and stray capacitance, noise effects, dynamic behaviour of electrical systems, sensors and measurement techniques for: pressure, length, angle, temperature, sensors for optical measurements, force and acceleration, angular acceleration, measurement, display of time dependence of electrical signals, computer-aided measurement recording, inertial navigation with inertial sensors, acceleration sensors, rotation (gyroscope), Coriolis angular sensor, position measurement using satellite navigation (GPS/GALILEO). Intended learning outcomes The students master the fundamentals of measurement for aerospace systems and for applications in robotics and automation.					
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
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-
written the writ an oral	examir tten exa examir	nation (approx. 180 to 24 amination can be replace nation in groups (groups	o minutes); if annour d by an oral examina of 2, approx. 30 minu	nced by the lecturer a tion of one candidat tes)	at the beginning of the course, re each (approx. 20 minutes) or
Allocal		naces			
 Additio	nalinf	ormation			
Auditio	natill	uniation			
Worklo					
Teaching cycle					
Performed to in LPO L (examination regulations for teaching degree programmes)					
Neigheu to in LEO I (examination regulations for leaching-degree programmes)					
Module	annes	in in			
Bachel	or' deg	ree (1 major) Aerospaco (omputer Science (20	14)	
Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title		Abbreviation			
Operations of A	10-I-LRBE-141-m01				
Module coordi	nator		Module offered by		
Dean of Studie	s Informatik (Computer	Science)	Institute of Comput	er Science	
ECTS Metho	d of grading	Only after succ. com	pl. of module(s)		
10 numeri	ical grade				
Duration	Module level	Other prerequisites			
1 semester	undergraduate				
Contents					
Basic functiona control centres standards, plar	alities and basic elemen , communication metho nning systems, operatin	ts of the operation of ds and systems, tran g procedures, flight n	air and space vehic smission path balan nanuals, telemetry a	les, ground station, structure of ice, transmission and operating nd telecommando systems.	
Intended learn	ing outcomes				
The students p systems in air a new systems a space vehicles	ossess the theoretical a and space vehicles, ider nd develop the complete in the ground segment.	nd practical knowled tify the most importa e system as well as ir	ge necessary to corre ant system relationsh adividual system eler	ectly classify systems to operate nips, formulate requirements for ments for the operation of air and	
Courses (type,	number of weekly conta	ct hours, language —	if other than Germa	n)	
V + Ü (no inforr	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)	
Method of assester, informatic	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 examin the written exa an oral examin	ation (approx. 180 to 24 mination can be replace ation in groups (groups	o minutes); if annour d by an oral examina of 2, approx. 30 minu	nced by the lecturer a tion of one candidat ites)	at the beginning of the course, re each (approx. 20 minutes) or	
Allocation of p	laces				
Additional info	ormation				
Workload					
Pafarrad to in LPO L (avamination regulations for teaching degree programmes)					
Referred to In LPOT (examination regulations for teaching-degree programmes)					
Nodule appear		ia manutan Calanaa (
Bachelor degre	ee (1 major) Aerospace (computer Science (20	014)		

Module title					Abbreviation
Dynamics of aerospace systems 10-I-LRDN-141-m01					10-I-LRDN-141-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)	
6	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Founda body pi through	itions o roblem 1 obser	f orbital dynamics and or , identification of classica vation (Laplace method),	rientation dynamics o al orbit elements fron , identification of orie	of air and space vehi n initial conditions, i entation data, rocket	cles, spherical trigonometry, two- dentification of orbit elements lift-off trajectory.
Intende	ed learr	ning outcomes			
Unders in air ai tion sys	tanding nd spac stems.	g of fundamental method ce travel. Skills to apply t	s for acquisition, pro he acquired knowled	cessing and control ge in development a	of orbit and orientation systems and analysis of orbit and orienta-
Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
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	an German, examina a bonus)	tion offered — if not every seme-
written the writ an oral	examir tten exa examir	nation (approx. 180 to 24 amination can be replace nation in groups (groups	o minutes); if annou d by an oral examina of 2, approx. 30 minu	nced by the lecturer tion of one candidat ites)	at the beginning of the course, are each (approx. 20 minutes) or
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	irs in			
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title Abbreviation				Abbreviation		
Bachelor Thesis Space- and Aerospace Computer Science 10-I-LRI-BA-141-m01					10-I-LRI-BA-141-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)		
12	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Resear and ad	ching a hering	nd writing on a defined p to the principles of good	roblem in aerospace scientific practice.	information technol	ogy within a given time frame	
Intende	ed learr	ning outcomes				
The stu to the p	dents a principl	are able to research and v es of good scientific prac	write on a defined pro tice.	oblem in aerospace i	information technology, adhering	
Course	s (type,	, number of weekly conta	ct hours, language —	- if other than Germa	n)	
C (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
Methoo 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-	
written Langua	thesis ge of a	(approx. 30 to 60 pages) ssessment: German, Eng	lish			
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)					

Module title			Abbreviation			
Aerospace Laboratory				10-I-LRLA-141-m01		
Module	coord	inator		Module offered by		
holder	of the C	Chair of Computer Science	e VIII	Institute of Compute	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 semes	ster	undergraduate				
Conten	ts					
Structur stems, s ground of air ar mechar Intende The stur electror a develo mentati	Structure and control of satellites and airplanes, control and (very little) regulation of physical/mechanical sy- stems, sensors and actuators, energy, structure (construction) of a satellite model/simulator, construction of a ground segment for different components and systems of air and space flight, structure of simplified subsystems of air and space flight. Life cycle of a complex development consisting of software, hardware, electronics and mechanics. Selection of suitable components. Intended learning outcomes The students will be able to construct and integrate prototypical subsystems consisting of software, hardware, electronics and mechanics by themselves as well as to operate, test and document these. The whole life cycle of a development will be tested: capture of requirements, rudimentary design, detailed design, modelling, imple- mentation (software, bardware, mechanics) test design inspection maintenance.					
del. Courses	s (type,	, number of weekly conta	ct hours, language —	· if other than Germa	n)	
V + Ü (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)	
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	an German, examina a bonus)	tion offered — if not every seme-	
comple	tion of	approx. 6 practical exerc	ises (approx. 4 hours	s each)		
Allocati	ion of p	olaces				
Additio	nal info	ormation				
Workloa	ad					
Teachin	Teaching cycle					
	-					
Referre	d to in	LPO I (examination regu	lations for teaching-c	legree programmes)		
Module	appea	irs in				
Bachelo	or' degi	ree (1 major) Aerospace (Computer Science (20	014)		

