

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Physics as a Bachelor's with 1 major with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Faculty of Physics and Astronomy

Examination regulations version: 2020

Abbreviations used: Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V**

= lecture

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

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

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

= list of modules

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

Conventions for the modules in this SFB:

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

Information on assessment procedures:

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

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

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

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

ASP02015

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

22-Jan-2020 (2020-10)

??-???-2024 (2024-??)

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

Every module will be described using the following form:

Abbreviation	Module title		,								
	ECTS	I	Duration	(in semesters)	Method of grading		Module level				
	Courses		To be spe	To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y							
	Method of as	sessme	ent								
	Only after succompletion o		l if applica	if applicable							
	Other prereq	uisites	if applica	if applicable							
	Participants and allocation of places		cati- if applica	if applicable							
	Additional information		on if applica	if applicable							
	Referred to in	ı LPO I	if applica	if applicable (examination regulations for teaching-degree programmes)							

Compulsory Cours	ses (129 ECTS credit	s)										
Modules Experime	Nodules Experimental Physics											
Classical Physics	lassical Physics (16 ECTS credits)											
11-E-M-152-m01	Classical Physics 1 (Mechanics)											
	ECTS 8 D	uration	1 semester	Method of grading	numerical grade	Modul level	undergraduate					
	Courses		(4) + Ü (2) lodule taught in: Ü: Gern	nan or English		,						
	Method of assess		written examination (approx. 120 minutes) Language of assessment: German and/or English									
	other prerequisite	SL	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.									
	Additional Inform	co ne th st fo	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.									
	Referred to in LPC		§ 53 Nr. 1 a) § 77 Nr. 1 a)									

11-E-E-152-m01	Classic	cal Phy	sics 2 (Hea	at and	- Electromagnetism)					'	
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade		Modul level	undergraduate	
	Course	!S			+ Ü (2) ıle taught in: Ü: Ger	man or English					
	Metho	d of ass	sessment	written examination (approx. 120 minutes) Language of assessment: German and/or English							
	other p	orerequi	isites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.							
	Addition	onal Info	ormation	consi neral the q stude for ar sessr	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASI neral academic and examination regulations). If the module coordinators subsequently find that the student has obtain the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only students that meet the respective prerequisites can successfully register for an assessment. Students who did not register an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective sessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assess will not be considered.						
	Referre	ed to in	LPO I	§ 53 Nr. 1 a) § 77 Nr. 1 a)							
Optics and Quantu	m Physi	cs I (6 I	ECTS credi	ts)							
11-E-OAV-152-m01	Optics	and Qu	ıantum Ph	ysics							
	ECTS	6	Duratio	n	2 semester	Method of grading	numerical grade		Modul level	undergraduate	
	Course	25		V (4)	+ V (4)	`					
	Metho	d of ass	sessment			candidate each (appr t: German and/or Eng					
Optics and Quantu	m Physi	cs II (10	ECTS cre	dits)							
11-E-OA-152-m01	Optics	and Wa	aves - Exe	rcises							
	ECTS	5	Duratio	1	1 semester	Method of grading	numerical grade		Modul level	undergraduate	
	Courses				Ü (2) Module taught in: Ü: German or English						
	Method of assessment				written examination (approx. 120 minutes) Language of assessment: German and/or English						
				§ 53 Nr. 1 a) § 77 Nr. 1 a)							

11-E-AA-202-m01	Atoms and	Molecules -	xercises							
	ECTS 5	Duratio	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses		Ü (2)	•		•				
			Module taught in: Germa							
	Method of a	assessment	written examination (ap		• 1					
	1	100 \$	Language of assessment: German and/or English							
Structure of Matter		<u> </u>								
11-E-F-152-m01		n to Solid St								
	ECTS 8	Duratio								
	Courses		(4) + Ü (2) Iodule taught in: Ü: German or English							
	NA - 411 - 6 -									
	Method of a	assessment	written examination (ap Language of assessmen		ish					
11-E-T-152-m01	Nuclear and	uclear and Elementary Particle Physics								
	ECTS 6	Duration		Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V (3) + Ü (1)				J em a vigi a a a a a			
			Module taught in: Ü: Ge	rman or English						
	Method of a	assessment	written examination (ap							
			Language of assessmen	t: German and/or Engl	ish					
Modules Theoretica	al Physics									
Mechanics and Qua	antum Mecha	anics (16 ECT	'S credits)							
11-T-M-152-m01	Theoretical	Mechanics								
	ECTS 8	Duratio		Method of grading	numerical grade	Modul level	undergraduate			
	Courses		V (4) + Ü (2)							
			Module taught in: Ü: German or English							
	Method of a	assessment	written examination (ap Language of assessmen	prox. 120 minutes) t: German and/or Engl	ish					
	other prered	quisites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.							
	Additional Information		Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.							

