

# Module Catalogue

for the Module studies (Bachelor)

## Quantum Technology

Examination regulations version: 2021 Responsible: Faculty of Physics and Astronomy

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## The subject is divided into

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Winter Term 2022	0	27
Summer Term 2023	0	37
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#### **Abbreviations used**

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

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:

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

15-May-2019 (2019-36)

27-Jun-2019 (2019-41)

14-Nov-2019 (2019-52)

22-Jan-2020 (2020-13)

o6-May-2020 (2020-39)

22-Jul-2020 (2020-57)

17-Dec-2020 (2020-110)

10-Mar-2021 (2021-17)



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o9-Jun-2021 (2021-58)
22-Dec-2021 (2021-85)
05-Jul-2022 (2022-52)
31-Jan-2023 (2022-86)
15-Jun-2023 (2023-58)
13-Dec-2023 (2023-107)
```

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.



## Winter Term 2021

(o ECTS credits)



W	ÜRZBU	JRG 1	5 (12. 7. 7. 7. 8)	33 2 2 6	Quantum rechnology	
Module title Abbreviation						
<b>Current Topics in Physics</b>					11-BXP8-152-m01	
Module	e coord	inator		Module offered by		
chairpe	erson o	f examination committee		Faculty of Physics a	and Astronomy	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
8	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Approval from exam	ination committee r	required.	
Conten	ts					
Current topics of Experimental and Theoretical Physics. Accredited academic achievements, e.g. in case of change of university or study abroad.  Intended learning outcomes  The students have advanced competencies corresponding to the requirements of a module of Experimental or Theoretical Physics of the Bachelor's programme of Nanostructure Technology. They have knowledge of a current subdiscipline of Physics and understand the measuring and/or calculation methods necessary to acquire this knowledge. They are able to classify the subject-specific contexts and know the application areas.  Courses (type, number of weekly contact hours, language — if other than German)						
V (4) +	R (2)					
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)						
or oral pages) If a write stead to fasse nation	examir or pres tten exa ake the essmen date at	nation in groups (groups of sentation/talk (approx. 30 amination was chosen as a form of an oral examina	of 2, approx. 30 minutes).  method of assessmetion of one candidate must inform student	tes per candidate) c ent, this may be cha e each or an oral exa	didate each (approx. 30 minutes) or project report (approx. 8 to 10 nged and assessment may inmination in groups. If the method weeks prior to the original exami	

#### **Allocation of places**

#### **Additional information**

#### Workload

240 h

#### **Teaching cycle**



Module title Abbreviation						
Current Topics in Physics					11-BXP6-152-m01	
Module	coord	linator		Module offered by		
chairpe	erson o	f examination commi	ttee	Faculty of Physics a	and Astronomy	
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)		
6	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Approval from exam	nination committee r	equired.	
Conten	ts		,			
		s of Experimental and versity or study abroa		redited academic ac	hievements, e.g. in case of	
Intend	ed lear	ning outcomes				
knowle <b>Course</b>	dge. Tl <b>s</b> (type, 1	ney are able to classif	stand the measuring and y the subject-specific co urs, language — if other than Ge	ntexts and know the	hods necessary to acquire this application areas.	
V (3) +	R (1)					
		<b>sessment</b> (type, scope, la ble for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether	
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						
Allocation of places						
Additional information						
Workload						
180 h						
Teaching cycle						



W	ÜRZBI	JRG	5 (6.28)	33 9	Quantum Technology		
Module title Abbreviation							
Curren	t Topic	s Physics			11-BXP5-152-m01		
Modul	e coord	linator		Module offered by	/		
chairpe	erson o	f examination committee	2	Faculty of Physics	and Astronomy		
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)			
5	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate	Approval from exam	ination committee	required.		
Conter	ıts		•				
		s of Experimental and The versity or study abroad.	eoretical Physics. Acc	redited academic a	chievements, e.g. in case of		
Intend	ed lear	ning outcomes					
Theore subdis	tical Pl cipline	nysics of the Bachelor's p	orogramme of Nanost nd the measuring an	ructure Technology d/or calculation me	s of a module of Experimental or . They have knowledge of a current ethods necessary to acquire this e application areas.		
Course	<b>S</b> (type,	number of weekly contact hours,	language — if other than Ge	rman)			
V (2) +	R (2)						
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)							
or oral pages) If a wri	examii or pre: tten ex	nation in groups (groups sentation/talk (approx. 3 amination was chosen as	of 2, approx. 30 minu o minutes). s method of assessm	tes per candidate) ent, this may be ch	ndidate each (approx. 30 minutes) or project report (approx. 8 to 10 anged 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 examination date at the latest.

Language of assessment: German and/or English

<u> </u>	
Allocation of places	
Additional information	
Workload	

**Teaching cycle** 

150 h



Module title Abbreviation						
Curren	t Topic	s in Quantum Technol	ogy	11-BXN5-212-n	n01	
Module coordinator Module offered by						
Manag	ing Dir	ector of the Institute o	f Applied Physics	Faculty of Physics and Astronomy		
ECTS	Meth	od of grading	Only after succ. co	mpl. of module(s)		
5	nume	erical grade				
Duratio	on	Module level	Other prerequisite	s		
1 seme	ster	undergraduate				
Conten	its	,	,			
Current study a			ics. Credited academi	achievements, e.g. in case of chang	e of university or	
Intend	ed lear	ning outcomes				
Techno comma and ev	ology o ands kr aluatio	n Bachelor's level. He/ nowledge in a current f	'She field in Quantum Tech necessary to acquire tl	equirements of a module in Nanoscie ology or Nanosciences and insight in is knowledge. He/She is able to clas	nto the measuring	
Courses (type, number of weekly contact hours, language — if other than German)						
V (2) + R (2)						
		sessment (type, scope, lar	nguage — if other than Germa	, examination offered $-$ if not every semester, in	formation on whether	
Written	exam	ination (approx. 90 to	120 minutes) or oral e	amination of one candidate each (ap	oprox. 30 minu-	

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, 30 minutes per candidate) or report on practical course (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

#### **Allocation of places**

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#### **Additional information**

Approval from examination committee required.

#### Workload

150 h

#### **Teaching cycle**

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

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Module title Abbreviation					Abbreviation
Curren	t Topic	s in Quantum Technol	ogy		11-BXN6-212-m01
Modul	e coord	linator		Module offered by	1
Manag	ing Dir	ector of the Institute o	f Applied Physics	Faculty of Physics	and Astronomy
ECTS	Meth	od of grading	Only after succ.	compl. of module(s)	
6	nume	rical grade			
Duratio	on	Module level	Other prerequisi	tes	
1 seme	ster	undergraduate			