Module title				Abbreviation	
Seminar for students of Space- and Aerospace Computer Science 1				cience 1	10-I-LRS1-141-m01
Modul	e coord	inator		Module offered by	
holder	of the C	Chair of Computer Scienc	e VII	Institute of Comput	er Science
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			
Conter	nts				
Indepe softwa from di	endent r re with ifferent	eview of a current topic i written and oral presenta areas (this usually mean	n aerospace informat ition or video. The top s that they are assigr	ion technology base pics in modules 10-I- ned by different lectu	ed on literature and, if applicable, LRS1 and 10-I-LRS2 must come urers).
Intend	ed learr	ning outcomes			
The stu se the	udents a main as	are able to independently spects in written form and	review a current top to orally present the	ic in aerospace infor ese in an appropriate	mation technology, to summari- e way.
Course	s (type,	number of weekly conta	ct hours, language —	if other than Germa	n)
S (no ii	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	e)
Metho ster, in	d 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-
talk (aj 20 min	pprox. 3 iutes)	o to 45 minutes) and wri	tten elaboration (app	prox. 5 to 10 pages) o	or film (running time approx. 15 to
Allocat	tion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Modul	Module appears in				
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Seminar for students of Space and Aerospace Computer Science 2 10-1-LRS2-141-m01 Module criteriator Module offered by hold= of the chair of Computer Science VII Institute of Computer Science ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade Other precedisites Independent graduate Independent review of a current topic in aerospace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS1 and 10-1-LRS2 must come from different areas (this usually means that they are assigned by different lecturers). Intended Earlier To areaspace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS1 and 10-1-LRS2 must come from different areas (this usually means that they are assigned by different lecturers). Intended Earlier To areaspace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS2 must come from different areas (this usually means that they are assigned by different lecturers). Intended Earlier To areaspace information technology, to summarise the main aspects in written form and to orally present these in an appropriate way. Consetting to a spane consetting transprecision offered - if not every semester, information on whether m	Module title Abbreviation				Abbreviation	
Module coordinator Module offered by holder of the Chair of Computer Science VII Institute of Computer Science ECTS Method of grading Only after succ. compl. of module(s) 5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Independent review of a current topic in aerospace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS2 number of the students are able to independently review a current topic in aerospace information technology, 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 (no information on SWS (weekly contact hours) and course language available) Method 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) Iak (aprox, 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes)	Seminar for students of Space- and Aerospace Computer So				ience 2	10-I-LRS2-141-m01
hole r = Institute of Computer Science ECTS N=H=rescience Paralise 5 n===rescience Paralise 5 Modue level Othy after succ. compl. of module(s) 5 memory and server	Module	e coord	inator		Module offered by	
ECTS In the standard sequence of the standard sequ	holder	of the C	Chair of Computer Scienc	e VII	Institute of Comput	er Science
5 numerical grade Duration Module level Other prerequisites 1 semester undergraduate Conters Indergraduate Indergraduate Software with written and oral presentation or video. The topics in modules 10-1-LRS1 and 10-1-LRS2 must come from different areas (this usually means that they are assigned by different lecturers). Interderection and 10-1-LRS2 must come from different areas (this usually means that they are assigned by different lecturers). Interderection area ble to independently review a current topic in aerospace information technology, to summarises the main aspects in written form and to orally present these in an appropriate way. Coursection on SWS (weekly contact hours) and curse language available) Method of assessment (type, scope, language — if other than German) S (no information on Wether module can be chosen to earn a bonus) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 commuteres) Addictoration	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
Duration Module level Other prerequisites 1 semester undergraduate Contents Independent review of a current topic in aerospace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS1 and 10-1-LRS2 must come from different areas (this usually means that they are assigned by different lecturers). Intended lear	5	nume	rical grade			
1 semester undergraduate Contents Independent review of a current topic in aerospace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS1 and 10-1-LRS2 must come from different 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 aerospace information technology, to summarise the main aspects in written form and to orally present these in an appropriate way. Courses (type, number of weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German) S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Additional information Feerred to in LPO 1 (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Duratio	on	Module level	Other prerequisites		
Contents Independent review of a current topic in aerospace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS1 and 10-1-LRS2 must come from different 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 aerospace information technology, 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 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Additional information Additional information Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bacchelor' degree (1 major) Aerospace Computer Science (2014)	1 seme	ster	undergraduate			
Independent review of a current topic in aerospace information technology based on literature and, if applicable, software with written and oral presentation or video. The topics in modules 10-1-LRS1 and 10-1-LRS2 must come from different 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 aerospace information technology, to summari- se 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 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on SWS (weekly contact hours) and course language available) Allocation of places Allocation of places Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Conten	ts				
Intended learning outcomes The students are able to independently review a current topic in aerospace information technology, 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 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Indepe softwa from di	ndent r re with ifferent	eview of a current topic i written and oral presenta areas (this usually mean	n aerospace informat ition or video. The top s that they are assigr	ion technology base bics in modules 10-I- hed by different lectu	ed on literature and, if applicable, LRS1 and 10-I-LRS2 must come urers).
The students are able to independently review a current topic in aerospace information technology, to summari- se 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 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Intende	ed learr	ning outcomes			
Courses (type, number of weekly contact hours, language — if other than German) S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme-ster, information on whether module can be chosen to earn a bonus) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	The stu se the i	ıdents a main as	are able to independently spects in written form and	review a current top d to orally present the	ic in aerospace infor ese in an appropriate	rmation technology, to summari- e way.
S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	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) talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO 1 (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	S (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	e)
talk (approx. 30 to 45 minutes) and written elaboration (approx. 5 to 10 pages) or film (running time approx. 15 to 20 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	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-
Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	talk (ap 20 min	oprox. 3 utes)	30 to 45 minutes) and wri	tten elaboration (app	rox. 5 to 10 pages) o	or film (running time approx. 15 to
Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Allocat	ion of p	olaces			
Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Rodule appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)						
 Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Additio	onal info	ormation			
Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)						
Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Worklo	ad				
Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)						
Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)						
Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)	Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module appears in Bachelor' degree (1 major) Aerospace Computer Science (2014)						
Bachelor' degree (1 major) Aerospace Computer Science (2014)	Module	Module appears in				
	Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	14)	

Module title				Abbreviation		
Introduction to Core Avionics Hardware 10-I-MEC-141-r				10-I-MEC-141-m01		
Module	e coord	inator		Module offered by		
holder	of the (Chair of Computer Scienc	e VIII	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					
Fundan dance f ry, men ty, fault	nental for relia nory org t tolera	principles of data process ble systems, analogue, o ganisation, system archit nce. Programming of emb	sing, especially for ae ligital, FPGAs, radiati ecture, input and out pedded systems in C-	erospace applicatior on effects, micro pro put, sensors and ac ++.	ns. What is information? Gui- ogramming, CPUs, DMAs, memo- tuators, energy systems, reliabili-	
Intende	ed leari	ning outcomes				
Unders grammi and out	tanding ing. Em tput sys	g of analogue and digital bedded programming in stems.	data processing in er C++, knowledge abo	mbedded systems. S ut common sensors	Structure of hardware and pro- and actuators as well as input	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V + Ü +	Ü (no i	nformation on SWS (wee	kly contact hours) an	d course language a	vailable)	
Methoo ster, in	d 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 hours e	examiı each), v	nation (approx. 120 minu veighted 1:1	tes) and approx. 6 pr	actical exercises (ap	prox. 6 exercises, approx. 4	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
			-			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)		
Module	Module appears in					
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	014)		