11-T-Q-152-m01	Quantum Mechanics											
	ECTS 8	Duratio	n 1 semester	Method of grading numerical grade	Modul level	undergraduate						
	Courses		V (4) + Ü (2) Module taught in: Ü: Ge	rman or English								
	Method of as	sessment		written examination (approx. 120 minutes) Language of assessment: German and/or English								
	other prerequ	uisites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.									
	Additional Inf	formation	considered a declaration neral academic and exathe qualification for adrestudents that meet the for an assessment or who have the statement of the	nt registers for the exercises and obtains the quant of will to seek admission to assessment pursumination regulations). If the module coordinate mission to assessment, they will put the student respective prerequisites can successfully registences registration for an assessment was not put akes an assessment to which he/she has not be	uant to Section 20 Su ors subsequently find t's registration for ass er for an assessment. t into effect will not be	bsection 3 Sentence 4 ASPO (gethat the student has obtained sessment into effect. Only those students who did not register admitted to the respective as-						
Statistical Physics	and Electrody	namics I (6	ECTS credits)									
11-T-SE-152-m01	Statistical Ph	ysics and	Electrodynamics									
	ECTS 6	Duratio	n 2 semester	Method of grading numerical grade	Modul level	undergraduate						
	Courses	,	V (4) + V (4)		·							
	Method of as	sessment	oral examination of one Language of assessmer	oral examination of one candidate each (approx. 30 minutes) Language of assessment: German and/or English								
Statistical Physics	and Electrody	namics II (:	10 ECTS credits)									
11-T-SA-152-m01	Statistical Ph	ysics - Exe	ercises									
	ECTS 5	Duratio		Method of grading numerical grade	Modul level	undergraduate						
	Courses		Ü (2) Module taught in: Ü: Ge	rman or English								
	Method of as	sessment	written examination (ap Language of assessmer	prox. 120 minutes) nt: German and/or English								
11-T-EA-152-m01	Electrodynam	nics - Exerc	ises									
	ECTS 5	Duratio		Method of grading numerical grade	Modul level	undergraduate						
	Courses		Ü (2) Module taught in: Ü: Ge	rman or English								
	Method of as	sessment		written examination (approx. 120 minutes) Language of assessment: German and/or English								

Modules Mathema	atics										
Mathematics 1 and	d 2 (16 EC	TS cred	lits)								
10-M-PHY1-152-	Mathem	natics 1	for Stud	ents of	Physics and Nanos	tructure Technology					
mo1	ECTS	8	Duratio	n 1 semester		Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		V (5) - Modu	V (5) + Ü (2) Module taught in: Ü: German or English						
			.,	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus							
10-M-PHY2-152-	Mathem	natics 2	for Stud	ents of	Physics and Nanos	tructure Technology					
mo1	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses				V (5) + Ü (2) Module taught in: Ü: German or English						
	Method of assessment		essment	a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus							
Mathematics 3 an	d 4 (16 EC	TS cred	lits)								
11-M-D-152-m01	Mathem	natics 3	for Stud	ents of	Physics and relate	d Disciplines (Differe	ntial Equations)				
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5			+ Ü (2) ıle taught in: Ü: Gerr	nan or English					
	Method of assessment			written examination (approx. 120 minutes) Language of assessment: German and/or English							
11-M-F-152-m01	Mathem	natics 4	for Stud	ents of	Physics and relate	d Disciplines (Compl	ex Analysis)				
	ECTS	8	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	Courses			V (4) + Ü (2) Module taught in: Ü: German or English						
	Method of assessment			written examination (approx. 120 minutes) Language of assessment: German and/or English							