Conten	its				
Current study a			ics. Credited academ	ic achievements, e.g.	in case of change of university or
Intend	ed lear	ning outcomes			
The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.					
Courses (type, number of weekly contact hours, language — if other than German)					
V (3) + R (1)					

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### **Allocation of places**

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#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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



Module	e title				Abbreviation
Current Topics in Quantum Technology					11-BXN8-212-m01
Modul	e coord	inator		Module offered b	ру
Manag	ing Dire	ector of the Institute of A	pplied Physics	Faculty of Physic	s and Astronomy
ECTS	Metho	od of grading	Only after succ. compl. of module(s)		
8	nume	rical grade			
Duratio	on	Module level	Other prerequisit	es	
1 seme	ster	undergraduate			
Conten	its				
Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.					
Intend	ed lear	ning outcomes			

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(4) + R(2)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

240 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



Selected Topics in Energy and Material Science  Module coordinator  Chairperson of examination committee  Module offered by  Faculty of Physics and Astronomy
,
chairperson of examination committee Faculty of Physics and Astronomy
ECTS Method of grading Only after succ. compl. of module(s)
6 numerical grade
Duration Module level Other prerequisites
1 semester undergraduate Approval from examination committee required.
Contents
Selected topics of energy and materials research.
Intended learning outcomes
The students have basic knowledge of energy and material research and understand the measuring and eva tion methods necessary to acquire this knowledge. They are able to classify the subject-specific contexts an know the application areas.
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)
V (3) + R (1)
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whe module is creditable for bonus)
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 pages) or 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 examination date at the latest.  Language of assessment: German and/or English
Allocation of places
Additional information
-
Workload
180 h
Teaching cycle
Referred to in LPO I (examination regulations for teaching-degree programmes)



Module	title	,			Abbreviation	
Selecte	Selected Topics in Solid State Physics				11-CSF6-152-m01	
Module	Module coordinator			Module offered by		
chairpe	erson o	f examination committee	!	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 seme	ster	undergraduate	Approval from exam	ination committee r	equired.	
Conten	ts					
Selecte	d topic	s of Solid-State Physics.				
Intende	ed lear	ning outcomes				
and eva	aluatio				nd understand the measuring classify the subject-specific con-	
Course	<b>S</b> (type, r	number of weekly contact hours,	anguage — if other than Ger	rman)		
V (3) +	R (1)					
		<b>sessment</b> (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	t every semester, information on whether	
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						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
180 h						
Teachi	Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					



Module title Selected Topics in Quantum Technology					Abbreviation	
					11-CSN6-212-m01	
Module	e coord	inator		Module offered by	1	
Manag	ing Dir	ector of the Institute of A	Applied Physics	Faculty of Physics	and Astronomy	
ECTS	Meth	od of grading	Only after succ. compl. of module(s)			
6	nume	rical grade				
Duratio	n	Module level	Other prerequisite	res		
1 seme	ster	undergraduate				
Conten	ts					
Current study a	•		s. Credited academic	achievements, e.g.	in case of change of university or	
Intende	ed lear	ning outcomes				
The stu	dent p	osseses advanced knov	vledge meeting the re	equirements of a mo	dule in Nanosciences or Quantum	

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

the learnt. He/She knows about fields of application.

V(3) + R(1)

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

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link

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, 30 minutes per candidate) or report on practical course (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

Technology on Bachelor's level. He/She

#### Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

--

 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



## **Summer Term 2022**

(o ECTS credits)



Modul	e title				Abbreviation
Curren	t Topic	s in Physics			11-BXP8-152-m01
Modul	e coord	linator		Module offe	ered by
chairp	erson c	of examination commi	ttee	Faculty of P	hysics and Astronomy
ECTS	Meth	od of grading	Only after su	cc. compl. of modul	le(s)
8	nume	erical grade			
Duratio	on	Module level	Other prerequ	uisites	
1 seme	ster	undergraduate	Approval from	n examination com	mittee required.
Conter	ıts				
		s of Experimental and iversity or study abroa		cs. Accredited acad	emic achievements, e.g. in case of
Intend	ed lear	ning outcomes			
Theore subdis	tical Pl cipline	hysics of the Bachelor of Physics and under	r's programme of N rstand the measuri	lanostructure Techr ing and/or calculati	ements of a module of Experimental or nology. They have knowledge of a currer ion methods necessary to acquire this now the application areas.
Course	S (type,	number of weekly contact ho	ours, language — if other	than German)	
V (4) +	R (2)				
		<b>sessment</b> (type, scope, lable for bonus)	anguage — if other than (	German, examination offe	${\sf red}-{\sf if}$ not every semester, information on whether
			·		one candidate each (approx. 30 minutes idate) or project report (approx. 8 to 10

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**

#### **Additional information**

#### Workload

240 h

#### Teaching cycle



Module	e title				Abbreviation
Current	t Topic	s in Physics			11-BXP6-152-m01
Module	coord	linator		Module offered by	
chairpe	erson o	f examination commi	ttee	Faculty of Physics a	and Astronomy
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)	
6	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate	Approval from exam	nination committee r	equired.
Conten	ts		,		
		s of Experimental and versity or study abroa		redited academic ac	hievements, e.g. in case of
Intend	ed lear	ning outcomes			
knowle <b>Course</b>	dge. Tl <b>s</b> (type, 1	ney are able to classif	stand the measuring and y the subject-specific co urs, language — if other than Ge	ntexts and know the	hods necessary to acquire this application areas.
V (3) +	R (1)				
		<b>sessment</b> (type, scope, la ble for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether
or oral pages) If a writ stead t of asse nation	examir or pres tten ex ake the essmen date at	nation in groups (grou sentation/talk (appro amination was chose e form of an oral exam	ps of 2, approx. 30 minux. 30 minux. 30 minutes). In as method of assessmination of one candidateurer must inform studen	ites per candidate) c ent, this may be cha e each or an oral exa	didate each (approx. 30 minutes) or project report (approx. 8 to 10 nged and assessment may intended in groups. If the method weeks prior to the original exami-
Allocat			<del>_</del>		
Additio	nal inf	ormation			
Worklo	ad				
180 h					



		Abbreviation			
		11-BXP5-152-m01			
	Module offered by				