Module	title				Abbreviation	
Object oriented Programming			10-l-OOP-141-m01			
Module	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)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Polymo ment.	rphism	ı, generic programming, r	neta programming, w	eb programming, te	mplates, document manage-	
Intende	ed leari	ning outcomes				
The stu their pr	dents a actical	are proficient in the differ use.	ent paradigms of obj	ect-oriented progran	nming and have experience in	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
Method	l of ass formati	essment (type, scope, la	nguage — if other tha	an German, examina a bonus)	tion offered — if not every seme-	
writton	ovami	action (approx 60 to 120	minutos): if annound	a bonus)	t the beginning of the course, the	
written	exami	nation can be replaced by	an oral examination	of one candidate ea	ach (approx. 20 minutes) or an	
oral exa	aminati	ion in groups (groups of 2	2, approx. 30 minutes	5)		
Langua	ge of a	ssessment: German, Eng	lish			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
	<u> </u>					
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)		
Module	Module appears in					
Bachelo	or' deg	ree (1 major) Computer S	cience (2014)			
Bachelo	or' deg	ree (1 major) Mathematic	s (2014)			
Bachelo	or' deg	ree (1 major) Business Int	formation Systems (2	014)		
Bachelo	or' deg	ree (1 major) Computatio	nal Mathematics (201	14)		
Bachelo	or' deg	ree (1 major) Aerospace (Computer Science (20	14)		

Module title					Abbreviation
Practic	al work	ζ.			10-I-PLR-141-m01
Module	e coord	inator		Module offered by	
Dean o	f Studie	es Informatik (Computer :	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		
1 seme	ster	undergraduate			
Conten	ts				
Comple	etion of	a practical task.			
Intende	ed learı	ning outcomes			
The pra	ictical a	allows participants to wo	rk on a problem in ae	rospace information	technology in teams.
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (no in	format	ion on SWS (weekly cont	act hours) and course	e language available)
Methoo ster, in	d 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-
report (approx	. 3 to 5 pages) and prese	ntation (approx. 5 to	10 minutes) on prac	tical work
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module	e appea	ins in			
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	914)	

Module title Abb				Abbreviation		
Practical Course in Programming				10-I-PP-141-m01		
Module co	oordinator		Module offered by			
Dean of St	tudies Informatik (Computer S	Science)	Institute of Comput	er Science		
ECTS M	lethod of grading	Only after succ. com	pl. of module(s)			
10 (n	not) successfully completed					
Duration	Module level	Other prerequisites				
1 semeste	er undergraduate					
Contents						
The progra	amming language Java. Indep	endent creation of sr	mall to middle-sized	, high-quality Java programs.		
Intended	learning outcomes					
The stude	ents are able to independently	develop small to mi	ddle-sized, high-qua	ality Java programs.		
Courses (t	type, number of weekly conta	ct hours, language —	· if other than Germa	n)		
P (no info	rmation on SWS (weekly cont	act hours) and course	e language available	2)		
Method of ster, inform	f assessment (type, scope, la mation on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-		
completio If annound examinati 30 minute	on of programming exercises (ced by the lecturer at the beg ion of one candidate each (ap es).	approx. 240 hours) a inning of the course, prox. 20 minutes) or	nd written examinat the written examina an oral examination	ion (approx. 60 to 120 minutes). tion can be replaced by an oral in groups (groups of 2, approx.		
Allocation	n of places					
Additiona	l information					
Additiona	l information on module dura	tion: 1 to 2 semesters	5.			
Workload						
Teaching	cvcle					
Referred t	to in LPO I (examination regu	lations for teaching-c	legree programmes)			
Module appears in						
Bachelor'	degree (1 major) Computer So	cience (2014)				
Bachelor'	Bachelor' degree (1 major) Mathematics (2014)					
Bachelor'	degree (1 major) Computation	nal Mathematics (201	14)			
Bachelor'	degree (1 major) Aerospace C	omputer Science (20	014)			

Module	title				Abbreviation	
Computer Architecture					10-I-RAK-141-m01	
Module	coord	inator		Module offered by		
Dean of	f Studie	es Informatik (Computer S	Science)	Institute of Compute	er Science	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Instruct ling, ca	tion set ches, v	architectures, command ector processors, multi-c	l processing through ore processors.	pipelining, statical a	nd dynamic instruction schedu-	
Intende	ed learr	ning outcomes				
The stu compile	dents r ers and	naster the most importar operating systems.	nt techniques to desig	gn fast computers as	s well as their interaction with	
Courses	s (type,	number of weekly conta	ct hours, language —	if other than Germa	n)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
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-	
written written oral exa Langua	examir examir aminati ge of a	nation (approx. 60 to 120 nation can be replaced by on in groups (groups of 2 ssessment: German, Eng	minutes); if annound / an oral examination 2, approx. 30 minutes lish	ed by the lecturer at of one candidate ea)	the beginning of the course, the ach (approx. 20 minutes) or an	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teachir	ng cycl	9				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in						
Bachelo	or' degi	ree (1 major) Computer So	cience (2014)			
Bachelo	or' degi	ree (1 major) Mathematic	s (2014)	、 、		
Bachel	or' degi	ree (1 major) Computation	nal Mathematics (201	14)		
васпец	u degi	ee (1 major) Aerospace C	computer Science (20	14)		

Module	title				Abbreviation
Tutoria	l Digita	ll computer systems			10-I-RALT-141-m01
Module	coord	inator		Module offered by	
holder	of the O	Chair of Computer Science	e V	Institute of Compute	er Science
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 semes	ster	undergraduate			
Conten	ts				
Introdu cuit har	ction to dware	o digital technologies, Bo description languages, s	olean algebras, coml tructure of a simple p	binatory circuits, syn processor, machine p	chronous and asynchronous cir- programming, memory hierarchy.
Intende	ed leari	ning outcomes			
The stu ming of design	dents easy r of digit	oossess a knowledge of t nicroprocessors as well a al systems.	he fundamentals of c s knowledge for the a	ligital technologies ι application of hardw	up to the design and program- are description languages for the
Courses	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
Ü (no in	Iformat	tion on SWS (weekly cont	act hours) and cours	e language available)
Method ster, inf a) comp correctl	l of ass formati pletion y) or b)	essment (type, scope, la on on whether module ca of approx. 11 exercise sh written examination (ap	nguage — if other tha an be chosen to earn eets with approx. 4 e prox. 180 to 240 min	an German, examina a bonus) xercises per sheet (5 utes). Method of ass	tion offered — if not every seme- 30% of exercises to be completed essment to be selected by the
	ion of r				
Additio	nal inf	ormation			
Worklo	ad				
WORKIO	uu				
Toachir		0			
reatill	ig tytt	e			
 Doforra	d to in	IDOL (avamination ratio	lations for tooships		
Referred to In LPU I (examination regulations for teaching-degree programmes)					
Module	appea	Irs In			
Bachel	or degi or degi	ree (1 major) Computer So ree (1 major) Mathematic	s (2014)		
Bachelo	or' deg	ree (1 major) Mathematic	nal Mathematics (201	14)	
Bachelo	or' deg	ree (1 major) Aerospace C	Computer Science (20	 014)	
		•			