Modules Lab Cours	se Physic	cs										
Laboratory Course	Physics	(19 ECT	S credits)								
11-P-PA-152-m01	Labora	tory Co	urse Phys	ics A (Mechanics, Heat, El	ectromagnetism)						
	ECTS	3	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Course	:S		P (2)								
	Method	d of ass	essment	Prepa pleted comp sics-r	practical assignment with talk (approx. 30 minutes) Preparing, performing and evaluating (record of readings or lab report) the experiments will be considered successfully completed if a Testat (exam) is passed. Exactly one experiment that was not successfully completed can be repeated once. After completion of all experiments, talk (with discussion; approx. 30 minutes) to test the candidate's understanding of the physics-related contents of the module. Talks that were not successfully completed can be repeated once. Both components of the assessment have to be successfully completed.							
11-P-PB-152-m01	Labora	tory Co	urse Phys	ics B (Classical Physics, E	lectricity, Circuits)						
	ECTS	8	Duratio	n	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Courses			P (2) -	P (2) + P (2)							
	Method of assessment			Prepa pleted comp sics-r	Preparing, performing and evaluating (record of readings or lab report) the experiments will be considered successfully completed if a Testat (exam) is passed. Exactly one experiment that was not successfully completed can be repeated once. After completion of all experiments, talk (with discussion; approx. 30 minutes) to test the candidate's understanding of the physics-related contents of the module. Talks that were not successfully completed can be repeated once. Both components of the assessment have to be successfully completed.							
	other p	other prerequisites		Students are highly recommended to complete modules 11-P-PA and 11-P-FR1 prior to completing module 11-P-PB.								
11-P-PC-202-m01	Advanc	ed Lab	oratory Co	ourse F	hysics C (Modern P	hysics, Computer Ai	•					
	ECTS	8	Duratio		2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Course	·S		P (2) + P (2) Module taught in: German or English								
	Method of assessment			practical assignment with talk (approx. 30 minutes) Preparing, performing and evaluating (record of readings or lab report) the experiments will be considered successfully completed if a Testat (exam) is passed. Exactly one experiment that was not successfully completed can be repeated once. After completion of all experiments, talk (with discussion; approx. 30 minutes) to test the candidate's understanding of the physics-related contents of the module. Talks that were not successfully completed can be repeated once. Both components of the assessment have to be successfully completed. Language of assessment: German and/or English								
	other prerequisites			Stude	ents are highly recon	nmended to complet	e module 11-P-PB prior to comp	oleting module 1	1-P-PC.			

Compulsory Electives (21 ECTS credits)
In the area of mandatory electives, students must achieve no less than 12 ECTS credits in graded modules. In the area of mandatory electives, students must complete mo-

dules worth a total					icilieve no less thai	ii 12 LC13 ciedits iii gi	aueu mouules. In the area of r	nanuatory elect	ives, students must complete mo-		
Modules Chemistry	, Compu	ter Scie	ence, Mat	hemat	ics						
o8-AC-Ex-	Experim	nental C	hemistry	,							
Chem-152-m01	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5		V (4)							
	Method	of asse	essment		n examination (app lage of assessment	orox. 90 minutes) : German and/or Engl	ish				
08-ACP-NF-152-	General	and Ar	alytical (Chemis	nemistry for students of natural sciences (lab)						
mo1	ECTS 2 Duratio			1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	5		P (4)	'(4)						
	Modules successfully			and a Asses	Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Assessment offered: Once a year, summer semester Language of assessment: German and/or English						
	Module complete		ssfully	08-AC	-ExChem						
08-0C-NF-152-m01	Organic	Chemi	stry for s	tudent	s of medicine, biom	nedicine, dental medi	cine and natural sciences				
			Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses			V (2)					_		
	Method of assessment			written examination (approx. 60 minutes) Language of assessment: German and/or English							
10-I-GdP-172-m01	Fundamentals of Programming										
	ECTS	5	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Courses	5	_	V (2) -	+ Ü (2)						
	Method of assessment			written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus							
10-I-NPP-182-m01	Progran	nming (Course fo	r natur	al sciences						
	ECTS	5	Duration	ו		Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses			P (3)							
	Method	of asse	essment	practi	cal examination (pr	rogramming exercises	, approx. 120 hours) and writte	en examination	(approx. 30 to 60 minutes)		

