

# Module Catalogue

for the Subject

# Didactics in Physics (Primary School)

as Didaktikfach

with the degree "Erste Staatsprüfung für das Lehramt an Grundschulen"

> Examination regulations version: 2015 Responsible: Faculty of Physics and Astronomy

JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record L1|813|-|-|H|2015



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# The subject is divided into

section / sub-section	ECTS credits	starting page
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Freier Bereich (general as well as subject-specific electives)		15
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## **Learning Outcomes**

UNIVERSITÄT

WÜRZBURG

German contents and learning outcome available but not translated yet.

## Wissenschaftliche Befähigung

- Die Absolventinnen und Absolventen verstehen die Grundlagen der Physik und können diese anwenden.
- Die Absolventinnen und Absolventen können unter Anleitung Experimente durchführen, analysieren und die erhaltenen Ergebnisse darstellen und bewerten.
- Die Absolventinnen und Absolventen besitzen ein grundlegendes Abstraktionsvermögen und die Fähigkeit, komplexe Zusammenhänge zu strukturieren.

## Befähigung zur Aufnahme einer Erwerbstätigkeit

- Die Absolventinnen und Absolventen können fachliche Inhalte und ihre Erkenntnisse didaktisch aufbereiten und adressatengerecht vermitteln.
- Die Absolventinnen und Absolventen kennen Konzepte, Prinzipien, Methoden und evidenzbasierte Erkenntnisse aus dem Bereich der Physikdidaktik und können diese zur ziel- und adressatengerechten Ausgestaltung von Lehr/Lern-Settings anwenden.
- Die Absolventinnen und Absolventen können den Einsatz von Experimenten und Medien im Physikunterricht und die Betreuung von Schülerinnen und Schülern an ausgewählten Lehr-Lernsituationen wissenschaftlich fundiert reflektieren.

## Persönlichkeitsentwicklung

- Die Absolventinnen und Absolventen kennen die Regeln guter wissenschaftlicher Praxis und beachten sie.
- Die Absolventinnen und Absolventen können ihr Wissen und ihre Erkenntnisse in einer Lehrsituation angemessen und selbstbewusst darstellen.
- Die Absolventinnen und Absolventen besitzen die Fähigkeit didaktisches Wirken in einer Lehr-/ Lernsituation angemessen zu reflektieren und passende Schlussfolgerungen zu ziehen.

## Befähigung zum gesellschaftlichen Engagement

- Die Absolventinnen und Absolventen haben ihr Wissen bezüglich wirtschaftlicher, gesellschaftlicher, naturwissenschaftlicher, kultureller etc. Fragestellungen erweitert (z.B im Hinblick auf Bildung für nachhaltige Entwicklung) und können begründet Position beziehen.
- Die Absolventinnen und Absolventen entwickeln die Bereitschaft und Fähigkeit, ihre Kompetenzen in partizipative Prozesse einzubringen und aktiv an Entscheidungen mitzuwirken.



## 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:

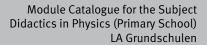
## LASPO2015

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

## 20-Oct-2015 (2015-217)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.





# **Compulsory Courses**

(10 ECTS credits)

Successful completion of modules worth no less than 10 ECTS credits in each subject selected as Didaktikfach (subject studied with a focus on teaching methodology) (mandatory courses) is a prerequisite for admission to the Erste Staatsprüfung (First State Examination) in the subject Didaktik der Grundschule (Didactics for Grundschule). In addition, modules worth another 5 ECTS credits must be successfully completed in one of the subjects selected as Didaktikfach (mandatory electives).

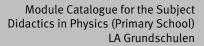
Module title				Abbreviation			
Physics Teaching Concepts 1					11-L-PD1-152-m01		
Module	e coord	inator		Module offered by			
Managing Director of the Institute of Applied Physics			Applied Physics	Faculty of Physics a	nd Astronomy		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
2	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
teachin	ng conc metho	tic study of technical co epts. Student preconce ds, and techniques to c	ptions and typical lea	ming difficulties in so	chool physics, corre	sponding te-	
Intende	ed leari	ning outcomes					
learnin proach and go	g diffic es for s als of tl	erstanding of school-reluties; knowledge of ho elected topics; knowle he school subject Physi and working tools.	w to change student p dge of epistemologica	reconceptions; know I methods of Physics	vledge of alternative ; knowledge of the l	teaching ap- egitimation	
Course	<b>S</b> (type, n	number of weekly contact hours	, language — if other than Ge	rman)			
V (2)							
		<b>sessment</b> (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informat	ion on whether	
b) oral c) oral (	examin examin	mination (approx. 45 m nation of one candidate ation in groups (groups ssessment: German an	each (approx. 10 minu 5 of 2, approx. 10 minu				
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
60 h							
Teachi	ng cycl	e					
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§ 38 I N	Referred to in LPO I (examination regulations for teaching-degree programmes) § 36   Nr. 7 § 38   Nr. 1 § 53   Nr. 2 § 77   Nr. 2						
Module	e appea	ars in					
First state examination for the teaching degree Grundschule Physics (2015) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Physics (2015)							
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School) (20	015)		cord Lehramt G	rundschulen (Didaktikfach) Pł	1YSIK - 2015		



First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)