Module	title				Abbreviation
Digital	compu	ter systems			10-I-RALV-141-m01
Module	coord	inator		Module offered by	
Dean of	fStudie	es Informatik (Computer S	Science)	Institute of Compute	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 semes	ster	undergraduate			
Conten	ts				
Introdu cuit har	ction to dware	o digital technologies, Bo description languages, s	olean algebras, com tructure of a simple p	binatory circuits, syn processor, machine p	chronous and asynchronous cir- programming, memory hierarchy.
Intende	ed learr	ning outcomes			
The stu ming of design	dents µ easy n of digit	possess a knowledge of t nicroprocessors as well a al systems.	he fundamentals of c s knowledge for the a	ligital technologies u application of hardw	up to the design and program- are description languages for the
Courses	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available)
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 written oral exa	examir examir aminati	nation (approx. 60 to 120 nation can be replaced by on in groups (groups of 2	minutes); if annound an oral examination an approx. 30 minutes	ed by the lecturer at of one candidate ea)	the beginning of the course, the ach (approx. 20 minutes) or an
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycl	9			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
Module	Module appears in				
Bachelo	or' degi	ree (1 major) Computer So	cience (2014)		
Bachelo	or' deg	ree (1 major) Mathematic	s (2014)		
Bachelo	or' degi	ree (1 major) Computation	nal Mathematics (201	14)	
Bachelo	or deg	ree (1 major) Aerospace C	omputer Science (20	914)	

Module	title				Abbreviation	
Computer Networks 10-I-RK-141-m01				10-I-RK-141-m01		
Module	coord	inator		Module offered by		
holder	of the C	Chair of Computer Scienc	e III	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
8	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Conten	ts					
Propert of comp and stru- chies, c and ISC Mobile works. Intende The stu as well Courses V + Ü (n Method ster, inf written written	Properties of computer and communication systems: data traffic in distributed systems. Performance analysis of computer networks and communication systems: problem statement and introduction to method architecture and structure of computer networks: network structure, network access, access methods, digital transfer hierarchies, dataflow control and traffic control, transfer network. Communication protocols: fundamental principles and ISO architecture models. Internet: structure and basic mechanism, TCP/IP, routing, network management. Mobile communication networks: fundamental concepts, GSM, UMTS. Future communication systems and networks. Intended learning outcomes The students possess an intricate knowledge of the structure of computer networks and communication systems as well as fundamental principles to rate these systems. Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module 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					
Langua	ge of a	ssessment: German, Eng	lish			
Allocat		nales				
Additio	nalinf	ormation				
Auditio	nat mi					
Worklo	ad					
Teachir	Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in						
Bachelo	or' deg	ree (1 major) Computer S	cience (2014)			
Bachelo Bachelo Bachelo	or' degi or' degi or' degi	ree (1 major) Mathematic ree (1 major) Computatio ree (1 major) Aerospace (s (2014) nal Mathematics (201 Computer Science (20	.4) 14)		

Module title			Abbreviation		
Tutorial Software Technology					10-I-STT-141-m01
Module	coord	inator		Module offered by	
Dean of	fStudie	es Informatik (Computer S	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
Object- tabases framew	oriente s and o orks).	d software development bject-relational mapping	with UML, developm , foundations of web	ent of graphical user programming (HTML	interfaces, foundations of da- ., XML, scripting languages, web
Intende	ed learr	ning outcomes			
The stu softwar	dents p e syste	possess a fundamental the second s	neoretical and practic web.	al knowledge on the	e design and development of
Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
Ü (no in	format	tion on SWS (weekly cont	act hours) and cours	e language available	2)
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 eets with approx 4 e	an German, examina a bonus) xercises per sheet (r	tion offered — if not every seme-
correctl candida	y) or b) ate.) written examination (ap	prox. 180 to 240 min	utes). Method of ass	essment to be selected by the
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regu	lations for teaching-c	legree programmes)	
Module appears in					
Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Business Information Systems (2014) Bachelor' degree (1 major) Computational Mathematics (2014)					
Bachelo	or' deg	ree (1 major) Aerospace (Computer Science (20	914)	

Module title			Abbreviation		
Software Technology					10-I-STV-141-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)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Object- tabases framew	oriente s and o orks).	d software development bject-relational mapping	with UML, developm , foundations of web	ent of graphical user programming (HTML	r interfaces, foundations of da- ., XML, scripting languages, web
Intende	ed leari	ning outcomes			
The stu softwar	dents µ re syste	possess a fundamental the most in particular for the v	neoretical and practic web.	al knowledge on the	e design and development of
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)
Method ster, inf written written	d of ass formati examin examin aminati	eessment (type, scope, la on on whether module ca nation (approx. 60 to 120 nation can be replaced by ion in groups (groups of a	nguage — if other tha an be chosen to earn minutes); if annound y an oral examination	an German, examina a bonus) ced by the lecturer at of one candidate ea	tion offered — if not every seme- t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of r	olaces		<i>,,</i>	
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ıg cycl	e			
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module appears in					
Bachel	or' deg	ree (1 major) Computer So	cience (2014)		
Bachel	or' deg	ree (1 major) Mathematic	s (2014)		
Bachel	or' deg	ree (1 major) Business Inf	formation Systems (2	014)	
Bachel	or' deg	ree (1 major) Computation	nal Mathematics (20:	14)	
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)				

Module title			Abbreviation			
Tutorial Theoretical Informatics				10-I-TIT-141-m01		
Module	coordi	inator		Module offered by		
Dean of	Studie	es Informatik (Computer S	Science)	Institute of Compute	er Science	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	uccessfully completed				
Duration	n	Module level	Other prerequisites			
1 semes	ter	undergraduate				
Content	S					
Computa guages,	ability conte	, decidability, countabilit xt-sensitive languages, c	y, finite automata, re omplexity of calculat	gular sets, generativ ions, P-NP problem,	re grammars, context-free lan- NP completeness.	
Intendeo	d learr	ning outcomes				
The stud tability, complex	lents p finite a kity of (oossess a fundamental a automata, regular sets, g computations, P-NP prob	nd applicable knowle enerative grammars, lem, NP completenes	edge in the areas of a context-free languag ss.	computability, decidability, coun- ges, context-sensitive languages,	
Courses	(type,	number of weekly conta	ct hours, language —	if other than Germa	n)	
Ü (no inf	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
Method ster, info	of ass ormati	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-	
a) comp correctly candida	letion /) or b) te.	of approx. 11 exercise sh written examination (ap	eets with approx. 4 e prox. 180 to 240 min	xercises per sheet (5 utes). Method of ass	;o% of exercises to be completed essment to be selected by the	
Allocatio	on of p	olaces				
Addition	nal info	ormation				
Workloa	ıd					
Teaching	g cycle	9				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in					
Bachelo	r' degr	ree (1 major) Computer So	cience (2014)			
Bachelo	r' degi	ree (1 major) Mathematic	s (2014)			
Bachelo	r' degi	ree (1 major) Computation	nal Mathematics (201	14)		
васпеіо	r aegi	ree (1 major) Aerospace C	omputer Science (20	014)		