9	Faculty of Physics a	and Astronomy			
Only after succ. con	npl. of module(s)				
Other prerequisites					
Approval from exam	ination committee r	equired.			
eoretical Physics. Acc	redited academic ac	hievements, e.g. in case of			
programme of Nanosti nd the measuring and ne subject-specific co	ructure Technology. d/or calculation met ntexts and know the	They have knowledge of a current hods necessary to acquire this			
language — if other than Gei 	man)				
age — if other than German,	examination offered — if no	of every semester, information on whether			
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					
Allocation of places					
	Only after succ. con  Other prerequisites Approval from exam eoretical Physics. According to rogramme of Nanostind the measuring and the measuring and the subject-specific collanguage — if other than German, or minutes) or oral example of 2, approx. 30 minutes of 30 min	Faculty of Physics at Only after succ. compl. of module(s)  Other prerequisites Approval from examination committee recordical Physics. Accredited academic according to the requirements programme of Nanostructure Technology. In the measuring and/or calculation met the subject-specific contexts and know the language — if other than German)  age — if other than German, examination offered — if not of 2, approx. 30 minutes per candidate) of ominutes). In the measuring and comminutes is method of assessment, this may be characteristic of the candidate each or an oral examination of one candidate each			

**Teaching cycle** 



Module title					Abbreviation
Current Topics in Quantum Technology					11-BXN5-212-m01
Module	e coord	linator		Module offered by	1
Manag	ing Dir	ector of the Institute	of Applied Physics	Faculty of Physics	and Astronomy
ECTS	Meth	od of grading	Only after succ. c	ompl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisit	es	
1 seme	ster	undergraduate			
Conten	ts				
Current study a	•		rsics. Credited academi	c achievements, e.g.	in case of change of university or
Intend	ed lear	ning outcomes			
Techno comma and ev	ology oi ands kr aluatio	n Bachelor's level. He nowledge in a current	e/She field in Quantum Tech necessary to acquire t	nology or Nanoscienc	dule in Nanosciences or Quantun es and insight into the measuring ne is able to classify and to link
Course	<b>S</b> (type, i	number of weekly contact h	ours, language — if other than	German)	
V (2) +	R (2)				
			anguage — if other than Germa		

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, 30 minutes per candidate) or report on practical course (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

#### **Allocation of places**

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#### **Additional information**

Approval from examination committee required.

#### Workload

150 h

#### **Teaching cycle**

--

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

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Module title					Abbreviation	
Curren	t Topic	s in Quantum Technol	ogy		11-BXN6-212-m01	
Modul	e coord	inator		Module offered by	L	
Manag	ing Dir	ector of the Institute o	f Applied Physics	Faculty of Physics a	and Astronomy	
ECTS	Meth	od of grading	Only after succ.	compl. of module(s)		
6	nume	rical grade				
Durati	on	Module level	Other prerequisi	equisites		
1 seme	ester	undergraduate				
Conte	nts					
	t topics abroad.		ics. Credited academ	ic achievements, e.g. i	n case of change of university or	
Intend	ed lear	ning outcomes				
The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.						
Courses (type, number of weekly contact hours, language — if other than German)						
V (3) +	R (1)					

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### **Allocation of places**

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#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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



Module title				Abbreviation	
Curren	Current Topics in Quantum Technology				11-BXN8-212-m01
Modul	e coord	inator		Module offered by	
Managing Director of the Institute of Applied Physics			oplied Physics	Faculty of Physics and Astronomy	
ECTS	Metho	od of grading	Only after succ. compl. of module(s)		
8	nume	rical grade			
Duratio	on	Module level	Other prerequisites	3	
1 seme	ester	undergraduate			
Contents					
Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.					

#### **Intended learning outcomes**

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

 $\textbf{Courses} \ (\textbf{type}, \, \textbf{number of weekly contact hours}, \, \textbf{language} - \textbf{if other than German})$ 

V(4) + R(2)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

240 h

#### **Teaching cycle**

--

 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



Module	e title	<u> </u>			Abbreviation
Selecto	ed Topi	cs in Energy and Materia	l Science		11-CSEM6-152-m01
Modul	e coord	inator		Module offered by	ı.
chairpe	erson o	f examination committee		Faculty of Physics a	and Astronomy
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
6	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	Approval from exam	ination committee r	equired.
Conter	its		,		
Selecte	ed topio	s of energy and material	s research.		
Intend	ed lear	ning outcomes			
tion me	ethods				stand the measuring and evalua- subject-specific contexts and
Course	<b>S</b> (type, r	number of weekly contact hours, I	anguage — if other than Ger	man)	
V (3) +	R (1)				
		<b>sessment</b> (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
or oral pages) If a wristead to fasse nation	examir or pres tten exa ake the essmen date at	ation in groups (groups of sentation/talk (approx. 30 amination was chosen as a form of an oral examina	of 2, approx. 30 minu o minutes). o method of assessmo tion of one candidate o must inform student	tes per candidate) o ent, this may be char e each or an oral exa	didate each (approx. 30 minutes) r project report (approx. 8 to 10 nged and assessment may inmination in groups. If the method weeks prior to the original exami-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
180 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
			•		



Module title				Abbreviation	
Selected Topi	cs in Solid State Physics			11-CSF6-152-m01	
Module coord	linator		Module offered by		
chairperson o	f examination committee		Faculty of Physics a	and Astronomy	
ECTS Meth	od of grading	Only after succ. con	npl. of module(s)		
6 nume	rical grade				
Duration	Module level	Other prerequisites			
1 semester	undergraduate	Approval from exam	ination committee r	equired.	
Contents					
Selected topi	cs of Solid-State Physics.				
Intended lear	ning outcomes				
and evaluatio				nd understand the measuring classify the subject-specific con-	
Courses (type,	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (3) + R (1)					
Method of ass		ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
or oral examing pages) or present fawritten ex stead take the of assessment nation date 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 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				
Allocation of	places				
Additional inf	ormation				
Workload					
180 h					
Teaching cycl	le				
Referred to in	Referred to in LPO I (examination regulations for teaching-degree programmes)				



Colocted Tor				Abbreviation	
betected 10	oics in Quantum Technol	ogy		11-CSN6-212-m01	
Module coor	dinator		Module offered by		
Nanaging Di	rector of the Institute of	Applied Physics	Faculty of Physics ar	nd Astronomy	