10-M-COM-152-	Compu	tational	l Mathem	atics		-		-						
mo1	ECTS	4	Duration	n	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate						
	Course	S		V (1) +	- Ü (2)		•							
	Method	of ass	essment		project in the form of programming exercises (approx. 20 to 25 hours)									
				Asses	Assessment offered: Once a year, winter semester Language of assessment: German and/or English									
	Doforro	d to in L	DO I		22 II Nr. 3 f)									
10-M-NUM1af-152-					1 for students of other subjects									
mo1	ECTS	10	Duration		1 semester	Method of grading numerical grade	Modul level	undergraduate						
	Course		Duration	V (4) -		Method of grading numerical grade	Modulitevel	undergraduate						
			occment	` ' '		oprox. 90 to 180 minutes, usually chosen) or b) or	al evamination o	fone candidate each (15 to 20 mi-						
	Method	ı 01 assı	essillelli			ion in groups (groups of 2, 10 to 15 minutes per ca		Tone candidate each (15 to 30 iiii-						
				Langu	anguage of assessment: German and/or English									
				creditable for bonus										
10-M-NUM2af-152- mo1			_		or students of other subjects									
11101	ECTS 10 Duratio			1 semester	Method of grading numerical grade	Modul level	undergraduate							
	Course		_	V (4) -										
	Method of assessment			a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate)										
					Language of assessment: German and/or English									
					creditable for bonus									
10-M-PRG-152-m01	Progra	mming	g course for students of Mathematics and other subjects											
	ECTS	3	Duration	1	1 semester	Method of grading (not) successfully completed	d Modul level	undergraduate						
	Course	S		P (2)			·							
	Method	d of ass	essment	proje	t in the form of prog	ramming exercises (approx. 20 to 25 hours)								
						e a year, summer semester German and/or English								
	Doforro	d to in L	DO I	_		German and/or English								
10-M-MWR-152-			Computat		l Nr. 3 f)			,						
10-101-10100 K-152-	ECTS		Duration		ï	Mothod of grading numerical grade	Modul level	undorgraduato						
	Course		Duration		1 semester Method of grading numerical grade Modul level undergraduate V (4) + Ü (2)									
	Course	5			le taught in: Germar	n and/or English								
	Method	d of asso	essment			oprox. 90 to 180 minutes, usually chosen) or b) or	al examination o	f one candidate each (15 to 30 mi-						
				nutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate)										
				Language of assessment: German and/or English										
				credit	able for bonus			creditable for bonus						

11-GRT-152-m01	Group 7	Theory										
	ECTS	6	Duratio	า	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S			V (2) + R (2) Module taught in: German or English							
	Method	d of asso	essment	amina on/ta If a w form the le	vritten examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the orm 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. Language of assessment: German and/or English							
Modules Applied I	Physics											
11-CP-152-m01	<u> </u>		l Physics					-				
	ECTS	6	Duratio		1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course	S	_		V (3) + R (1) Module taught in: German or English							
	Method	Method of assessment			written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or camination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or preson/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead to form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: Once a year, winter semester Language of assessment: German and/or English							
11-EL-152-m01	Electro	nic Circ	uits									
	ECTS	6	Duratio	1	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course	S		V (3) + R (1) Module taught in: German or English								
	Method	d of asso	essment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Assessment offered: Once a year, summer semester Language of assessment: German and/or English								

11-LMT-152-m01	Labora	tory and	d Measure	ement	Technology							
	ECTS	6	Duratio	n	1 semester	Method of grading numeric	al grade	Modul level	undergraduate			
	Course	S			V (3) + R (1) Module taught in: German or English							
	Method	l of ass	essment	aminaton/tallf a w form the leads	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Assessment offered: Once a year, winter semester Language of assessment: German and/or English							
11-LVW-152-m01	Introdu	ıction to	o Labview									
	ECTS 6 Duratio			n	1 semester	Method of grading numeric	al grade	Modul level	graduate			
	Courses				V (1) + R (3) Module taught in: German or English							
	Method	101 455	essment	amination/tallf a with form the leads	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or present on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is chathe lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: Once a year, winter semester Language of assessment: German and/or English							
11-LMB-152-m01	Labora	tory and	d Measure	ement	Technology in Biop	hysics						
	ECTS	6	Duratio	n	1 semester	Method of grading numeric	al grade	Modul level	graduate			
	Course	S		V (3) + R (1) Module taught in: German or English								
	Method	l of ass	essment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Assessment offered: Once a year, summer semester Language of assessment: German and/or English								

11-ZDR-152-m01	Princip	les of 1	wo- and T	hree-	Dimensional Rönt	tgen Imaging						
	ECTS	6	Duration	n	1 semester	Method of grading numerical grade		Modul level	graduate			
	Course	S	,) + R (1) lule taught in: Gerr	man or English	,					
	Method	d of ass	sessment	amir on/t If a v form the l Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Assessment offered: Once a year, summer semester Language of assessment: German and/or English							
11-BMS-152-m01		—	ods at the	<u> </u>	hroton							
	ECTS	6	Duration	า	1 semester	Method of grading numerical grade		Modul level	undergraduate			
	Course	S			V (3) + R (1) Module taught in: German or English							
	Method	101 055	sessment	amir on/t If a v form the l Asse	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: Once a year, summer semester Language of assessment: German and/or English							
11-ZMB-152-m01	Method	ds of No	on-Destru	ctive	Material Testing							
	ECTS	4	Duration	า	1 semester	Method of grading numerical grade		Modul level	undergraduate			
	Course	S		V (2) + R (1) Module taught in: German or English								
	Method	i of ass	sessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Assessment offered: Once a year, winter semester Language of assessment: German and/or English								