Module title			Abbreviation			
Theoretical Informatics				10-I-TIV-141-m01		
Module coo	rdinator		Module offered by			
Dean of Stu	dies Informatik (Computer	Science)	Institute of Compute	er Science		
ECTS Met	thod of grading	Only after succ. com	pl. of module(s)			
5 nun	nerical grade					
Duration	Module level	Other prerequisites				
1 semester	undergraduate					
Contents						
Computabil guages, cor	ity, decidability, countabilit ntext-sensitive languages, c	y, 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 student tability, finit complexity	ts possess a fundamental a te automata, regular sets, g of computations, P-NP prob	nd applicable knowle enerative grammars, lem, NP completenes	edge in the areas of o context-free languages.	computability, decidability, coun- ges, context-sensitive languages,		
Courses (ty	pe, number of weekly conta	ct hours, language –	if other than Germa	n)		
V (no inform	nation on SWS (weekly cont	act hours) and cours	e language available	.)		
Method of a ster, inform	assessment (type, scope, la ation 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 exar written exar oral examin	nination (approx. 60 to 120 nination can be replaced by ation in groups (groups of 2	minutes); if annound an oral examination a, approx. 30 minutes	ced by the lecturer at of one candidate ea ;)	the beginning of the course, the ach (approx. 20 minutes) or an		
Allocation o	of places					
Additional i	nformation					
Workload						
Teaching cy	<i>r</i> cle					
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module app	Module appears in					
Bachelor' d	egree (1 major) Computer So	cience (2014)				
Bachelor' d	Bachelor' degree (1 major) Mathematics (2014)					
Bachelor' d	egree (1 major) Computation	nal Mathematics (20:	14)			
Bachelor' d	egree (1 major) Aerospace (computer Science (20	914)			

Module title					Abbreviation
Knowledge-based Systems					10-I-WBS-141-m01
Module	e coord	inator		Module offered by	
holder	of the C	Chair of Computer Scienc	e VI	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				
Founda thods,	itions ii knowle	n the following areas: kno dge acquisition, learning	owledge managemen , guidance dialogue,	t systems, knowledg semantic web.	ge representation, solving me-
Intende	ed learr	ning outcomes			
The stu system	dents p s inclue	oossess theoretical and p ding knowledge formalisa	practical knowledge f ation and have acqui	or the understanding red experience in a s	g and design of knowledge-based small project.
Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
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-
written written oral exa Langua	examir examir aminati ge of a	nation (approx. 60 to 120 nation can be replaced by on in groups (groups of 2 ssessment: German, Eng	minutes); if annound / an oral examination 2, approx. 30 minutes lish	ed by the lecturer at of one candidate ea)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	in			
Bachel	or' deg	ree (1 major) Computer S	cience (2014)		
Bachel	or' deg	ree (1 major) Business Inf	formation Systems (2	014)	
Bachel	or' degi	ree (1 major) Aerospace (computer Science (20	14)	

Module title			Abbreviation			
Introduction to Control Theory				10-M=ARTH-141-m01		
Module	e coord	inator		Module offered by		
Dean o	f Studie	es Mathematik (Mathema	ntics)	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	graduate				
Conten	ts					
Introdu bility, b	ction to basics i	o mathematical systems f n optimal control.	theory: stability, cont	rollability and obser	vability, state feedback and sta-	
Recom Basic k	mende nowlec	d previous knowledge: lge of the contents of the	module "Ordinary Di	fferential Equations'	' is useful.	
Intende	ed learr	ning outcomes				
The stu blish a and oth	dent is connec ner fielc	acquainted with the func- tion between these resu ls of mathematics.	damental notions and lts and broader theor	d methods of control ies, and learns abou	theory. He/She is able to esta- It the interactions of geometry	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
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	an German, examina a bonus)	tion offered — if not every seme-	
written written oral exa Assess semest Langua	examir examir aminati ment o cer, cou ge of a	nation (approx. 90 to 120 nation can be replaced by fon in groups (groups of 2 ffered: Assessment offered rse offered on demand o ssessment: German, Eng	minutes); if annound / an oral examination 2, approx. 30 minutes ed in the semester in r every four semester; lish	ed by the lecturer at of one candidate ea) which the course is s.	t the beginning of the course, the ach (approx. 20 minutes) or an offered and in the subsequent	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Workload						
Teaching cycle						
Referre	d to in	LPOI (examination regu	lations for teaching-d	legree programmes)		
Module	Module appears in					
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	14)		

Module title				Abbreviation	
Ordinary Differential Equations for students of other subjects			ts	10-M-DGLaf-141-m01	
Module	e coord	inator		Module offered by	·
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Existen ferentia	ce and al equa	uniqueness theorem; co tions; matrix exponential	ntinuous dependenc series; linear differe	e of solutions on ini ntial equations of hi	tial values; systems of linear dif- gher order.
Intende	ed lear	ning outcomes			
The stu equatio	dent is ons. He	acquainted with the fun- /she is able to apply the	damental concepts a se methods to practic	nd methods of the tl al problems.	neory of ordinary differential
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	ın)
V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
Methor ster, in	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 written oral exa Langua	examii examii aminat ge of a	nation (approx. 90 to 180 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ced by the lecturer a of one candidate ea ;)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
			0		
Module	Module appears in				
Bachel	or' deg	ree (1 major) Computer S	cience (2014)		
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	914)	

Module title				Abbreviation		
Mathematics 1 for students of Space- and Aerospace Computer Science			10-M-LRI1-141-m01			
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Basics in one v	on nun variable	nbers and functions, seque, vector calculus, linear	uences and series, el maps and systems of	ementary functions, linear equations, m	differential and integral calculus atrix calculus.	
Intende	ed lear	ning outcomes				
The stu to appl is able	dent g y these to inte	ets acquainted with fund e methods to problems in rpret the results.	amental concepts an natural and enginee	d methods of advan ring sciences, in par	ced mathematics. He/She learns ticular in computer science, and	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	in)	
V + Ü (r	no infor	rmation on SWS (weekly o	contact hours) and co	urse language avail	able)	
Methoo ster, in	l 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-	
written written oral exa Langua	examii examii aminat ge of a	nation (approx. 90 to 120 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ed by the lecturer a of one candidate ea)	t the beginning of the course, the ach (approx. 20 minutes) or an	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO L (examination regulations for teaching-degree programmes)						
Module	e appea	ars in				
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	914)		

Module title				Abbreviation		
Mathematics 2 for students of Space- and Aerospace Computer Science			10-M-LRI2-141-m01			
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Eigenva integra	alue the	eory, differential and inte ems.	gral calculus in sever	al variables, differe	ntial equations, Fourier analysis,	
Intende	ed lear	ning outcomes				
The stu to appl is able	ident g y these to inte	ets acquainted with fund methods to problems in pret the results.	amental concepts an natural and enginee	d methods of advan ring sciences, in par	ced mathematics. He/She learns ticular in computer science, and	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	in)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
Methoo ster, in	d 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-	
written written oral exa Langua	examii examii aminat ige of a	nation (approx. 90 to 120 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ced by the lecturer a of one candidate ea ;)	t the beginning of the course, the ach (approx. 20 minutes) or an	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Poforro	d to in	IDOL (avamination room	lations for toaching a	logroo programmac)		
Referred to in LPUT (examination regulations for teaching-degree programmes)						
		•				
Module	e appea	irs in				
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20)14)		

Module title				Abbreviation		
Numerical Mathematics 1 for students of other subjects					10-M-NM1af-141-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					
Solutio ons, int	n of sy: terpola	stems of linear equations tion with polynomials, sp	and curve fitting pro plines and trigonome	blems, nonlinear eq tric functions, nume	uations and systems of equati- rical integration.	
Intende	ed lear	ning outcomes				
The stu to pract	dent is tical pr	acquainted with the fun oblems and knows about	damental concepts a t their typical fields o	nd methods in nume f application.	erical mathematics, applies them	
Course	s (type	, number of weekly conta	ct hours, language –	· if other than Germa	n)	
V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
Methoo ster, in	l of ass formati	sessment (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 written oral exa Langua	examin examin aminat ge of a	nation (approx. 90 to 180 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ced by the lecturer a of one candidate ea ;)	t the beginning of the course, the ach (approx. 20 minutes) or an	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in					
Bachel	or' deg	ree (1 major) Computer S	cience (2014)			
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	014)		