CTS Met	nod of grading	Only after succ. co	mpl. of module(s)		
5 num	erical grade				
Ouration	Module level	Other prerequisite	Other prerequisites		
semester	undergraduate				
Contents					
Current topic tudy abroac		cs. Credited academic	achievements, e.g. in	case of change of university or	
ntended lea	rning outcomes				
The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.					

V(3) + R(1)

 $\textbf{Method of assessment} \ (\textbf{type}, \textbf{scope}, \textbf{language} - \textbf{if other than German, examination of fered} - \textbf{if not every semester, information on whether} \ (\textbf{type}, \textbf{scope}, \textbf{language} - \textbf{if other than German, examination of fered} - \textbf{if not every semester, information on whether} \ (\textbf{type}, \textbf{scope}, \textbf{language}) \ (\textbf{type}, \textbf{language})$ module is creditable for bonus)

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, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**



## Winter Term 2022

(o ECTS credits)



Module	title				Abbreviation
Current Topics in Physics					11-BXP8-152-m01
Module	coord	inator		Module offered b	y
chairpe	rson o	f examination comm	ittee	Faculty of Physics	s and Astronomy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
8	nume	rical grade			
Duratio	n	Module level	Other prerequisites	i	
1 semes	ster	undergraduate	Approval from exam	nination committee	e required.
Content	ts				
		s of Experimental and versity or study abroa	· · · · · · · · · · · · · · · · · · ·	redited academic	achievements, e.g. in case of
Intende	d lear	ning outcomes			
Theoret subdisc	ical Ph cipline	nysics of the Bachelo of Physics and unde	r's programme of Nanost	ructure Technology d/or calculation m	s of a module of Experimental or y. They have knowledge of a curre ethods necessary to acquire this ne application areas.
Courses	<b>5</b> (type, r	number of weekly contact ho	ours, language — if other than Ge	rman)	
V (4) + I	R (2)				
		<b>sessment</b> (type, scope, la ble for bonus)	anguage — if other than German,	examination offered — if	not every semester, information on whether
or oral e	examir		ups of 2, approx. 30 minu		andidate each (approx. 30 minute or project report (approx. 8 to 10

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

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#### **Additional information**

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#### Workload

240 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



Module title Abbreviation					Abbreviation
Current	t Topic	s in Physics			11-BXP6-152-m01
Module	e coord	linator		Module offered by	
chairpe	erson o	of examination commi	ttee	Faculty of Physics and Astronomy	
ECTS	Meth	od of grading	Only after succ. cor	Only after succ. compl. of module(s)	
6	nume	rical grade			
Duratio	on	Module level	Other prerequisites	5	
1 seme	ster	undergraduate	Approval from exam	nination committee	e required.
Conten	its				
	•	s of Experimental and versity or study abroa	•	redited academic	achievements, e.g. in case of
Intend	ed lear	ning outcomes			
Theore subdis	tical Pł cipline	nysics of the Bachelor of Physics and under	's programme of Nanost	ructure Technology d/or calculation m	s of a module of Experimental or y. They have knowledge of a currenethods necessary to acquire this ne application areas.
Course	<b>S</b> (type,	number of weekly contact ho	urs, language — if other than Ge	rman)	
V (3) +	R (1)				
		<b>sessment</b> (type, scope, la ble for bonus)	nguage — if other than German,	examination offered $-$ if	not every semester, information on whether
or oral	examiı		ps of 2, approx. 30 minu		andidate each (approx. 30 minute or project report (approx. 8 to 10

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 examination date at the latest.

Language of assessment: German and/or English

#### **Allocation of places**

#### **Additional information**

#### Workload

180 h

#### Teaching cycle

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



Module title Abbreviation						
Current Topics Physics 11-BXP5-152-mo1					11-BXP5-152-m01	
Module	e coord	linator		Module offered	Module offered by	
chairpe	erson o	f examination commit	tee	Faculty of Physics and Astronomy		
ECTS	Meth	od of grading	Only after succ. c	Only after succ. compl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisit	es		
1 seme	ster	undergraduate	Approval from exa	amination committ	ee required.	
Conten	its					
	•	s of Experimental and versity or study abroa	•	ccredited academi	c achievements, e.g. in case of	
Intend	ed lear	ning outcomes				
Theore subdis	tical Pł cipline	nysics of the Bachelor of Physics and under	s programme of Nano stand the measuring a	structure Technolo nd/or calculation	nts of a module of Experimental or egy. They have knowledge of a currer methods necessary to acquire this the application areas.	
Course	S (type,	number of weekly contact ho	urs, language — if other than	German)		
V (2) +	R (2)					
			nguage — if other than Germa	n, examination offered –	- if not every semester, information on whether	
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 metho						

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

Allocation of places

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**Additional information** 

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Workload

150 h

**Teaching cycle** 

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



le offered by						
le offered by						
ie olieleu by						
Faculty of Physics and Astronomy						
Only after succ. compl. of module(s)						
Contents						
ements, e.g. in case of change of university or						
ents of a module in Nanosciences or Quantum Nanosciences and insight into the measuring ledge. He/She is able to classify and to link						
Courses (type, number of weekly contact hours, language — if other than German)						

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, 30 minutes per candidate) or report on practical course (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

#### **Allocation of places**

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#### **Additional information**

Approval from examination committee required.

#### Workload

150 h

#### **Teaching cycle**

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

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Module title					Abbreviation	
Curren	t Topics	in Quantum Technology	1		11-BXN6-212-m01	
Modul	e coordi	nator		Module offered by		
Managing Director of the Institute of Applied Physics				Faculty of Physics and Astronomy		
ECTS	Metho	ethod of grading Only after succ. compl. of m			of module(s)	
6	numer	ical grade				
Duration Module level		Other prerequisites				
1 semester undergraduate		undergraduate				
Contents						
Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.						
Intended learning outcomes						

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(3) + R(1)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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



Module c	Coordinator	ogy	11-BXN8-212-m01		
			Mandrila offernad by		
Managing	g Director of the Institute of		Module offered by		
	g Director of the mistitute of	f Applied Physics	Faculty of Physics and Astronomy		
ECTS N	Method of grading	Only after succ. o	compl. of module(s)		
8 n	numerical grade				
Duration Module level C		Other prerequisi	Other prerequisites		
1 semest	er undergraduate				