Module title					Abbreviation		
Physics Teaching Concepts 2 11-L-PD2-3					11-L-PD2-152-m01		
Module	e coord	inator		Module offered by			
Managing Director of the Institute of Applie			pplied Physics	Faculty of Physics a	nd Astronomy		
ECTS Method of grading Only after succ. compl. of module(s)							
3	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
tional g	oals of on of ph	he basic knowledge of s physics, qualification r nysical contents, methor rning.	nodels and education	al standards: elemei	ntarisation and dida	ctic recon-	
Intende	ed learı	ning outcomes					
learning proache and goa	g diffic es for s als of tl	erstanding of school-rele ulties; knowledge of how elected topics; knowled he school subject Physic and working tools.	w to change student p lge of epistemologica	reconceptions; knov I methods of Physics	vledge of alternative ; knowledge of the le	teaching ap- egitimation	
Course	<b>S</b> (type, n	number of weekly contact hours,	language — if other than Ge	rman)			
V (2) +	Ü (1)		_				
		<b>sessment</b> (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	on on whether	
b) oral ( c) oral ( d) term	examin examin paper ge of a	mination (approx. 45 mi nation of one candidate ation in groups (groups (approx. 8 pages) ssessment: German and	each (approx. 10 minu of 2, approx. 10 minu		ſ		
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First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)

Module coo nolder of the ECTS Met		eneral School		11-L-SP1-152-m01
CTS Met				1
ECTS Met			Module offered by	
5 num	e Chair of Physics and its D	idactics	Faculty of Physics a	nd Astronomy
5 num	hod of grading	Only after succ. com	pl. of module(s)	
·	nerical grade			
Julation	Module level	Other prerequisites		
semester	undergraduate			
Contents		<u>,</u>		
Physical cor	itents (mechanics, thermoo Grund- and Hauptschule.	dynamics) relevant to	classes in Natural S	Sciences or technical-natural
	arning outcomes			
classes in G demonstrati	rund- and Hauptschule; kn on and pupils experiments	owledge of typical ap	proaches to the imp	scientific or technical-scientific olementation and evaluation of
	e, number of weekly contact hours, l	anguage — If other than Ger	man)	
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# **Compulsory Electives**

(5 ECTS credits)

	e title				Abbreviation	
Physics	s 2 for	Primary and Secondary G	General School		11-L-SP2-152-m01	
Module coordinator				Module offered by		
holder of the Chair of Physics and its Didactics			idactics	Faculty of Physics a	and Astronomy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	1	rical grade				
Duratio		Module level	Other prerequisites			
1 seme		undergraduate		,		
Conten		undergraduate				
Physica	al conte	ents (science of electricit rund- and Hauptschule.	y, electronics) releva	nt to classes in Natu	ral Sciences or technical-natural	
		ning outcomes				
classes demon	s in Gru stration	nd- and Hauptschule; kn n and pupils experiments	iowledge of typical ap 5.	oproaches to the imp	scientific or technical-scientific olementation and evaluation of	
		number of weekly contact hours,	language — if other than Ger	rman)		
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	ige of a	ation in groups (groups ( ssessment: German and <b>blaces</b>	of 2, approx. 15 minut			
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Langua Allocat  Additio  Worklo	ige of a ion of p onal inf	ssessment: German and blaces	of 2, approx. 15 minut			
Langua Allocat  Additio 	ige of a ion of p onal inf	ssessment: German and blaces	of 2, approx. 15 minut			
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Module	e title				Abbreviation
Physics	s 3 for I	Primary and Secondary G	ieneral School		11-L-SP3-152-m01
Module coordinator				Module offered by	
holder of the Chair of Physics and its Didactics			idactics	Faculty of Physics a	and Astronomy
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5		rical grade		, , , , , , , , , , , , , , , , , , , ,	
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten			I		
Physica	al conte	ents (optics, acoustics, A sciences in Grund- and Ha		ysics) relevant to cla	asses in Natural Sciences or tech
Intende	ed learı	ning outcomes			
classes demon	s in Gru stratior	nd- and Hauptschule; kn n and pupils experiments	owledge of typical ap	pproaches to the imp	scientific or technical-scientific olementation and evaluation of
		umber of weekly contact hours, l	anguage — if other than Ger	man)	
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		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
	ge of a	ation in groups (groups o ssessment: German and, <b>places</b>			
 Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cycl	٩			
	15 cycl	•			
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		mination for the teaching			-



# Freier Bereich (general as well as subject-specific electives)

(ECTS credits)

Teaching degree students must take modules worth a total of 15 ECTS credits in the area Freier Bereich (general as well as subject-specific electives) (Section 9 LASPO (general academic and examination regulations for teaching-degree programmes)). To achieve the required number of ECTS credits, students may take any modules from the areas below.

Freier Bereich -- interdisciplinary: The interdisciplinary additional offer for a teaching degree can be found in the respective Annex "Ergänzende Bestimmungen für den "Freien Bereich" im Rahmen des Studiums für ein Lehramt".