Module title				Abbreviation	
Numerical Mathematics 2 for students of other subjects				10-M-NM2af-141-m01	
Module	e coord	inator		Module offered by	
Dean of	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				
Eigenva bounda	alue pro ary valu	oblems, linear programm ie problems.	ing, methods for initi	al value problems fo	or ordinary differential equations,
Intende	ed lear	ning outcomes			
The stu about t and eng	dent is heir ad gineeri	able to draw a distinctio vantages and limitations ng sciences and econom	n between the differe concerning the poss ics.	ent concepts of num ibilities of application	erical mathematics and knows on in different fields of natural
Course	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)
V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
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-
written written oral exa Langua	examii examii aminat ge of a	nation (approx. 90 to 180 nation can be replaced by ion in groups (groups of 2 ssessment: German, Eng	minutes); if annound y an oral examination 2, approx. 30 minutes lish	ced by the lecturer a of one candidate ea 5)	t the beginning of the course, the ach (approx. 20 minutes) or an
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	urs in			
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	914)	

Module title			Abbreviation						
Astrophysics				11-A4-141-m01					
Module	coord	inator		Module offered by					
Managi and Ast	ng Dire rophys	ector of the Institute of Th sics	eoretical Physics	Faculty of Physics a	nd Astronomy				
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)					
6	nume	rical grade							
Duratio	n	Module level	Other prerequisites						
1 semes	ster	undergraduate	Certain prerequisite	s may have to be me	t to qualify for admission to as-				
			sessment: a) approx	k. 50% of exercises (a	approx. 6 to 12 exercise sheets;				
			time to complete: 1	to 2 weeks each) to b	be completed correctly or b) pre-				
			paring and deliverin	g a seminar presenta	ation or c) preparing a report on				
			the progress and/or	results of a project ((approx. 8 to 10 pages).				
Conten	ts								
History	of astr	onomy, coordinates and	time measurement, t	he solar system, size	e scales in outer space, telesco-				
pes and	detec	tors, stellar structure, ste	ellar atmospheres, st	ellar evolution, final	stages of stellar evolution, inter-				
stellar r	nediun	n, structure of the Milky V	Vay, local universe, e	expanding space-time	e, galaxies, active galactic nuclei,				
nucleos	synthee	sis cosmic microwave ba	ckground radiation	structure formation	inflation				
Intende	d learn	ning outcomes							
The stu	dents a	are familiar with the mod	ern world view of Ast	ronhysics. They know	w methods and tools for astro-				
physica	il obse	rvations and evaluations	. They are able to use	these methods to p	lan and analyse own observati-				
ons. Th	ey kno	w the structure of the uni	verse, e.g. of stars ar	nd galaxies and unde	erstand the process of their deve-				
lopmen	t.								
Courses	s (type,	, number of weekly conta	ct hours, language –	- if other than Germa	n)				
V + S (n	o infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)				
Method ster, inf	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-				
a) writte	en exar	mination (approx. 120 mi	nutes, for modules w	ith less than 4 ECTS	credits approx. 90 minutes; un-				
less oth	nerwise	e specified) or b) oral exa	mination of one canc	lidate each or oral ex	amination in groups (approx. 30				
minutes	s per ca	andidate, for modules wi	th less than 4 ECIS c	redits approx. 20 mil	nutes) or c) project report (8 to 10				
pages,			or u) presentation/s	eminal presentation	(approx. 30 minutes)				
Allocat	ion of p	Diaces							
 Additio	nal inf	ormation							
Auuitio									
Worklo	Workload								
Teaching cycle									
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)								
Module	appea	irs in							
Bachelo	or' deg	ree (1 major) Aerospace (Computer Science (20	014)					
			F	17	Bachelor degree (I major) Aerospace computer Science (2014)				