11-ASI-152-m01	Imagin	g Sens	ors in Infra	ared								
	ECTS	3	Duration	า	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course	S		V (2) Modu	ıle taught in: Germa	n or English						
	Method	l of ass	essment	amination/tallf a with form the leads	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral exmination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). To 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. Assessment offered: Once a year, summer semester anguage of assessment: German and/or English							
11-EBV-152-m01	Princip	les of I	mage Prod	essin	g		·					
	ECTS 3 Duration			1	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course	S		V (2) Modu	(2) lodule taught in: German or English							
	metnoc	1 or ass	essment	amination/tallf a with the leading Assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minute amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) of on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may insteform of an oral examination of one candidate each or an oral examination in groups. If the method of assessment he lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: Once a year, winter semester Language of assessment: German and/or English							
11-SDC-152-m01	Statisti	ics, Dat	a Analysi:	s and (Computer Physics							
	ECTS	4	Duration	า	1 semester	Method of grading numerical grade	Modul level	graduate				
	Course	S		V (2) + R (1) Module taught in: German or English								
	Method	l of ass	essment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Assessment offered: Once a year, winter semester Language of assessment: German and/or English								

Modules Astrophy	sics										
11-AP-152-m01	Astropl	hysics									
	ECTS	6	Duratio		1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		V (2) + R (2) Module taught in: German or English							
	Method	d of ass	essment	a) written examination (approx. 90 to 120 minutes) or 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 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. Language of assessment: German and/or English							
	Referred to in LPO I			§ 22 l	§ 22 Nr. 1 h) § 22 Nr. 2 f) § 22 Nr. 3 f)						
11-APP-152-m01	Laboratory Course Astrophysics										
	ECTS	6	Duratio	1	1 semester	Method of grading	(not) successfully complete	d Modul level	graduate		
	Course	Courses			le taught in: Germar	n or English					
	Method	Method of assessment			a) Preparing, performing and evaluating the experiments will be considered successfully completed if a Testat (exam) is passed. Experiments that were not successfully completed can be repeated once. Or b) discussion to test the candidate's understanding of the physics-related contents and results of the experiment (approx. 20 minutes). Language of assessment: German and/or English						
Modules Particle I	Physics										
11-TPS-152-m01	Particle	e Physic	s (Standa	ard Mo	del)						
	ECTS	8	Duratio	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		V (4) + R (2) Module taught in: German or English							
	Method	d of ass	essment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English							

11-QFT1B-202-m01	Quantu	ım Field	l Theory I									
	ECTS	8	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			V (4) + R (2) Module taught in: German or English							
	Method	d of ass	essment	oral e prese If a w form the le Lange	a) written examination (approx. 90 to 120 minutes) or 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 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. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-DTS-152-m01	Particle	e Radia	tion Detec	tors								
	ECTS	4	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate			
	Course	S			(2) + R (1) Module taught in: German or English							
				amination/tallf a w form the leads	ation in groups (g lk (approx. 30 mi ritten examination of an oral examin cturer must infor ssment offered: O	oups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or pro			sessment may instead take the ethod of assessment is changed,			
11-RTTB-232-m01	Theory of Relativity											
	ECTS Course	6 s	Duration	n 1 semester Method of grading numerical grade Modul level undergraduate V (3) + R (1) Module taught in: German or English								
	Method	d of ass	essment	a) written examination (approx. 90 to 120 minutes) or 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 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. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following semester								
	Additio	nal Info	rmation	Appro	oval from examina	ition committee required						