# **Extra Skills Teaching Physics at the German Grundschule** (ECTS credits)

(Freier Bereich (general as well as subject-specific electives) -- subject specific)

Module title				Abbreviation		
Teachi	ng Sem	inar Fundamental Princ	iples		11-L-EL1-152-m01	
Module	e coord	inator		Module offered by		
holder	of the (	Chair of Physics and its	Didactics	Faculty of Physics a	nd Astronomy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
3	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
ceptior sed on	ns and t specifi	nterdisciplinary aspects typical learning difficult c contents of physics eo xperiments and suitable	ies, elementarisation a ducation, verbalisatior	and didactic reconst	ruction of physical co	ontents ba-
Intende	ed lear	ning outcomes				
studen	t preco	alitative knowledge of s nceptions and special r versity and school rega	nedia on relevant topi	cs; awareness of the		
Course	<b>S</b> (type, r	number of weekly contact hours	, language — if other than Ge	man)		
S (2)						
<ul> <li>Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)</li> <li>a) term paper (approx. 8 pages) or</li> <li>b) presentation (approx. 45 minutes) or</li> <li>c) written examination (approx. 45 minutes) or</li> <li>d) oral examination of one candidate each (approx. 15 minutes) or</li> <li>e) oral examination in groups (groups of 2, approx. 15 minutes per candidate)</li> <li>Language of assessment: German and/or English</li> </ul>						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
90 h						
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
§ 22      § 22      § 22	Nr. 1 h) Nr. 2 f)					
Module						
First state examination for the teaching degree Grundschule Physics (2015) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)						
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Module title					Abbreviation	
Selected Topics in Physics Didactics				11-L-EL2-152-m01		
Module	e coord	inator		Module offered by		
			Faculty of Physics a	nd Astronomy		
ECTS Method of grading Only after succ. compl. of module(s)						
		successfully completed				
3 Duratio		Module level				
Duratio	-		Other prerequisites			
1 seme		undergraduate				
Conten	lts					
Current	t topics	in physics education.				
Intend	ed lear	ning outcomes				
		have knowledge of a cu e according to subject-s				y the acqui-
				•	565.	
	<b>S</b> (type, r	number of weekly contact hours	s, language — if other than Ge	rman)		
S (2)						
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a) term	paper	(approx. 8 pages) or				
		n (approx. 45 minutes)	or			
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		ation in groups (group		tes per candidate)		
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		mination for the teachi			, , , , , , , , , , , , , , , , , , ,	- /
LA Grundso	chulen Did	actics in Physics (Primary	JMU Würzburg • g	enerated 18-Apr-2025 • exam	. reg. data re-	page 19 / 43
School) (20				rundschulen (Didaktikfach) Pł	-	

First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020)

First state examination for the teaching degree Mittelschule Physics (2020)

Prepara	e title				Abbreviation		
Preparatory Course Mathematics					11-P-VKM-152-m01		
Module	e coord	linator		Module offered by			
Managing Directors of the Institute of Applied Physics and Faculty of Physics and Astronomy							
the Institute of Theoretical Physics and Astrophysics							
ECTS	Meth	od of grading	Only after succ. compl. of module(s)				
2 (not) successfully completed							
Duratio	on	Module level	Other prerequisites	i			
1 semester undergraduate							
Conten	its		l				
the intr 1. Basic 2. Coor 3. Vector	roducti c geom rdinate ors - ve erential	nathematics and eleme on to and preparation fo etry and algebra systems and complex r ectored values calculus culus	or the modules of Expe			specially for	
Intende	ed lear	ning outcomes					
		know the principles of r studying Theoretical and			ethods which are re	quired for	
Course	<b>S</b> (type,	number of weekly contact hours	s, language — if other than Ge	rman)			
T (2)							
a) exer b) talk	cises (: (appro	ble for bonus) successful completion o x. 15 minutes) offered: Once a year, wir		ox. 6 exercise sheets	) or		
422622		merea. Once a year, wii	iter semester				
			iter semester				
Allocat 	ion of						
Allocat 	ion of	places					
Allocat  Additio 	tion of	places					
Allocat  Additio 	tion of	places					
Allocat  Additio  Worklo	ion of onal inf oad	places Formation					
Allocat  Additio  Worklo 60 h	ion of onal inf oad	places Formation					
Allocat  Additio  Worklo 60 h Teachin	ion of onal inf oad	places Formation		ammes)			
Allocat  Additio  Worklo 60 h Teachin	ng cycl ed to in Nr. 1 h)	places Formation		nmmes)			
Allocat  Additio  Worklo 60 h Teachin  § 22      § 22	ng cycl ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f)	places Formation		ammes)			
Allocat  Additio  Worklo 60 h Teachin  § 22      § 22      § 22      § 22      Bachel	ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea	places formation le LPO I (examination regulation ars in gree (1 major) Physics (	ons for teaching-degree progra				
Allocat Additio Worklo 60 h Teachin § 22      § 22      § 22      Module Bachele Bachele	ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea or's de or's de	places formation le LPO I (examination regulation ars in gree (1 major) Physics ( gree (1 major) Nanostru	2015) cture Technology (201				
Allocat  Additio  Worklo 60 h Teachin  § 22 II I § 22 II I § 22 II I § 22 II I § 22 II I Bachele Bachele	ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea or's de or's de or's de	places formation le LPO I (examination regulation ars in gree (1 major) Physics ( gree (1 major) Manostru gree (1 major) Mathema	2015) cture Technology (201 atical Physics (2015)				
Allocat  Additio  Worklo 60 h Teachin  § 22 II I § 22 II I § 22 II I § 22 II I § 22 II I Bachele Bachele Bachele	ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea or's de or's de or's de	places formation formation le LPO I (examination regulation gree (1 major) Physics ( gree (1 major) Nanostru gree (1 major) Mathema gree (1 major, 1 minor) I	2015) cture Technology (201 Physics (2015)	5)			
Allocat              Additio              Worklo           60 h           Teachin              Referrer           § 22 II I           § 22 II I           § 22 II I           Bachel           Bachel           Bachel           Bachel           First stat	ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea or's de or's de or's de or's de	places formation formation le LPO I (examination regulation gree (1 major) Physics ( gree (1 major) Nanostru gree (1 major) Mathema gree (1 major, 1 minor) I umination for the teaching	2015) 2015) acture Technology (201 atical Physics (2015) Physics (Minor, 2015) ng degree Grundschuld	5) e Physics (2015)	(Primary School) (2	2015)	
Allocat              Additio              Worklo           60 h           Teachin              Referrer           § 22 II I           § 22 II I           § 22 II I           Bachele           Bachele           Bachele           First sta           First sta	ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea or's de or's de or's de ate exa ate exa	places formation formation le LPO I (examination regulation gree (1 major) Physics ( gree (1 major) Nanostru gree (1 major) Mathema gree (1 major, 1 minor) I	2015) 2015] 2015]	5) e Physics (2015) e Didactics in Physics	s (Primary School) (2	2015)	