Introduction to Physics Part a for students of Physics Related Minor Subjects 11-ENNF1-062-mo1 Module offered by Module offered by Faculty of Physics and Astronomy Colspan="2">Colspan="2">Colspan="2">Colspan="2" To mumerical grade	Module title					Abbreviation		
Module Correction Correctin Correction Correction Correction Correction Cor	Introduction to Physics Part 1 for students of Physics Related Minor Subjects					11-ENNF1-062-m01		
Managing Director of the Institute of Applied Physics Faculty of Physics and Astronomy Methanics Granulty of Physics and Astronomy Managing Director of the Institute of Applied Physics Faculty of Physics and Astronomy Managing Director of the Institute of Applied Physics Faculty of Physics and Astronomy Managing Director of the Institute of Applied Physics Only after succ.compL of module(s) Machanics, vibration theory, thermodynamics. Intermodule Succession Intermodule Carrier Succession Succession Methanics, vibration theory, thermodynamics. Intermodule Succession Courses (type, number of weekly contact hours, language — if other than German) Y + 0 (no inormation on SWS (weekly contact hours) and course language available) Methad of assessment (type, scope, language — if other than German) Y + 0 (no inormation on SWS (weekly contact hours) and course language available) Methad of assessment (type, scope, language — if other than German) Y + 0 (no inormation on SWS (weekly contact hours) and course language available) Methad of assessment (type, scope, language — if other than German) Y + 0 (no inormation on SWS (weekly contact hours) and course language available) Methad is part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information Moritad Marte	Module coordinator				Module offered by			
<table-container> ECTS Interaction Only after succ. compl. of module(s) numerical gradue </table-container>	Manag	ing Dire	ector of the Institute of Ap	plied Physics	Faculty of Physics a	and Astronomy		
numerical grade Duration Module level Other prerequisites is semester undergraduate Contents:	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
NamioModule levelOther prequisites1 seme	7	nume	rical grade	-				
i semester undergraduate	Duratio	on	Module level	Other prerequisites				
Contents Mechanics, vibration theory, thermodynamics. Intendel learning outcomes The students have basic knowledge of physics for engineering students. Courses (type, number of weekly contact hours, language – if other than German) V + û (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every seme-ster, information on whether module can be chosen to earn a bonus) written examination (approx. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information Workload Teaching cycle Seferred to in LPO1 (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (major) Mathematics (2008) Bachelor' degree (major) Mathematics (2012) Bachelor' degree (major) Mathematics (2013) Bachelor' degree (major) Mathematics (2012) Bachelor' degree (major) Computational Mathematics (2014) Bachelor' degree (major) Computational Mathematics (2015) Bachelor' degree (major) Computational Mathematics (2016)	1 seme	ster	undergraduate					
Mechanics, vibration theory, thermodynamics. Intended learning outcomes The students have basic knowledge of physics for engineering students. Courses (type, number of weekly contact hours, language — if other than German) Y + 0 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information	Conten	ts						
Intended learning outcomes The students have basic knowledge of physics for engineering students. Courses (type, number of weekly contact hours, language — if other than German) Y + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information	Mecha	nics, vi	bration theory, thermody	namics.				
The students have basic knowledge of physics for engineering students. Courses (type, number of weekly contact hours, language — if other than German) V + 0 (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to ean a bonus) written examination (approx. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information	Intende	ed lear	ning outcomes					
Courses (type, number of weekly contact hours, language — if other than German) V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information	The stu	dents l	have basic knowledge of	physics for engineeri	ng students.			
V + Ü (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) written examination (approx. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information	Course	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)		
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. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information	V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)		
written examination (approx. 120 minutes) Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information	Methoo ster, in	d of ass formati	sessment (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-		
Allocation of places Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Materials (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2015) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2015) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2015) Bachelor' degree (1 major) Aerospace Computer Science (2015) Bachelor' degree (1 major) Aerospace Computer Science (2015) Bachelor' de	written	exami	nation (approx, 120 minu	tes)	-			
Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot. Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Computational Materials (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2015) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2015) Bachelor' degree (1 major) Aerospace Computer Science	Allocat	ion of p	olaces					
Additional information Workload Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2015) Bachelor' degree (1 major) Computational Mathematics (2017) Bachelor' degree (1 major) Computational Mathematics (2018) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Func	Only as	s part o	f pool of general key skill	s (ASQ): 20 places. P	laces will be allocat	ed by lot.		
Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) <td>Additio</td> <td>nal inf</td> <td>ormation</td> <td></td> <td></td> <td>,</td>	Additio	nal inf	ormation			,		
Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td></tr<>								
Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2013)	Worklo	ad						
Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2013)								
Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2013)	Teachi	ng cycl	e					
Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major								
Module appears inBachelor' degree (1 major) Mathematics (2008)Bachelor' degree (1 major) Mathematics (2014)Bachelor' degree (1 major) Mathematics (2012)Bachelor' degree (1 major) Mathematics (2013)Bachelor' degree (1 major) Mathematics (2007)Bachelor' degree (1 major) Technology of Functional Materials (2009)Bachelor' degree (1 major) Technology of Functional Materials (2010)Bachelor' degree (1 major) Computational Mathematics (2014)Bachelor' degree (1 major) Computational Mathematics (2014)Bachelor' degree (1 major) Computational Mathematics (2012)Bachelor' degree (1 major) Computational Mathematics (2013)Bachelor' degree (1 major) Computational Mathematics (2013)Bachelor' degree (1 major) Aerospace Computer Science (2014)Bachelor' degree (1 major) Aerospace Computer Science (2014)Bachelor' degree (1 major) Aerospace Computer Science (2011)Bachelor' degree (1 major) Functional Materials (2012)Bachelor' degree (1 major) Aerospace Computer Science (2014)Bachelor' degree (1 major) Functional Materials (2012)Bachelor' degree (1 major) Functional Materials (2012)Bachelor' degree (1 major) Functional Materials (2012)Bachelor' degree (1 major) Functional Materials (2015)Bachelor' degree (1 major) Functional Materials (2015)	Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)			
Module appears inBachelor' degree (1 major) Mathematics (2008)Bachelor' degree (1 major) Mathematics (2014)Bachelor' degree (1 major) Mathematics (2012)Bachelor' degree (1 major) Mathematics (2013)Bachelor' degree (1 major) Mathematics (2007)Bachelor' degree (1 major) Technology of Functional Materials (2009)Bachelor' degree (1 major) Technology of Functional Materials (2010)Bachelor' degree (1 major) Computational Mathematics (2014)Bachelor' degree (1 major) Computational Mathematics (2014)Bachelor' degree (1 major) Computational Mathematics (2012)Bachelor' degree (1 major) Computational Mathematics (2013)Bachelor' degree (1 major) Aerospace Computer Science (2009)Bachelor' degree (1 major) Aerospace Computer Science (2014)Bachelor' degree (1 major) Functional Materials (2012)Bachelor' degree (1 major) Functional Materials (2012)Bachelor' degree (1 major) Functional Materia								
Bachelor' degree (1 major) Mathematics (2008) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012)	Module appears in							
Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012)	Bachel	or' deg	ree (1 major) Mathematic	s (2008)				
Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012)	Bachel	Bachelor' degree (1 major) Mathematics (2014)						
Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012)	Bachelor' degree (1 major) Mathematics (2012)							
Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012)	Bachel	Bachelor' degree (1 major) Mathematics (2013)						
Bachelor' degree (1 major) Technology of Functional Materials (2009) Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012)	Bachel	Bachelor' degree (1 major) Mathematics (2007)						
Bachelor' degree (1 major) Technology of Functional Materials (2010) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Functional Materials (2012)	Bachelor' degree (1 major) Technology of Functional Materials (2009)							
Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachelor' degree (1 major) Technology of Functional Materials (2010)							
Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachelor' degree (1 major) Computational Mathematics (2009)							
Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachelor' degree (1 major) Computational Mathematics (2014)							
Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachelor' degree (1 major) Computational Mathematics (2012)							
Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachelor' degree (1 major) Computational Mathematics (2013)							
Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachelor' degree (1 major) Aerospace Computer Science (2009)							
Bachelor' degree (1 major) Aerospace Computer Science (2011) Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachelor' degree (1 major) Aerospace Computer Science (2014)							
Bachelor' degree (1 major) Functional Materials (2012) Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2011)						
Bachelor' degree (1 major) Technology of Functional Materials (2006)	Bachel	Bachelor' degree (1 major) Functional Materials (2012)						
	Bachel							

Module title					Abbreviation		
Introduction to Physics Part 2 for students of Physics Related Minor Subjects					11-ENNF2-062-m01		
Module coordinator				Module offered by			
Manag	ing Dire	ector of the Institute of Ap	plied Physics	Faculty of Physics a	and Astronomy		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)			
7	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
Science	e of ele	ctricity, magnetism, optic	s, Atomic Physics.				
Intend	ed lear	ning outcomes					
The stu	idents l	have basic knowledge of	physics for engineeri	ing students.			
Course	s (type	, number of weekly conta	ct hours, language –	- if other than Germa	n)		
V + Ü (I	no infoi	rmation on SWS (weekly o	contact hours) and co	ourse language avail	able)		
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-		
written	exami	nation (approx. 120 minu	tes)				
Allocat	ion of p	olaces					
Only as	s part o	f pool of general key skill	s (ASQ): 20 places. P	Places will be allocat	ed by lot.		
Additio	onal inf	ormation	·				
Worklo	ad						
Teachi	ng cycl	e					
Referre	ed to in	LPOI (examination regu	lations for teaching-o	degree programmes)			
Module appears in							
Bachel	Bachelor' degree (1 major) Mathematics (2008)						
Bachel	Bachelor' degree (1 major) Mathematics (2014)						
Bachelor' degree (1 major) Mathematics (2012)							
Bachelor' degree (1 major) Mathematics (2013)							
Bachelor' degree (1 major) Mathematics (2007)							
Bachelor' degree (1 major) Technology of Functional Materials (2009)							
Bachelor' degree (1 major) Technology of Functional Materials (2010)							
Bachelor' degree (1 major) Computational Mathematics (2009)							
Bachelor' degree (1 major) Computational Mathematics (2014)							
Bachelor' degree (1 major) Computational Mathematics (2012)							
Bachelor' degree (1 major) Computational Mathematics (2013)							
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2009)						
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2014)						
Bachel	Bachelor' degree (1 major) Aerospace Computer Science (2011)						
Bachel	Bachelor' degree (1 major) Functional Materials (2012)						
Bachelor' degree (1 major) Technology of Functional Materials (2006)							