Modules Semicon	ductor P	hysics										
11-HLF-152-m01	Semic	onducto	or Lasers a	nd Photonics								
	ECTS	6	Duration	1 semester	Method of grading numerical grade	Modul level	graduate					
	Course	es		V (3) + R (1)		·						
					Module taught in: German or English							
	Metho	d of ass	sessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Assessment offered: Once a year, summer semester Language of assessment: German and/or English								
11-HLP-152-m01	Funda	mentals	of Semico	onductor Physics								
	ECTS 6 Duration			1 semester	Method of grading numerical grade	Modul level	undergraduate					
	Course	es		V (3) + R (1) Module taught in: German or English								
	Metho	d of ass	sessment	amination in group on/talk (approx. 30 If a written examination form of an oral exa the lecturer must in Assessment offere	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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 change the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: Once a year, summer semester Language of assessment: German and/or English							
11-SPD-152-m01	Physic	s of Se	miconduct	or Devices								
	ECTS	6	Duration	1 semester	Method of grading numerical grade	Modul level	undergraduate					
	Course	es		V (3) + R (1) Module taught in: German or English								
	Metho	d of ass	sessment	amination in group on/talk (approx. 30 If a written examination form of an oral exa the lecturer must in Assessment offere	n (approx. 90 to 120 minutes) or oral examination of its (groups of 2, approx. 30 minutes per candidate) or its minutes). The management of the candidate as method of assessment, this management of one candidate each or an oral examination of oral examination or an	project report (appro y be changed and ass on in groups. If the m	essment may instead take the ethod of assessment is changed,					

11-KDS-152-m01	Crystal	Growth, thin	Laye	rs and Lithography	1		1				
	ECTS	6 Dura	tion	1 semester	Method of gradir	numerical grade	Modul lev	el undergraduat	e		
	Courses	S		′ (3) + R (1) Module taught in: Germ	nan or English						
	Method	l of assessme	a o If fo th A	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the orm 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. Assessment offered: Once a year, winter semester anguage of assessment: German and/or English							
11-QUI-202-m01	Introdu	ction to Quar	tum (Computing and Quant	um Information		,				
	ECTS	6 Dura	tion	1 semester	Method of gradir	numerical grade	Modul lev	el undergraduat	e		
	Courses			(3) + R (1) Module taught in: German or English							
			o p If fo tl L A	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (ap oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (app presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment form of an oral examination of one candidate each or an oral examination in groups. If the method of the lecturer must inform students about this by four weeks prior to the original examination date at Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester					nstead take the sment is changed,		
Modules Solid Sta	te and Na	anostructure	Physi	cs							
11-FK2B-202-m01		tate Physics									
	ECTS Courses	8 Dura	V	1 semester (4) + R (2)		numerical grade	Modul lev	el undergraduat	e		
	<u> </u>			Module taught in: German or English							
	Method	l of assessme	cj o If fo tl	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes) 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 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. Language of assessment: German and/or English Assessment offered: in semester of module and following semester							

11-RRF-202-m01	Introdu	Introduction to Relativistic Physics and Classical Field Theory											
	ECTS	6	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Course	S		V (3)	+ R (1)								
					le taught in: Germa								
	Method	d of ass	essment	oral e prese If a w form the le	a) written examination (approx. 90 to 120 minutes) or 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) oresentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English								
				Asses	sment offered: Onc	ce a year, summer se	mester						
11-NAN-152-m01	Nanoar		_				_		,				
		6	Duration		1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) · Modu	+ R (1) lle taught in: Germa	ın or English							
	Method of assessment			on/ta If a w form the le Asses	amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or proon/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: Once a year, winter semester Language of assessment: German and/or English								
11-ENT-152-mo1	Princip	les of E	nergy Tec	hnolog	gies								
	ECTS	6	Duration	1	1 semester	Method of grading	numerical grade	Modul level	graduate				
	Course	S		V (3) + R (1) Module taught in: German or English									
				oral e prese If a w form the le Asses Langu	a) written examination (approx. 90 to 120 minutes) or 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 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. Assessment offered: Once a year, winter semester Language of assessment: German and/or English								
	Referred to in LPO I			§ 22 Nr. 1 h) § 22 Nr. 2 f) § 22 Nr. 3 f)									

11-BVG-202-m01	Coatin	g Techn	ologies b	ased o	n Vapour Deposi	tion	,				
	ECTS	5	Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Course	25	·	V (3)	+ R (1)		·				
					ıle taught in: Geri						
	Metho	d of ass	essment	oral e oral e proje prese If a w form the le credi	ritten examination (approx. 90 to 120 minutes) or al examination of one candidate each (approx. 30 minutes) or al examination in groups (groups of 2, approx. 30 minutes per candidate) or oject report (approx. 8 to 10 pages) or esentation/talk (approx. 30 minutes). a written examination was chosen as method of assessment, this may be changed and assessment may instead take the rm of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, e lecturer must inform students about this by four weeks prior to the original examination date at the latest. editable for bonus inguage of assessment: German and/or English						
Modules Current T	opics in	Physics									
11-BXE5-152-m01	Curren	t Topics	in Experi	menta	l Physics						
	ECTS 5 Duration			1	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Courses			V (2)	+ R (2)		'				
	Metho	Method of assessment			written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English						
	other	prerequi	sites	Appro	Approval from examination committee required.						
11-BXE6-152-mo1			in Experi			•					
	ECTS	6	Duration	1	1 semester	Method of grading numerical grade	Modul level	undergraduate			
	Course	25	•	V (3)	+ R (1)	·					
	Method of assessment			written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English							
	other	orerequi	sites	Appro	oval from examin	ation committee required.					