First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) Bachelor's degree (1 major) Mathematical Physics (2016)

First state examination for the teaching degree Grundschule Physics (2018)

First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018)

First state examination for the teaching degree Realschule Physics (2018)

First state examination for the teaching degree Gymnasium Physics (2018)

First state examination for the teaching degree Mittelschule Physics (2018)

First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018)

Module title			Abbreviation			
Student Lab Supervision (Physics)			11-L-L3B-152-m01			
Module	e coord	inator		Module offered by		
holder	r of the Chair of Physics and its Didactics Faculty of Physics and Astronomy					
ECTS	Metho	od of grading	Only after succ. compl. of module(s)			
2	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
		rovides an introduction t g-learning-laboratory.	o successful supervis	ion of pupils indepe	ndently carrying out	experiments
Intende	ed lear	ning outcomes				
vel of p experin ly and o ve beha terns b	erform nenting criticall aviour J y repea	learn to classify different ance, to support the pup g (supervision competen y evaluate their own acti patterns and to support atedly working on the sar etencies).	ils according to their cies in open classroo ons. A lecturer gives i he students' strength	needs and age and t m situations). The st individual feedback is. The students deve	to help them during i udents are able to m to the students to av elop professional be	independent iethodical- oid negati- haviour pat-
Course	<b>S</b> (type, r	number of weekly contact hours,	language — if other than Gei	rman)		
P (2)						
Method	d of ass	sessment (type, scope, langua	age — if other than German,	examination offered — if no	t every semester, informati	on on whether
module is	creditab	le for bonus)				
b) oral c) oral (	examir examin	mination (approx. 45 mir nation of one candidate e lation in groups (groups (approx. 8 pages)	each (approx. 10 minu			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
This mo	odule is	s designed for students s	studying at least one	subject in the natura	l sciences.	
Worklo	ad					
60 h						
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	is for teaching-degree progra	immes)		
§ 22      § 22      § 22	Nr. 2 f)					
Module	e appea	ars in				
Module appears inFirst state examination for the teaching degree Grundschule Physics (2015)First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015)First state examination for the teaching degree Realschule Physics (2015)First state examination for the teaching degree Gymnasium Physics (2015)First state examination for the teaching degree Gymnasium Physics (2015)First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015)First state examination for the teaching degree Mittelschule Physics (2015)First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)LA Grundschulen Didactics in Physics (PrimaryJMU Würzburg • generated 18-Apr-2025 • exam. reg. data re-Page 23 / 43						
School) (20	o15)		cord Lehramt Gr	undschulen (Didaktikfach) Pł	1ysik - 2015	

First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)