Contents	;				
Current to study abi		ics. Credited academ	nic achievements, e.g. in case of change of university or		
Intended	learning outcomes				

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(4) + R(2)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

240 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



Selected Topics in Energy and Material Science  Module coordinator Chairperson of examination committee  Module offered by Faculty of Physics and Astronomy						
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chairperson of examination committee Faculty of Physics and Astronomy						
ECTS Method of grading Only after succ. compl. of module(s)						
6 numerical grade						
Duration Module level Other prerequisites						
1 semester undergraduate Approval from examination committee required.						
Contents						
Selected topics of energy and materials research.						
Intended learning outcomes						
The students have basic knowledge of energy and material research and understand the measuring and evaluation methods necessary to acquire this knowledge. They are able to classify the subject-specific contexts and know the application areas.						
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)						
V (3) + R (1)						
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whet module is creditable for bonus)						
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 pages) or 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 examination date at the latest.  Language of assessment: German and/or English						
Allocation of places						
Additional information						
-						
Workload						
180 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						



Module	Module title Abbreviation					
Selecte	ed Topi	cs in Solid State Physics			11-CSF6-152-m01	
Module	e coord	inator		Module offered by		
chairperson of examination committee			!	Faculty of Physics a	and Astronomy	
ECTS Method of grading Only after succ.				ompl. of module(s)		
6	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate	Approval from exam	ination committee re	equired.	
Conten	its					
Selecte	ed topic	s of Solid-State Physics.				
Intend	ed lear	ning outcomes				
and ev	aluatio		•	•	nd understand the measuring classify the subject-specific con-	
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
V (3) + R (1)						
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
or oral pages) If a write stead to fasse nation	examir or pres tten exa ake the essmen date at	nation in groups (groups of sentation/talk (approx. 30 amination was chosen as a form of an oral examina	of 2, approx. 30 minu o minutes). s method of assessmo tion of one candidate r must inform student	tes per candidate) o ent, this may be char e each or an oral exa	didate each (approx. 30 minutes) or project report (approx. 8 to 10 mged and assessment may inmination in groups. If the method weeks prior to the original exami-	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
180 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		



Module title Abbreviation					Abbreviation	
Selecte	ed Topi	cs in Quantum Technolog	gy		11-CSN6-212-m01	
Module	coord	inator		Module offered by	l	
Manag	ing Dire	ector of the Institute of A	oplied Physics	Faculty of Physics and Astronomy		
ECTS	Meth	od of grading	Only after succ. cor	y after succ. compl. of module(s)		
6	nume	rical grade	grade			
Duratio	n	Module level	Other prerequisites	er prerequisites		
1 semester undergraduate						
Contents						
Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.						
Intended learning outcomes						
Techno comma and eva	logy or Inds kn aluatio	n Bachelor's level. He/Sh nowledge in a current fiel	e d in Quantum Techno essary to acquire thi	ology or Nanoscience	ule in Nanosciences or Quantum es and insight into the measuring e is able to classify and to link	
_		number of weekly contact hours,		rman)		
V (3) +	R (1)					
Method	d of ass	sessment (type, scope, langua	ge — if other than German,	examination offered — if no	ot every semester, information on whether	

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### **Allocation of places**

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#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



# **Summer Term 2023**

(o ECTS credits)



Module title Abbreviation						
Current Topics in Quantum Technology					11-BXN5-212-m01	
Module	e coord	linator		Module offered by		
Managi	ing Dir	ector of the Institute	of Applied Physics	Faculty of Physics ar	nd Astronomy	
ECTS	Meth	od of grading	Only after succ. o	ompl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisit	Other prerequisites		
1 seme	ster	undergraduate				
Conten	ts	,	,			
Current study a			sics. Credited academ	c achievements, e.g. in	case of change of university or	
Intende	ed lear	ning outcomes				
Techno comma and eva	ology o ands kr aluatio	n Bachelor's level. He nowledge in a current	e/She field in Quantum Tech necessary to acquire t	nology or Nanosciences	tle in Nanosciences or Quantum s and insight into the measuring is able to classify and to link	
Course	<b>S</b> (type,	number of weekly contact ho	ours, language — if other than	German)		
V (2) +	R (2)					
		sessment (type, scope, la	anguage — if other than Germa	n, examination offered — if not	every semester, information on whether	
Written	exami	ination (approx. oo to	120 minutes) or oral e	xamination of one cand	lidate each (approx, 30 minu-	

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, 30 minutes per candidate) or report on practical course (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

## **Allocation of places**

#### **Additional information**

Approval from examination committee required.

#### Workload

150 h

## **Teaching cycle**

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

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Module title					Abbreviation	
Current Topics in Quantum Technology					11-BXN6-212-m01	
Module coordinator				Module offered	by	
Manag	ging Dire	ector of the Institute o	f Applied Physics	Faculty of Physic	cs and Astronomy	
ECTS	Metho	od of grading	Only after succ. o	Only after succ. compl. of module(s)		
6	nume	rical grade				
Duratio	on	Module level	Other prerequisit	Other prerequisites		
1 seme	ester	undergraduate				
Conten	nts					
	t topics		ics. Credited academ	ic achievements, e.g	g. in case of change of university or	
Intend	ed lear	ning outcomes				
Techno	ology or	n Bachelor's level. He/	/She	·	nodule in Nanosciences or Quantum	

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

the learnt. He/She knows about fields of application.

V(3) + R(1)

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

and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link

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, 30 minutes per candidate) or report on practical course (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

## **Allocation of places**

#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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



Module title Abbreviation					Abbreviation
Current Topics in Quantum Technology					11-BXN8-212-m01
Module	coord	inator		Module offered b	by
Managi	ng Dire	ector of the Institute of A	pplied Physics	Faculty of Physic	s and Astronomy
ECTS	Meth	od of grading	Only after succ. co	ompl. of module(s)	
8	nume	rical grade			
Duratio	n	Module level	Other prerequisit	es	
ı semes	ster	undergraduate			
Conten	ts				