11-BXE8-152-m01	Current	t Topics	in Experi	menta	l Physics		,					
	ECTS	8	Duration	1	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course	S		V (4)	+ R (2)			-				
	Method	d of ass	essment	amin on/ta If a w form the le	ation in groups (g alk (approx. 30 mi ritten examination of an oral examina ecturer must inform	pprox. 90 to 120 minutes) or oral examination of o roups of 2, approx. 30 minutes per candidate) or p nutes). In was chosen as method of assessment, this may lation of one candidate each or an oral examination m students about this by four weeks prior to the or nt: German and/or English	project report (appro be changed and ass n in groups. If the m	sessment may instead take the ethod of assessment is changed,				
	other prerequisites			Appr	oval from examina	ition committee required.						
11-BXT5-152-m01	Current	t Topics	in Theore	etical	Physics		'					
	ECTS 5 Duratio			1	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course	S		V (2)	V(2) + R(2)							
				on/ta If a w form the le	amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) on/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may insform of an oral examination of one candidate each or an oral examination in groups. If the method of assessment the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English							
	other p	other prerequisites			Approval from examination committee required.							
11-BXT6-152-m01	Current Topics in Theoretical Physics											
	ECTS	6	Duration	1	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Course	S		V (3) + R (1)								
	Method	d of ass	essment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English								
	other p	rerequi	sites	Appr	oval from examina	ation committee required.						

11-BXT8-152-m01	Current	t Topics	in Theore	etical	Physics					
	ECTS	8	Duratio		1 semester	Method of grading numerical grade	Modul level	undergraduate		
	Course	S		V (4)	+ R (2)		•	•		
	Method	d of ass	essment	amin on/ta If a w form the le	ation in groups (grou llk (approx. 30 minu ritten examination v of an oral examinati ecturer must inform s	rox. 90 to 120 minutes) or oral examination of one oups of 2, approx. 30 minutes per candidate) or projectes). It was chosen as method of assessment, this may be one on of one candidate each or an oral examination in students about this by four weeks prior to the origin:	ect report (appro changed and ass groups. If the m	x. 8 to 10 pages) or presentati- sessment may instead take the ethod of assessment is changed,		
	other p	rerequi	sites	Appro	oval from examination	on committee required.				
11-CSA6-152-m01	Selecte	d Topic	cs in Astro	physi	cs		'			
	ECTS 6 Duration			ı	1 semester	Method of grading numerical grade	Modul level	undergraduate		
	Course	S		V (3)	+ R (1)					
				on/ta If a w form the le	amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or preservon/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead tak form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changuage of assessment: German and/or English					
	other p	rerequi	sites	Approval from examination committee required.						
11-CST6-152-m01		d Topic	s in Parti	cle Ph	ysics					
	ECTS	6	Duratio		1 semester	Method of grading numerical grade	Modul level	undergraduate		
	Course			V (3) + R (1)						
	Method of assessment			written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English						
	other p	rerequi	sites	Appro	oval from examination	on committee required.	_			