Module title					Abbreviation	
Low Cost - High Impact. Low-budget Experiments for Science Courses (Phy-				11-MIND-Ph1-152-m	01	
sics)				· · ·	-	
Module	coordi	inator		Module offered by		
holder of the Chair of Physics and its Didactics			Didactics	Faculty of Physics a	nd Astronomy	
ECTS	Metho	od of grading	Only after succ. com	· · · · · · · · · · · · · · · · · · ·		
2		uccessfully completed				
Duratio	r	Module level	Other prerequisites			
1 semes		undergraduate				
	l	undergraduate	1			
Conten						
		d realisation of experim nd secondary level I.	ental stations with or	dinary and inexpens	ive consumables for	classes of
		ing outcomes				
			ovnovimonting statio	no to use for the tree	acition from nrimon.	ta cacanda
ry level	I for sn	levelop simple scientific nall groups from differer ant to the curriculum in	nt types of schools. In	doing so, they learn		
		umber of weekly contact hours,				
S (2)	<b>3</b> (type, ii	uniber of weekly contact hours,		indity		
		<b>essment</b> (type, scope, langu le for bonus)	age — if other than German, e	examination offered — if no	t every semester, informati	on on whether
		nination (approx. 45 min ation of one candidate (		tes) or		
c) oral e	examin	ation in groups (groups		-		
d) term	paper	(approx. 8 pages)				
Allocati	ion of p	laces				
Additio	nal info	ormation				
This mo	odule is	designed for students	studying at least one s	subject in the natura	l sciences.	
Worklo	ad					
60 h						
Teachir	ng cycle	2				
	<u></u>	•				
Poforro	d to in	LPO I (examination regulation	-	mmac)		
			is for teaching-degree progra	mmes)		
§ 22    N § 22    N						
§ 22    N	-					
Module	appea	rs in				
		mination for the teachin	g degree Grundschule	Physics (2015)		
		mination for the teachin			s (Primary School) (2	015)
First sta	ate exai	mination for the teachin	g degree Realschule P	hysics (2015)		
		mination for the teachin				
		mination for the teachin			nysics (Middle Schoo	ol) (2015)
		mination for the teachin		•		
		mination for the teachin		•	(Middle School) (20	)15)
		mination for the teachin				->
		mination for the teachin		•	5 (Primary School) (2	018)
		mination for the teachin		-		
LA Grundscl School) (20		actics in Physics (Primary		enerated 18-Apr-2025 • exam undschulen (Didaktikfach) Pł		page 25 / 43

First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020)

First state examination for the teaching degree Mittelschule Physics (2020)

Module	e title				Abbreviation	
Teaching Science with Hands-on-Exhibits (Physics)					11-MIND-Ph2-152-m	01
Module	a coord	inator		Module offered by		
		Chair of Physics and its	Didactics	Faculty of Physics a	nd Astronomy	
ECTS		od of grading	Only after succ. com		ind Astronomy	
2 Duratio		successfully completed Module level				
			Other prerequisites			
1 seme		undergraduate				
Contents						
Designi	ing and	l creating hands-on exh	ibits for STEM subjects	5.		
Intende	ed lear	ning outcomes				
tents in	n and o	evaluate the advantage ut of school. They plan vork with pupils of seco	and implement an inte			
Course	<b>S</b> (type, r	umber of weekly contact hours	, language — if other than Ger	man)		
S (2)						
		<b>essment</b> (type, scope, langu le for bonus)	age — if other than German, e	examination offered — if no	t every semester, informati	on on whether
c) oral e	examin paper	ation of one candidate ation in groups (groups (approx. 8 pages) <b>blaces</b>				
Additio	nal inf	ormation				
		s designed for students	studving at least one s	subiect in the natura	l sciences.	
Worklo				,,		
60 h						
Teachir	ng cycl	۵				
reacin	is cyce					
		LPO I (examination regulation	ns for teaching-degree progra	mmes)		
§ 22      § 22      § 22	Nr. 2 f)					
Module	_	irs in				
First sta First sta First sta First sta First sta First sta	ate exa ate exa ate exa ate exa ate exa ate exa	mination for the teachir mination for the teachir	ng degree Grundschule ng degree Realschule P ng degree Gymnasium ng degree Sonderpäda ng degree Mittelschule ng degree Mittelschule	Didactics in Physics Physics (2015) Physics (2015) gogik Didactics in Ph Physics (2015) Didactics in Physics	nysics (Middle Schoo	bl) (2015)
First sta First sta	ate exa ate exa	mination for the teachir mination for the teachir mination for the teachir mination for the teachir	ng degree Grundschule ng degree Realschule P	Didactics in Physics Physics (2018)	s (Primary School) (2	018)

First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)

Module title					Abbreviation	
Astroph	Astrophysics				11-AP-152-m01	
Module	coord	inator		Module offered by		
Managing Director of the Institute of The and Astrophysics			Theoretical 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				
Contents						
telesco um, mo lactic n	pes an Ieculai uclei, l	onomy, coordinates an d detectors, stellar stru r clouds, structure of th arge-scale structures, o	cture and atmosphere e milky way, the local i	s, stellar evolution a	nd end stages, inter	stellar medi-
		ning outcomes				
physica	ıl obse	are familiar with the mo rvations and evaluation familiar with the physic	ns. They are able to use	these methods to p	lan and analyse owr	n observati-
Courses	<b>5</b> (type, n	umber of weekly contact hour	s, language — if other than Ge	man)		
V (2) + I Module		t in: German or English				
		<b>essment</b> (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
<ul> <li>module is creditable for bonus)</li> <li>a) written examination (approx. 90 to 120 minutes) or</li> <li>b) oral examination of one candidate each (approx. 30 minutes) or</li> <li>c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or</li> <li>d) project report (approx. 8 to 10 pages) or</li> <li>e) presentation/talk (approx. 30 minutes)</li> <li>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</li> <li>Language of assessment: German and/or English</li> </ul>						
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
180 h						
Teaching cycle						
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
§ 22    N § 22    N § 22    N	vr. 2 f)					
Module		irs in				
	hulen Did	actics in Physics (Primary		enerated 18-Apr-2025 • exam undschulen (Didaktikfach) Pł	_	page 29 / 43

#### UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) First state examination for the teaching degree Grundschule Physics (2015) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Master's degree (1 major) Nanostructure Technology (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017) First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) Master's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Physics (2020) Master's degree (1 major) Quantum Technology (2021) exchange program Physics (2023) Bachelor's degree (1 major) Mathematical Physics (2024)

Module title					Abbreviation	
Principles of Energy Technologies 11-ENT-152-m01						
Module	e coord	inator		Module offered by		
Managi	ing Dire	ector of the Institute of	Applied Physics	Faculty of Physics a	and Astronomy	
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
6	nume	rical grade				
Duratio	n	Module level	Other prerequisites	5		
1 seme	1 semester graduate					
Conten	ts					
as rene ting ma student verters. Electric	wable iterials ts. Ene . Nucle ity. Bic	iples of energy conserv resources of energy. W , selective layers, highl rgy conservation via the ar power plants. Hydro mass. Geothermal ene	e also discuss aspects y activated carbons). T ermal insulation. Therr electricity. Wind turbin	of optimising mater he course is especia nodynamic energy ef es. Photovoltaics. Sc	ials (e.g. nanostructu lly suitable for teach ficiency. Fossil fired	ured insula- ing degree energy con-
		ning outcomes	1:55		• •	•
		know the principles of ge. They understand th				
Course	<b>S</b> (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
V (3) + Module		t in: German or English				
Method	d of ass	sessment (type, scope, lang	uage — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
		le for bonus)				
b) oral c c) oral c d) proje e) prese lf a writ stead ta of asse nation Langua Assess	<ul> <li>a) written examination (approx. 90 to 120 minutes) or</li> <li>b) oral examination of one candidate each (approx. 30 minutes) or</li> <li>c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or</li> <li>d) project report (approx. 8 to 10 pages) or</li> <li>e) presentation/talk (approx. 30 minutes)</li> <li>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</li> <li>Language of assessment: German and/or English</li> <li>Assessment offered: Once a year, winter semester</li> </ul>					
Allocat	ion of J	olaces				
Additio	nal inf	ormation				
Workload						
180 h						
Teaching cycle						
		LPO I (examination regulati	ons for teaching-degree progr	ammes)		
§ 22      § 22      § 22	Nr. 2 f)					
Module	_	urs in				
I A Grundee	hulon Did	actics in Physics (Primary		generated 18-Apr-2025 • exam	ren data re-	nage 21 / /2
School) (20		actics III Flipsics (Flillidiy		rundschulen (Didaktikfach) P	-	page 31 / 43

#### UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) First state examination for the teaching degree Grundschule Physics (2015) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) Master's degree (1 major) Functional Materials (2016) First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Physics (2020) Bachelor's degree (1 major) Quantum Technology (2021) Master's degree (1 major) Functional Materials (2022) exchange program Physics (2023) Master's degree (1 major) Functional Materials (2025)

Module title				Abbreviation			
Current Topics of Teaching Concepts in Physics11-L-APD-152-m01							
Module	e coord	inator		Module offered by			
chairpe	erson o	f examination committe	ee	Faculty of Physics a	ind Astronomy		
ECTS		od of grading	Only after succ. com	· · · ·			
3	1	rical grade					
Duratio		Module level	Other prerequisites				
1 seme		undergraduate					
Conten		unuergraduate					
		in physics advection					
		in physics education.					
		ning outcomes					
			rrent subdiscipline of p specific contexts and ir			y the acqui-	
Course	<b>S</b> (type, r	number of weekly contact hour	s, language — if other than Ger	rman)			
S (2) Module	e taugh	t in: German or English					
			uage — if other than German, e	examination offered — if no	t every semester information	ion on whethor	
		le for bonus)		examination onered — if no	n every semester, informati		
		mination (approx. 45 m	inutes) or				
			each (approx. 10 minu	ites) or			
			s of 2, approx. 10 minut	tes per candidate) or	r		
		(approx. 8 pages) or					
		45 minutes) with discus	51011				
Allocat	tion of p	Diaces					
			_				
Additio	onal inf	ormation					
Worklo	ad						
90 h							
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulati	ons for teaching-degree progra	mmes)			
	Nr. 1 h)		•				
§ 22	Nr. 2 f)						
§ 22	Nr. 3 f)						
Module appears in							
			ng degree Grundschule				
			ng degree Grundschule	•	s (Primary School) (2	2015)	
First state examination for the teaching degree Realschule Physics (2015)							
			ng degree Gymnasium	•			
1			ng degree Sonderpäda		iysics (Middle Schoo	01) (2015)	
	First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)						
	First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Grundschule Physics (2018)						
			ng degree Grundschule	-	s (Primarv School) (ว	2018)	
1			ng degree Realschule F	•	,,, ( <b>-</b>	- /	
I A Grunder	chulen Did	actics in Physics (Primary	- IMII Würzburg • g	enerated 18-Apr-2025 • exam	reg data re-	page 33 / 43	
School) (20		actics in Enysics (Entitlaty		undschulen (Didaktikfach) Pl	-	Puse 33 / 43	

First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)

First state examination for the teaching degree Mittelschule Physics (2020)