Module title		Abbreviation			
Laboratory C	ourse Physics B for Space	e- and Aerospace Com	puter Science	11-P-LRB-141-m01	
Module coordinator			Module offered by		
Managing Director of the Institute of Applied Physics			Faculty of Physics a	nd Astronomy	
ECTS Meth	od of grading	Only after succ. com	pl. of module(s)		
4 (not)	successfully completed	11-P-PA			
Duration	Module level	Other prerequisites			
1 semester	undergraduate				
Contents					
Physical laws	of optics, vibrations and	waves, science of ele	ectricity and circuits	with electric components.	
Intended lea	rning outcomes				
The students le to indepen measuring pr principles of	know and have mastered dently plan and conduct or otocol. They are able to en statistics and to draw, pre-	physical measuring experiments, to coope valuate the measuring esent and discuss the	methods and experinerate with others, an gresults on the basi conclusions.	menting techniques. They are ab- d to document the results in a s of error propagation and of the	
Courses (type	e, number of weekly conta	ict hours, language —	if other than Germa	n)	
P (no informa	ition on SWS (weekly cont	act hours) and cours	e language available	2)	
Method of as ster, informa	sessment (type, scope, la tion 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) Preparing, performing and evaluating (lab report) the experiments will be considered successfully completed if a Testat (exam) is passed. Experiments that were not successfully completed can be repeated once. And b) talk (with discussion; approx. 30 minutes) to test the candidate's understanding of the physics-related contents of the module component. Talks that were not successfully completed can be repeated once. Both components of the assessment have to be successfully completed.					
Allocation of places					
Additional information					
Additional information on module duration: 1 to 2 semesters.					
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appe	ars in				
Bachelor' deg	gree (1 major) Aerospace (Computer Science (20	014)		

Module title					Abbreviation		
Laboratory Course Physics C for Space- and Aerospace Com				puter Science	11-P-LRC-141-m01		
Module coordinator				Module offered by	odule offered by		
Managing Director of the Institute of Applied Physics			oplied Physics	Faculty of Physics a	nd Astronomy		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
4	(not) s	successfully completed	11-P-PA and 11-P-LRE	3			
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate	-				
Conten	ts						
Physica cial cor	al laws nputeri	of wave optics, Molecula sed devices with exampl	r, Atomic and Nuclea es from optics and S	r Physics and moder olid-State Physics.	n measuring methods using spe-		
Intende	ed leari	ning outcomes					
The stu le to ind measur princip	dents l depenc ring pro les of s	know and have mastered lently plan and conduct e ptocol. They are able to ev tatistics and to draw, pre	physical measuring experiments, to cooper valuate the measuring sent and discuss the	methods and experinerate with others, an gresults on the basi conclusions.	menting techniques. They are ab- d to document the results in a s of error propagation and of the		
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)		
P (no information on SWS (weekly contact hours) and course language available)							
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-		
a) Preparing, performing and evaluating (lab report) the experiments will be considered successfully completed if a Testat (exam) is passed. Experiments that were not successfully completed can be repeated once. And b) talk (with discussion; approx. 30 minutes) to test the candidate's understanding of the physics-related contents of the module component. Talks that were not successfully completed can be repeated once. Both components of the assessment have to be successfully completed.							
Allocation of places							
Additional information							
Additional information on module duration: 1 to 2 semesters.							
Workload							
Teaching cycle							
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module	e appea	irs in					
Bachel	or' deg	ree (1 major) Aerospace (Computer Science (20	014)			

Module title					Abbreviation		
Practical Course A 11-P-PA-092-m01							
Module coordinator				Module offered by			
Manag	Managing Director of the Institute of Applied Physics			Faculty of Physics a	nd Astronomy		
ECTS	Metho	od of grading	Only after succ. con	Only after succ. compl. of module(s)			
5	(not) s	successfully completed					
Duratio	on	Module level	Other prerequisites	;			
1 seme	ster	undergraduate					
Contents Physical laws of mechanics, thermodynamics, science of electricity, types of error, error approximation and pro- pagation, graphs, linear regression, average values and standard deviation, distribution functions, significance tests, writing of lab reports and publications.							
Intende	ed learr	ning outcomes					
The stu le to in measur princip Course	idents depenc ring pro les of s s (type,	know and have mastered lently plan and conduct stocol. They are able to tatistics and to draw, p number of weekly con	d physical measuring experiments, to coop evaluate the measurin resent and discuss the tact hours, language –	methods and experin erate with others, an ig results on the basi e conclusions. – if other than Germa	menting techniques. d to document the rest of error propagations. n)	They are ab- esults in a on and of the	
Auswer Ü (1 we Beispie BAM): I	rtung vo ekly co ele aus P (2 we	on Messungen und Feh ntact hour), once a yea Mechanik, Wärmelehre ekly contact hours)	errechnung (Measuren r (winter semester) und Elektrik (Example	ments and Data Anal es from Mechanics, T	ysis): V (1 weekly con hermodynamics and	ntact hour) + Electricity,	
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)							
 This module has the following assessment components 1. Topics covered in lectures and exercises: written examination (approx. 120 minutes) 2. Lab course: a) Preparing, performing and evaluating the experiments will be considered successfully completed if a Testat (exam) is passed. b) Talk (with discussion) to test the students' understanding of the physics-related contents of the course (approx. 30 minutes). 							
Succes	sful co	mpletion of approx. 509	% of practice work is a	prerequisite for adm	ission to assessmer	nt component	
To pass assessment component 2, students must pass both elements a) and b). Students will be offered one op- portunity to retake element a) and/or element b).							
Students must attend Auswertung von Messungen und Fehlerrechnung (Measurements and Data Analysis) befo- re attending Beispiele aus Mechanik, Wärmelehre und Elektrik (Examples from Mechanics, Thermodynamics and Electricity).							
To pass this module, students must pass both assessment component 1 and assessment component 2.							
Allocation of places							
Additional information							
Workload							
Teachi	ng cycl	9					
Referre	ed to in	LPOI (examination reg	ulations for teaching-	degree programmes)			
§ 53 (1)	1. a) P	nysik Mechanik, Wärme	lehre, Elektrizitätsleh	re, Optik, der speziel	len Relativitätstheor	ie	
Bachelor's Science (20	with 1 maj 014)	or Aerospace Computer	JMU Würzburg ● g cord Bachelor (180	enerated 26-Aug-2024 • exam ECTS) Luft- und Raumfahrtinf	n. reg. data re- formatik - 2014	page 55 / 56	

§ 53 (1) 1. c) Physik physikalische Grundpraktika § 77 (1) 1. d) Physik "physikalische Praktika"

Module appears in

Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Physics (2010) Bachelor' degree (1 major) Nanostructure Technology (2010) Bachelor' degree (1 major) Mathematical Physics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Aerospace Computer Science (2009) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' degree (1 major) Aerospace Computer Science (2014) Bachelor' s degree (1 major, 1 minor) Physics (Minor, 2010) No final examination Special study offering (2010)