Current study a			. Credited academi	c achievements, e.g	g. in case of change of university o
ntende	d lear	ning outcomes			
Techno comma and eva	logy or nds kn Iluatio	n Bachelor's level. He/Sh nowledge in a current fiel	e d in Quantum Tech cessary to acquire t	nology or Nanoscier	odule in Nanosciences or Quantu nces and insight into the measurir She is able to classify and to link
Course	<b>5</b> (type, r	number of weekly contact hours,	language — if other than (	German)	
V (4) + I	R (2)				
		<b>sessment</b> (type, scope, langua ole for bonus)	age — if other than Germa	n, examination offered $-$ i	if not every semester, information on whether
					andidate each (approx. 30 minute ort on practical course (approx. 8 t

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

# **Allocation of places**

#### **Additional information**

Approval from examination committee required.

## Workload

240 h

## Teaching cycle



Wi	ÜRZBU	JRG 1	5 (2) (8)	3 7 2	Quantum Technology
Module	title				Abbreviation
Current	t Topic	s Physics			11-BXP5-152-m01
Module coordinator				Module offered by	
chairpe	erson o	f examination committee		Faculty of Physics	and Astronomy
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate	Approval from exam	ination committee	required.
Conten	ts				
		of Experimental and The versity or study abroad.	oretical Physics. Acc	redited academic ac	chievements, e.g. in case of
Intende	ed lear	ning outcomes			
Theore:	tical Ph cipline	ysics of the Bachelor's p	rogramme of Nanostr nd the measuring and	ructure Technology. I/or calculation met	of a module of Experimental or They have knowledge of a current thods necessary to acquire this e application areas.
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) +	R (2)				
		<b>sessment</b> (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if n	not every semester, information on whether
or oral pages) If a writ stead to of asse	examir or pres ten exa ake the ssmen	nation in groups (groups of sentation/talk (approx. 30 amination was chosen as a form of an oral examina t is changed, the lecturer the latest.	of 2, approx. 30 minu o minutes). o method of assessme tion of one candidate	tes per candidate) ( ent, this may be cha e each or an oral exa	ndidate each (approx. 30 minutes) or project report (approx. 8 to 10 anged and assessment may inamination in groups. If the method weeks prior to the original exami-

Language of assessment: German and/or English

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ΛII	000	tion	of n	laces
Au	uca	LIVII	טוט	lates

## **Additional information**

## Workload

150 h

## **Teaching cycle**



Module title A					Abbreviation
Curren	t Topic	s in Physics			11-BXP6-152-m01
Module coordinator				Module offered by	
chairpe	erson o	f examination committee	2	Faculty of Physics	and Astronomy
ECTS	Meth	od of grading	Only after succ. com	pl. of module(s)	
6	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	Approval from exam	ination committee	required.
Conter	its				
		s of Experimental and The versity or study abroad.	eoretical Physics. Acc	redited academic a	chievements, e.g. in case of
Intend	ed lear	ning outcomes			
Theore subdis	tical Ph cipline	nysics of the Bachelor's p	rogramme of Nanostr nd the measuring and	ucture Technology. I/or calculation me	of a module of Experimental or They have knowledge of a currenthods necessary to acquire this e application areas.
Course	S (type, i	number of weekly contact hours,	language — if other than Ger	man)	
V (a) ·	R (1)				
v (3) +		sessment (type, scope, langua	age — if other than German, e	examination offered — if r	ot every semester, information on whether
Metho	s creditab				

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**

## **Additional information**

## Workload

180 h

## Teaching cycle

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



Module title Abbreviation					Abbreviation	
Curren	t Topic	s in Physics			11-BXP8-152-m01	
Modul	e coord	linator		Module offered by	1	
chairpe	erson o	f examination committee	è	Faculty of Physics	and Astronomy	
ECTS	Meth	od of grading	Only after succ. com	ıpl. of module(s)		
8	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate	Approval from exam	ination committee	required.	
Conten	ıts					
change	of uni	s of Experimental and The versity or study abroad.  ning outcomes	eoretical Physics. Accı	edited academic a	chievements, e.g. in case of	
Theore subdis	tical Pł cipline	nysics of the Bachelor's p	programme of Nanostr nd the measuring and	ucture Technology I/or calculation me	s of a module of Experimental or . They have knowledge of a curre thods necessary to acquire this e application areas.	
Course	<b>S</b> (type, i	number of weekly contact hours,	language — if other than Ger	man)		
	R (2)					
V (4) +	<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)					
Metho		ole for bonus)				

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

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Λu	uca	uvu	VI P	laces

## **Additional information**

## Workload

240 h

## **Teaching cycle**



Module title					Abbreviation	
Selected Topics in Quantum Technology			ology		11-CSN6-212-m01	
Module coordinator				Module offered	Module offered by	
Managing Director of the Institute of Applied Physics			of Applied Physics	Faculty of Phys	ics and Astronomy	
ECTS	Meth	od of grading	Only after succ.	Only after succ. compl. of module(s)		
6	nume	rical grade				
Duratio	n	Module level	Other prerequisi	ites		
1 seme	ster	undergraduate				
Conten	ts		`			
Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.						
Intended learning outcomes						

Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(3) + R(1)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

## Allocation of places

#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**



# Winter Term 2023

(o ECTS credits)



Module title	Module title Abbreviation					
Current Top	ics in Physics			11-BXP8-152-mo1		
Module coo	rdinator		Module offered by			
chairpersor	of examination committee		Faculty of Physics a	and Astronomy		
ECTS Me	hod of grading	Only after succ. con	npl. of module(s)			
8 nur	nerical grade					
Duration	Module level	Other prerequisites				
1 semester	undergraduate	Approval from exam	ination committee r	equired.		
Contents						
	cs of Experimental and The niversity or study abroad.	eoretical Physics. Acc	redited academic ac	hievements, e.g. in case of		
Intended le	arning outcomes					
Theoretical subdiscipling knowledge.	Physics of the Bachelor's p ne of Physics and understa They are able to classify th	rogramme of Nanost nd the measuring and le subject-specific co	ructure Technology. d/or calculation met ntexts and know the	of a module of Experimental or They have knowledge of a current hods necessary to acquire this application areas.		
-	e, number of weekly contact hours,	ianguage — if other than Gei	man)			
V (4) + R (2)						
	table for bonus)	ige — if other than German,	examination offered — if no	ot every semester, information on whether		
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						
Allocation of	f places	_				
Additional i	nformation					
Workload						
240 h						

**Teaching cycle** 



- 11		186.18	5 (612) (613) (613) (613)	83 <b>@~[</b> 9	
Modul	e title				Abbreviation
Curren	t Topic	s in Physics			11-BXP6-152-m01
Modul	e coord	inator		Module offered by	
chairp	erson o	f examination committee	2	Faculty of Physics a	and Astronomy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