Module title					Abbreviation		
Scienti	Scientific Work in Teaching Concepts 11-L-WPD-152-mo1						
Module	e coord	inator		Module offered by	le offered by		
Manag	ing Dire	ector of the Institute of A	nnlied Physics	Faculty of Physics a	nd Astronomy		
ECTS	<u> </u>	od of grading	Γ	Daly after succ. compl. of module(s)			
	1						
3		successfully completed					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conten	nts						
Curren	t topics	in scientific work in phy	sics education				
Intend	ed lear	ning outcomes					
The stu	udents	have knowledge of a cur	rent subdiscipline of	physics education ar	nd are able to proces	s questions	
		ucation on the basis of s		,	· · · · · · · · · ·		
Course	<b>S</b> (type, r	number of weekly contact hours,	language — if other than Ge	rman)			
S (2)							
	e taugh	t in: German or English					
Metho	d of ass	sessment (type, scope, langua	age — if other than German,	examination offered — if no	t every semester, informati	on on whether	
		ole for bonus)			, ,		
talk (30	o to 45	minutes)					
	tion of p						
Additio	onal inf	ormation					
	_						
Worklo	ad						
90 h							
Teachi	ng cycl	e					
Referre	ed to in	LPOI (examination regulation	is for teaching-degree progra	immes)			
	Nr. 1 h)						
§ 22							
§ 22							
Module	e appea	ars in					
		mination for the teachin	g degree Grundschule	Physics (2015)			
		mination for the teachin		-	s (Primary School) (2	015)	
		mination for the teachin		•	. , , , .	<i></i>	
First st	ate exa	mination for the teaching	g degree Gymnasium	Physics (2015)			
First st	ate exa	mination for the teaching	g degree Sonderpäda	gogik Didactics in Ph	nysics (Middle Schoo	ol) (2015)	
First st	ate exa	mination for the teaching	g degree Mittelschule	Physics (2015)			
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)							
First state examination for the teaching degree Grundschule Physics (2018)							
		mination for the teaching		•	s (Primary School) (2	018)	
		mination for the teaching		•			
		mination for the teachin		-			
		mination for the teachin				A 4 5	
1		mination for the teaching					
First st	ate exa	mination for the teachin	g degree Mittelschule	Didactics in Physics	6 (Middle School) (20	018)	
LA Grundso School) (20		lactics in Physics (Primary		enerated 18-Apr-2025 • exam rundschulen (Didaktikfach) Pł	-	page 35 / 43	

#### Julius-Maximilians-UNIVERSITÄT WÜRZBURG

First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Physics (2020)

Module title				Abbreviation		
Current	t Topic	s in Physics			11-LX6-152-m01	
Module	e coord	inator		Module offered by		
chairpe	erson o	f examination committe	e	Faculty of Physics a	nd Astronomy	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
6	nume	rical grade		· · · · · ·		
Duratio		Module level	Other prerequisites			
1 seme		undergraduate		ination committee re	equired	
Conten		understaddate			iquireu.	
		in physics.				
		ning outcomes			1.11 .	1/ 1
lation r	nethod	have knowledge of a cu s necessary to acquire t lication areas.	•		•	
Course	<b>S</b> (type, r	number of weekly contact hours	, language — if other than Gei	man)		
V (3) +	R (1)					
Metho	d of ass	<b>Sessment</b> (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	on on whether
b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may in- stead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original exami- nation date at the latest. Language of assessment: German and/or English Allocation of places 						
		ormation				
Worklo	ad					
180 h			_			
Teachi		0				
reacini	is cyci	6				
Referred to in LPO I (examination regulations for teaching-degree programmes)         § 22 II Nr. 1 h)         § 22 II Nr. 2 f)         § 22 II Nr. 3 f)						
Module appears in						
First sta First sta First sta First sta	ate exa ate exa ate exa ate exa	mination for the teachir mination for the teachir	ng degree Grundschule ng degree Realschule F ng degree Gymnasium ng degree Sonderpäda	e Didactics in Physics Physics (2015) Physics (2015) gogik Didactics in Ph		
•	hulen Did	actics in Physics (Primary	JMU Würzburg • g	enerated 18-Apr-2025 • exam undschulen (Didaktikfach) Pł	•	page 37 / 43

First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Mittelschule Physics (2020) First state examination for the teaching degree Mittelschule Physics (2020) First state examination for the teaching degree Mittelschule Physics (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)

