Module Catalogue
for the Module studies (Bachelor)
Quantum Technology

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

The subject is divided into
Abbreviations used, Conventions, Notes, In accordance with  3
Winter Term 2021  4
Current Topics in Physics  6
Current Topics in Physics  7
Current Topics Physics  8
Current Topics in Quantum Technology  9
Current Topics in Quantum Technology  10
Current Topics in Quantum Technology  11
Current Topics in Quantum Technology  12
Selected Topics in Energy and Material Science  13
Selected Topics in Solid State Physics  14
Selected Topics in Quantum Technology  15
The subject is divided into

<table>
<thead>
<tr>
<th>section / sub-section</th>
<th>starting page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter Term 2021</td>
<td>0</td>
</tr>
</tbody>
</table>
Abbreviations used

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

Term: SS = summer semester, WS = winter semester

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

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

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

Conventions

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)
06-May-2019 (2020-39)
22-Jul-2020 (2020-57)
17-Dec-2020 (2020-110)
10-Mar-2021 (2021-17)
09-Jun-2021 (2021-58)

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

(0 ECTS credits)
Current Topics in Physics

Module title

Abbreviation

11-BXP8-152-m01

Module coordinator

Module offered by

chairperson of examination committee

Faculty of Physics and Astronomy

ECTS

Method of grading

Only after succ. compl. of module(s)

8

numerical grade

--

Duration

Module level

Other prerequisites

1 semester

undergraduate

Approval from examination committee required.

Contents

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)

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, 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

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Additional information

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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 Physics | 11-BXP6-152-m01

Module coordinator | Module offered by
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
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 (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, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).
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Language of assessment: German and/or English

Allocation of places
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Additional information
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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<table>
<thead>
<tr>
<th>Module title</th>
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<td>Current Topics Physics</td>
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<td>Faculty of Physics and Astronomy</td>
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### Contents
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
V (2) + R (2)

### Method of assessment
- written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes)
- or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).

If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.

Language of assessment: German and/or English

### Allocation of places
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### Additional information
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### Referred to in LPO I
(examination regulations for teaching-degree programmes)

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<table>
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<td>Current Topics in Quantum Technology</td>
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<td>Managing Director of the Institute of Applied Physics</td>
<td>Faculty of Physics and Astronomy</td>
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<th>Method of grading</th>
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<th>Module level</th>
<th>Other prerequisites</th>
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</thead>
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<tr>
<td>1 semester</td>
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</tbody>
</table>

**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 possesses 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 (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

**Allocation of places**

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**Additional information**

Approval from examination committee required.

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

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Module title
Current Topics in Quantum Technology

Abbreviation
11-BXN6-212-m01

Module coordinator
Managing Director of the Institute of Applied Physics

Module offered by
Faculty of Physics and Astronomy

ECTS
6

Method of grading
numerical grade

Only after succ. compl. of module(s)

Duration
1 semester

Module level
undergraduate

Other prerequisites

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 possesses 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.

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

**Current Topics in Quantum Technology**

### Abbreviation

11-BXN8-212-m01

### Module coordinator

Managing Director of the Institute of Applied Physics

### Module offered by

Faculty of Physics and Astronomy

### ECTS

8

### Method of grading

Only after succ. compl. of module(s)

### Duration

1 semester

### Module level

undergraduate

### Other prerequisites

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### 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 possesses 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.

### Referred to in LPO I

(examination regulations for teaching-degree programmes)

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<table>
<thead>
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<th>Abbreviation</th>
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<tbody>
<tr>
<td>Selected Topics in Energy and Material Science</td>
<td>11-CSEM6-152-m01</td>
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<table>
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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**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.

**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, 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**

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**Additional information**

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

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Module title: Selected Topics in Solid State Physics

Abbreviation: 11-CSF6-152-m01

Module coordinator: chairperson of examination committee
Module offered by: Faculty of Physics and Astronomy

ECTS: 6
Method of grading: numerical grade
Duration: 1 semester
Module level: undergraduate
Other prerequisites: Approval from examination committee required.

Contents:
Selected topics of Solid-State Physics.

Intended learning outcomes:
The students have basic knowledge of a specialist field of Solid-State Physics 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.

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)
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Language of assessment: German and/or English

Allocation of places:
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Additional information:
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Referred to in LPO I (examination regulations for teaching-degree programmes):
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Module title | Abbreviation
--- | ---
Selected Topics in Quantum Technology | 11-CSN6-212-m01

Module coordinator | Module offered by
--- | ---
Managing Director of the Institute of Applied Physics | 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 | --

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 possesses 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)
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Language of assessment: German and/or English

Allocation of places
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Additional information
Approval from examination committee required.

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