6	nume	rical grade			
Durati	on	Module level	Other prerequisites	i	
1 seme	ester	undergraduate	Approval from exam	nination committee r	equired.
Conte	nts				
		of Experimental and The versity or study abroad.	eoretical Physics. Acc	redited academic ac	chievements, e.g. in case of
Intend	ed lear	ning outcomes			
subdis knowle	scipline edge. Th <b>es</b> (type, r		nd the measuring and ne subject-specific co	d/or calculation met ntexts and know the	They have knowledge of a current hods necessary to acquire this application areas.
V (3) +	R (1)				
		sessment (type, scope, langua ole for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether
or oral pages) If a wri stead to of asse nation	examir or pres itten exa take the essmen date at	nation in groups (groups sentation/talk (approx. 3 amination was chosen as e form of an oral examina	of 2, approx. 30 minutes).  s method of assessmetion of one candidate  r must inform student	ites per candidate) c ent, this may be cha e each or an oral exa	ididate each (approx. 30 minutes) or project report (approx. 8 to 10 inged and assessment may insimination in groups. If the method weeks prior to the original exami-
Alloca	tion of p	places			
Additio	onal inf	ormation			
Workle	oad				

180 h

# **Teaching cycle**



		14.241	O (GEATO) (	00 8/4/2/	
Module	title				Abbreviation
Current	Current Topics Physics				11-BXP5-152-m01
Module	Module coordinator Module o			Module offered by	
chairpe	rson of	f examination committee	9	Faculty of Physics a	and Astronomy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites	i	
1 semes	ster	undergraduate	Approval from exam	nination committee r	equired.
Content	ts				
		of Experimental and The versity or study abroad.	eoretical Physics. Acc	redited academic ac	hievements, e.g. in case of
Intende	d learr	ning outcomes			
subdisc knowled	cipline dge. Th (type, n		nd the measuring and ne subject-specific co	d/or calculation met ntexts and know the	They have knowledge of a current hods necessary to acquire this application areas.
V (2) + I					
		<b>essment</b> (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether
or oral e pages) If a writ stead ta of asses	examin or pres ten exa ake the ssment date at	ation in groups (groups entation/talk (approx. 3 amination was chosen as form of an oral examina	of 2, approx. 30 minutes).  s method of assessmetion of one candidate r must inform student	ites per candidate) c ent, this may be cha e each or an oral exa	didate each (approx. 30 minutes) or project report (approx. 8 to 10 nged and assessment may intended in groups. If the method weeks prior to the original exami-
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				

150 h

**Teaching cycle** 



Module title Abbreviation						
Curren	t Topic	s in Quantum Techno	ology		11-BXN5-212-m01	
Module	e coord	linator		Module offered by	1	
Manag	ing Dir	ector of the Institute	of Applied Physics	Faculty of Physics	and Astronomy	
ECTS	Meth	od of grading	Only after succ. c	ompl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisit	es		
1 semester undergraduate						
Conten	ts					
Current study a	•		rsics. Credited academi	c achievements, e.g.	in case of change of university or	
Intend	ed lear	ning outcomes				
Techno comma and ev	ology oi ands kr aluatio	n Bachelor's level. He nowledge in a current	e/She field in Quantum Tech necessary to acquire t	nology or Nanoscienc	dule in Nanosciences or Quantun es and insight into the measuring ne is able to classify and to link	
Courses (type, number of weekly contact hours, language — if other than German)						
V (2) +	R (2)					
			anguage — if other than Germa			

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, 30 minutes per candidate) or report on practical course (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

## **Allocation of places**

#### **Additional information**

Approval from examination committee required.

## Workload

150 h

## **Teaching cycle**

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

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Modul	e title		Abbreviation			
Curren	t Topic	s in Quantum Techno	logy		11-BXN6-212-m01	
Modul	e coord	linator		Module offered by		
Managing Director of the Institute of Applied Physics			f Applied Physics	Faculty of Physic	Faculty of Physics and Astronomy	
ECTS	Meth	od of grading	Only after succ. o	compl. of module(s)		
6	nume	erical grade				
Duratio	on	Module level	Other prerequisi	tes		
1 seme	ester	undergraduate				
Conter	nts	•				
	t topics	' ' '	ics. Credited academ	ic achievements, e.g	. in case of change of university o	

#### **Intended learning outcomes**

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(3) + R(1)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

#### Additional information

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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



Module title					Abbreviation
Current Topics in Quantum Technology					11-BXN8-212-m01
Module coordinator				Module offered by	
Managi	ing Dire	ector of the Institute of A	applied Physics	Faculty of Physics and Astronomy	
ECTS	Metho	od of grading	Only after succ. co	only after succ. compl. of module(s)	
8	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	1 semester undergraduate				
Conten	ts				

Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.

## **Intended learning outcomes**

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(4) + R(2)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

## Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

240 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



Modul	e title				Abbreviation	
Selected Topics in Quantum Technology				11-CSN6-212-m01		
Module coordinator				Module offered by		
Managing Director of the Institute of Applied Physic			pplied Physics	Faculty of Physics and Astronomy		
ECTS	Meth	nod of grading Only after succ. co		mpl. of module(s)		
6	nume	rical grade				
Duratio	on	Module level	Other prerequisite	Other prerequisites		
1 seme	ester	undergraduate				
Contents						
	Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.					

#### **Intended learning outcomes**

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

 $\textbf{Courses} \ (\textbf{type}, \, \textbf{number of weekly contact hours, language} - \textbf{if other than German})$ 

V(3) + R(1)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



# **Summer Term 2024**

(o ECTS credits)



Module	e title				Abbreviation	
Current Topics in Physics 11-BXP8-152-mo1						
Module coordinator Module off				Module offered by		
chairpe	erson o	of examination comm	ittee	Faculty of Physics ar	nd Astronomy	
ECTS	Meth	od of grading	Only after succ. co	npl. of module(s)		
8	nume	erical grade				
Duratio	on	Module level	Other prerequisites	5		
1 seme	ster	undergraduate	Approval from exar	Approval from examination committee required.		
Contents						
	•	s of Experimental and versity or study abroa		redited academic ach	nievements, e.g. in case of	
Intende	ed lear	ning outcomes				
Theore subdis	tical Pł cipline	nysics of the Bachelo of Physics and unde	r's programme of Nanost	ructure Technology. T d/or calculation meth	f a module of Experimental or hey have knowledge of a curren ods necessary to acquire this application areas.	
Course	<b>S</b> (type,	number of weekly contact ho	ours, language — if other than Ge	rman)		
V (4) + R (2)						
		<b>sessment</b> (type, scope, la ble for bonus)	anguage — if other than German,	examination offered — if not	every semester, information on whether	