Module title					Abbreviation	
Selecte	ed Topi	cs of Physics			11-LCS6-152-m01	
Module	e coord	inator		Module offered by		
chairpe	erson o	f examination committe	e	Faculty of Physics a	nd Astronomy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
4	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Approval from exam	ination committee re	equired.	
Conten	ts					
Current study a	•	in experimental physic	s. Credited academic a	achievements, e.g. ir	ι case of change of ι	iniversity or
Intende	ed lear	ning outcomes				
sics of t underst classify	the Bao tand th / the su	have advanced compete chelor's programme. Th le measuring and/or eva lbject-specific contexts	ey have knowledge of aluation methods nece and know the applicat	a current subdiscipli essary to acquire this ion areas.	ne of Experimental F	Physics and
		number of weekly contact hours	, language — if other than Ger	man)		
V (2) +						
		<b>sessment</b> (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informat	ion on whether
c) oral e d) proje e) prese If a writ stead ta of asse nation	examin ect repo entatio ten exa ake the ssmen date at	nation of one candidate ation in groups (groups ort (approx. 8 to 10 page n/talk (approx. 30 minu amination was chosen a e form of an oral examin t is changed, the lecture the latest. ssessment: German an	of 2, approx. 30 minu es) or ites) is method of assessmo ation of one candidate er must inform student	tes per candidate) of ent, this may be char e each or an oral exar	nged and assessmen mination in groups.	If the method
Allocat	ion of <sub>l</sub>	olaces				
Additio	nal inf	ormation				
 Worklo	ad		_			
120 h						
	ng cycl	Δ				
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
§ 22    Nr. 1 h) § 22    Nr. 2 f)						
§ 22 II Nr. 3 f) Module appears in						
First sta First sta First sta First sta	ate exa ate exa ate exa ate exa	mination for the teachir mination for the teachir mination for the teachir mination for the teachir	ng degree Grundschule ng degree Realschule F ng degree Gymnasium	e Didactics in Physics Physics (2015) Physics (2015)		_
LA Grundsc School) (20		actics in Physics (Primary		enerated 18-Apr-2025 • exam undschulen (Didaktikfach) Pł	-	page 39 / 43



First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Physics (2020)

Module	e title				Abbreviation	
Experin	nents f	or science courses in pri	mary schools		11-L-NEGS-152-m01	
Module	Module coordinator			Module offered by		
holder	of the (	Chair of Physics and its D	idactics	Faculty of Physics a	nd Astronomy	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
2	(not) s	successfully completed				
Duration Module level Other prerequisites						
1 seme	ster	undergraduate				
Conten	ts		<u>L</u>			
	curricu	ılum of Grundschule; pur			chemical contexts suitable for the l contexts; characteristic student	
Intende	ed leari	ning outcomes				
experin	nents s				difficulties; knowledge of pupils competencies in developing and	
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	rman)		
S (2)						
module is	creditab	s <b>essment</b> (type, scope, langua le for bonus) nination (approx. 45 min		examination offered — if no	t every semester, information on whether	
b) oral c) oral (	examin examin	ation of one candidate e ation in groups (groups ( (approx. 8 pages)	ach (approx. 10 minu	-		
Allocat						
20 plac follows as they	es. Sho : Optio becom	ould the number of appli n 1: (1) Places will be allo	ocated by lot. (2) A wa ) Places will be alloca	aiting list will be main ated according to the	laces, places will be allocated as ntained and places re-allocated number of subject semesters. ilable.	
Additio	nal inf	ormation				
Worklo	ad					
60 h						
Teachi	ng cycl	e				
	<u> </u>					
Referre	d to in	<b>LPO I</b> (examination regulation	s for teaching-degree progra	mmes)		
Referred to in LPO I (examination regulations for teaching-degree programmes)         § 22 II Nr. 1 h)						
Module appears in						
		mination for the teaching	g degree Grundschule	Physics (2015)		
				• -	s (Primary School) (2015)	
		mination for the teaching		•	· · · ·	
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018)						
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020)						
First state examination for the teaching degree Grundschule Physics (2020)						





# Thesis

(10 ECTS credits)

Preparation of a written Hausarbeit (thesis) in accordance with the provisions of Section 29 LPO I (examination regulations for teaching-degree programmes) is a prerequisite for teaching degree students to be admitted to the Erste Staatsprüfung (First State Examination). In accordance with the provisions of Section 29 LPO I, students studying for a teaching degree Grundschule may write this thesis in the subject Didaktik der Grundschule (Didactics of Grundschule), in the subject they selected as Unterrichtsfach (subject studied with a focus on the scientific discipline) or in the subject Erziehungswissenschaften (Educational Science). Pursuant to Section 29 Subsection 1 Sentence 2 LPO I, students may also choose to write an interdisciplinary thesis.

Module	Module title Abbreviation					
Thesis i	in Phys	sics Primary General Sch	ool		11-L-HA-GS-DF-152-m01	
Module	Module coordinator Module offer					
chairpe	rson of	f examination committee		Faculty of Physics a	and Astronomy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1-2 sem	ester	undergraduate				
Content	ts					
Indeper	ndent p	processing of a topic of P	hysics and/or Didact	ics of Physics, chose	en in consultation with a lecturer.	
Intende	d learr	ning outcomes				
and me due cor	thods isidera	acquired in the teaching tion of didactic aspects.	degree programme. 1	They are able to pres	while applying the knowledge ent their results in written form in	
		umber of weekly contact hours, l	anguage — if other than Ger	man)		
No cour	ses as	signed to module				
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
prox. 40 Langua	o pages ge of a	5)	-	-	aching-degree programmes) (ap- on 4 LPO I (examination regulati-	
Allocati	on of p	olaces				
Additio	nal info	ormation				
Workloa	ad					
300 h						
Teachin	Teaching cycle					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
§ 29						
Module	Module appears in					
First sta	ite exa	mination for the teaching	g degree Grundschule	Didactics in Physic	s (Primary School) (2015)	
		-	-	-	s (Primary School) (2018)	
First sta	ite exa	mination for the teaching	g degree Grundschule	Didactics in Physic	s (Primary School) (2020)	