11-CSF6-152-m01	Selected	Topics in Solic	State	Physics							
	ECTS 6	5 Duratio	n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses		V (3) ·	+ R (1)	·	•	•				
	Method o	of assessment	amina on/ta If a w form the le	ation in groups (gro lk (approx. 30 minu ritten examination of an oral examinat cturer must inform	prox. 90 to 120 minutes) or oral examination of or ups of 2, approx. 30 minutes per candidate) or putes). was chosen as method of assessment, this may liften ion of one candidate each or an oral examination students about this by four weeks prior to the oral examination and/or English	roject report (appro be changed and ass in in groups. If the m	essment may instead take the ethod of assessment is changed,				
	other pre	erequisites	Appro	Approval from examination committee required.							
11-CSTh6-152-m01	Selected	Topics in Theo	retical	Physics							
	ECTS 6 Duratio		n	1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses		V (3) ·	+ R (1)							
			amina on/ta If a w form the le	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English							
	other pre	erequisites	Appro	Approval from examination committee required.							
Key Skills Area (20	ECTS cred	dits)									
General Key Skills In addition to the m			dents r	may also take modı	ules offered by JMU as part of the pool of general	transferable skills ((ASQ).				
General Key Skills	(subject-s	pecific)									
11-P-VKM-202-m01	MINT Pre	eparatory Cours	e Matl	nematical Methods	of Physics						
	ECTS 3	B Duratio		1 semester	Method of grading (not) successfully complete	ted Modul level	undergraduate				
	Courses		V (1) - Modu	+ Ü (2) le taught in: Germa							
	Method	of assessment	a) exercises (successful completion of approx. 50% of approx. 6 exercise sheets) or b) talk (approx. 15 minutes) Assessment offered: Once a year, winter semester								
	Referred	to in LPO I	§ 22 l	Nr. 1 h) Nr. 2 f) Nr. 3 f)							

11-FFI-202-m01	Fit for I	ndustry				,						
	ECTS	3	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Courses	5		V (1) +		•		,				
					le taught in: Germ							
DMD				c) ora on/ta If a wi form o the le Langu Asses	written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups (groups of 2, approx. 30 minutes) or d) project report (approx. 8 to 10 pages) or e) presentatin/talk (approx. 30 minutes). a written examination was chosen as method of assessment, this may be changed and assessment may instead take the orm of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, ne lecturer must inform students about this by four weeks prior to the original examination date at the latest. anguage of assessment: German and/or English ssessment offered: Once a year, summer semester							
11-PMP-152-m01	Project Management in Practice											
[ECTS	3	Duration	1	1 semester	Method of grading	(not) successfully completed	Modul level	graduate			
	Courses	5			/ (1) + R (1) Module taught in: German or English							
	Method	ethod of assessment			written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) amination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or pon/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English							
11-BASQ5-152-m01	Genera	l Compe	tences fo	r Phys	sicists							
	ECTS	5	Duration	1	1 semester	Method of grading	numerical grade	Modul level	undergraduate			
	Courses	S		V (2) -	+ R (2)			·				
	Method	l of asse		written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). 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. Language of assessment: German and/or English								
	other p	rerequisi	ites	Appro	oval from examinat	ion committee requir	ed.					

Subject-specific Ke	y Skills	(15 ECT:	S credits)								
11-M-MR-202-m01	Mathe	matical	Methods	of Phy	sics						
	ECTS	S 6 Duratio		n	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Course	S		$V(2) + \ddot{U}(2) + V(2) + \ddot{U}(2)$ Module taught in: German or English							
	Method of assessment			Exercises (successful completion of approx. 50% of approx. 13 exercise sheets) or Talk (approx. 15 minutes)							
	Referred to in LPO I			§ 53 Nr. 1 a) § 77 Nr. 1 a)							
11-HS-152-m01	Seminar Experimental/Theoretical Physics										
	ECTS 5 Duratio		Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		S (2) Module taught in: German or English							
	Method	d of asse	essment	talk with discussion (30 to 45 minutes)							
	other p	rerequi	sites	Admission prerequisite to assessment: regular attendance (minimum 85% of sessions).							
	Additional Information			Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.							

11-P-FR1-152-m01	Data and Error Analysis								
	ECTS 2 Duration		1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses			V(1) + U(1)					
				Module taught in: Ü: German or English					
	Method of assessment			written examination (approx. 120 minutes) Language of assessment: German and/or English					
	other prerequisites			Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.					
	Additional Information			Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.					
	Referred to in LPO I			§ 53 Nr. 1 c) § 77 Nr. 1 d)					
11-P-FR2-152-m01	Advanced and Computational Data Analysis								
	ECTS 2 Duration		1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses		$V(1) + \ddot{U}(1)$						
	Method of assessment			Exercises (successful completion of approx. 50% of approx. 10 exercise sheets) Assessment offered: Once a year, summer semester					
	other p	rerequi	sites	Students are highly recommended to complete module 11-P-FR1 prior to completing module 11-P-FR2.					
Thesis (10 ECTS cre	edits)								
11-BA-P-152-m01	Bachelor Thesis Physics								
	ECTS 10 Duratio		i .	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			No courses assigned to module					
	Method of assessment			Bachelor's thesis (approx. 25 pages) Language of assessment: German or English					
	Additional Information			Time to complete: 12 weeks.					