					lidate each (approx. 30 minute 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

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Allocation of places
Additional information
Workload

Teaching cycle

240 h

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



Module	title				Abbreviation	
Current Topics in Physics					11-BXP6-152-m01	
Module coordinator				Module offere	d by	
chairpe	erson of	examination commi	ttee	Faculty of Phy	sics and Astronomy	
ECTS	Method	l of grading	Only after succ.	compl. of module(	s)	
6	numeri	cal grade				
Duratio	n /	Module level	Other prerequisi	tes		
1 semester undergraduate Approval from examination committee required.						
Content	ts		,			
Current topics of Experimental and Theoretical Physics. Accredited academic achievements, e.g. in case of change of university or study abroad.						
Intende	ed learni	ng outcomes				
Theoret subdisc	tical Phy cipline o	sics of the Bachelor f Physics and under	r's programme of Nan rstand the measuring	ostructure Technol and/or calculation	ents of a module of Experimental or ogy. They have knowledge of a curre methods necessary to acquire this we the application areas.	
Courses	<b>S</b> (type, nu	mber of weekly contact ho	ours, language — if other than	n German)		
V (3) + F	R (1)					
Method			anguage — if other than Germ	nan, examination offered	- if not every semester, information on whethe	
module is	creditable	TOT DOTIUS)				

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

Allocation	of places

**Additional information** 

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180 h

Workload

**Teaching cycle** 

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



Module title					Abbreviation
Curren	t Topic	s Physics			11-BXP5-152-m01
Module coordinator				Module offered b	by '
chairpe	erson o	f examination commit	ttee	Faculty of Physic	s and Astronomy
ECTS	Meth	od of grading	Only after succ. co	mpl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites	S	
1 semester undergraduate Approval from examination committee required.				e required.	
Contents					
		s of Experimental and versity or study abroa		credited academic	achievements, e.g. in case of
Intend	ed lear	ning outcomes			
Theore subdis	tical Pł cipline	nysics of the Bachelor of Physics and under	's programme of Nanost	tructure Technolog d/or calculation m	ts of a module of Experimental or y. They have knowledge of a currer ethods necessary to acquire this he application areas.
Course	<b>S</b> (type, i	number of weekly contact ho	urs, language — if other than Ge	erman)	
V(2) + R(2)					
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)					
					andidate each (approx. 30 minutes ) or project report (approx. 8 to 10

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 examination date at the latest.

Language of assessment: German and/or English

Allocation of places	
Additional information	

## Workload

150 h

# **Teaching cycle**

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



Modul	e title			Abbreviation	
Current Topics in Quantum Technology					11-BXN5-212-m01
Module coordinator				Module offered by	I.
Manag	ing Dir	ector of the Institute of A	pplied Physics	Faculty of Physics a	and Astronomy
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conter	ıts				
	t topics abroad.		s. Credited academic	achievements, e.g. i	n case of change of university or
Intend	ed lear	ning outcomes			
Techno commo and ev	ology oi ands kr aluatio	n Bachelor's level. He/Sh nowledge in a current fiel	ne ld in Quantum Techno cessary to acquire thi	ology or Nanoscience	lule in Nanosciences or Quantum es and insight into the measuring e is able to classify and to link

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

V(2) + R(2)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

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# **Allocation of places**

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#### **Additional information**

Approval from examination committee required.

#### Workload

150 h

#### **Teaching cycle**

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



Modul	e title			Abbreviation		
Current Topics in Quantum Technology					11-BXN6-212-m01	
Module coordinator				Module offered by		
Managing Director of the Institute of Applied Physics			oplied Physics	Faculty of Physics and Astronomy		
ECTS	Metho	Method of grading Only after succ. co		mpl. of module(s)		
6	nume	rical grade				
Duratio	on	Module level	Other prerequisites	Other prerequisites		
1 seme	ster	undergraduate				
Contents						
	Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.					

## **Intended learning outcomes**

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(3) + R(1)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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



Module	e title		Abbreviation					
Current	t Topic	s in Quantum Technology	y		11-BXN8-212-m01			
Module	e coord	inator		Module offered by				
Managing Director of the Institute of Applied Physics				Faculty of Physics and Astronomy				
ECTS	Meth	Method of grading Only after		fter succ. compl. of module(s)				
8	nume	rical grade						
Duration Module level		Other prerequisites						
1 semester		undergraduate						
Contents								
Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.								
Intended learning outcomes								

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

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

V(4) + R(2)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

## Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

240 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$ 



Modul	e title		Abbreviation					
Select	ed Topi	cs in Quantum Technolog	gy		11-CSN6-212-m01			
Modul	e coord	inator		Module offered by				
Manag	ing Dire	ector of the Institute of A <sub>l</sub>	oplied Physics	Faculty of Physics and Astronomy				
ECTS	Metho	od of grading	Only after succ. co	er succ. compl. of module(s)				
6	nume	erical grade						
Duration		Module level	Other prerequisites					
1 semester		undergraduate						
Contents								
Current topics in experimental physics. Credited academic achievements, e.g. in case of change of university or study abroad.								

#### **Intended learning outcomes**

The student posseses advanced knowledge meeting the requirements of a module in Nanosciences or Quantum Technology on Bachelor's level. He/She

commands knowledge in a current field in Quantum Technology or Nanosciences and insight into the measuring and evaluation methods which are necessary to acquire this knowledge. He/She is able to classify and to link the learnt. He/She knows about fields of application.

 $\textbf{Courses} \ (\textbf{type}, \, \textbf{number of weekly contact hours, language} - \textbf{if other than German})$ 

V(3) + R(1)

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

Written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, 30 minutes per candidate) or report on practical course (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

#### Allocation of places

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#### **Additional information**

Approval from examination committee required.

#### Workload

180 h

#### **Teaching cycle**

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 $\textbf{Referred to in LPO I} \ \ (\text{examination regulations for teaching-degree programmes})$