Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

# Annex SFB

# Studienfachbeschreibung (subject description, SFB) for the subject FOKUS Physics as a Master's with 1 major

## with the degree "Master of Science" (120 ECTS credits)

Responsible: Faculty of Physics and Astronomy

Examination regulations version: 2011

Abbreviations used:

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

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

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

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

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

Conventions for the modules in this SFB:

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

Information on assessment procedures:

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

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

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

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

**ASPO2009**

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

**29-Jun-2011 (2011-40) except for mandatory electives added in Fast Track procedure at a later time**

**25-Mar-2013 (2012-185) except for mandatory electives added in Fast Track procedure at a later time**

**26-Sep-2012 (2012-33) except for mandatory electives added in Fast Track procedure at a later time**

**04-Nov-2014 (2014-71) except for mandatory electives added in Fast Track procedure at a later time**

**17-Dec-2014 (2014-85)**

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

Every module will be described using the following form:

| Abbreviation | **Module title** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | ECTS | | Duration | (in semesters) | Method of grading | | Module level | |
| | Courses | To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y | | | | | | |
| | Method of assessment | | | | | | | |
| | Only after successful completion of | if applicable | | | | | | |
| | Other prerequisites | if applicable | | | | | | |
| | Participants and allocation of places | if applicable | | | | | | |
| | Additional information | if applicable | | | | | | |
| | Referred to in LPO I | if applicable (examination regulations for teaching-degree programmes) | | | | | | |

| Compulsory Courses (54 ECTS credits) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11-OSP-072-m01 | **Advanced Seminar Experimental/Theoretical Physics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | talk with discussion (approx. 30 to 45 minutes) | | | | | |
| 11-PFM-111-m01 | **Advanced Practical Course Master** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | Prep seminar for Fortgeschrittenen-Praktikum Master (Advanced Practical Course Master): S (1 weekly contact hour)<br>Fortgeschrittenen-Praktikum Master (Advanced Practical Course Master) Part 1: P (3 weekly contact hours), German or English<br>Fortgeschrittenen-Praktikum Master (Advanced Practical Course Master) Part 2: P (3 weekly contact hours), German or English<br>Fortgeschrittenen-Praktikum Master (Advanced Practical Course Master) Part 3: P (3 weekly contact hours), German or English | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Prep seminar for Fortgeschrittenen-Praktikum Master (Advanced Practical Course Master): oral examination (approx. 5 to 10 minutes)<br>2. Lab course in part 1 (Fortgeschrittenen-Praktikum Master/Advanced Practical Course Master Part 1): a) Preparing the experiment will be considered successfully completed if an oral test (approx. 30 minutes) is passed prior to the experiment. b) Performing and evaluating the experiment will be considered successfully completed if a test is passed. Students must prepare an experiment log (approx. 8 pages).<br>3. Lab course in part 2 (Fortgeschrittenen-Praktikum Master/Advanced Practical Course Master Part 2): a) Preparing the experiment will be considered successfully completed if an oral test (approx. 30 minutes) is passed prior to the experiment. b) Performing and evaluating the experiment will be considered successfully completed if a test is passed. Students must prepare an experiment log (approx. 8 pages).<br>4. Lab course in part 3 (Fortgeschrittenen-Praktikum Master/Advanced Practical Course Master Part 3): a) Preparing the experiment will be considered successfully completed if an oral test (approx. 30 minutes) is passed prior to the experiment. b) Performing and evaluating the experiment will be considered successfully completed if a test is passed. Students must prepare an experiment log (approx. 8 pages).<br><br>Language of assessment: German or English<br>Students must register for assessment components 1 through 4 online (details to be announced).<br>Only those students who have attended the prep seminar for Fortgeschrittenen-Praktikum Master (Advanced Practical Course Master) will be allowed to perform experiments as part of the courses Fortgeschrittenen-Praktikum Master Parts 1 through 3.<br>Students will be offered one opportunity to retake element a) and/or element b) in the respective semester. To pass an assessment component, they must pass both elements (a and b) in the same semester.<br>To pass this module, students must pass each of the assessment components 1 through 4. | | | | | |
| 11-FPP-072-m01 | **FOKUS Project Practical Course Physics** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | P (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | placement report / fieldwork report / report on practical training / report on practical course / project report / report on technical course (approx. 20 pages) and talk (approx. 30 minutes) on respective topic researched<br>Language of assessment: German or English | | | | | |

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| 11-FS-PF-072-m01 | **Professional Specialization FOKUS Physics** | | | | | | | |
| | ECTS | 15 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | talk with discussion (approx. 30 to 45 minutes)<br>Language of assessment: German or English | | | | | |
| 11-MP-PF-072-m01 | **Scientific Methods and Project Management FOKUS Physics** | | | | | | | |
| | ECTS | 15 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | talk with discussion (approx. 30 to 45 minutes)<br>Language of assessment: German or English | | | | | |
| **Compulsory Electives (36 ECTS credits)** | | | | | | | | |
| **Specialisation Physic (20 ECTS credits)**<br>Modules worth a total of 20 ECTS credits must be successfully completed. Of these 41 ECTS credits, no less than 5 are to be achieved in the sub-area "Experimentelle Physik" ("Experimental Physics") and in the sub-area "Theoretische Physik" ("Theoretical Physics") each. | | | | | | | | |
| **Experimental Physics**<br>Students must achieve a minimum of 5 ECTS credits. | | | | | | | | |
| **Applied Physics and Metrology (Experiment)** | | | | | | | | |
| 11-A2-092-m01 | **Electronics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V + Ü (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | written examination (approx. 90 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| | Participants and allocation of places | | Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot. | | | | | |

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| 11-HLF-092-m01 | **Semiconductor Lasers - Principles and Current Research** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-ENT-092-m01 | **Principles of Energy Technologies** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-OHL-092-m01 | **Organic Semiconductor** | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + Ü (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes) | | | | | |
| | other prerequisites | | Admission prerequisite to assessment: successful completion of approx. 50% of exercises. Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-BSV-122-m01 | **Image and Signal Processing in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 08-PCM4-PHY-111-m01 | **Ultrafast Spectroscopy and Quantum Control** | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S + Ü (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | written examination (90 minutes) or oral examination of one candidate each (20 minutes) or talk (30 minutes)<br>Language of assessment: German or English | | | | | |

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| 11-ZDR-111-m01 | **Principles of two- and threedimensional Röntgen imaging** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-QUI-132-m01 | **Quantum Information Technology** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| 11-EXE6A-112-m01 | **Current Topics of Experimental Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| **Solid State Physics and Nanostructures (Experiment)** | | | | | | | | |
| 11-SPD-102-m01 | **Semiconductor Physics and Devices** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | written examination (approx. 90 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-FK2-092-m01 | **Solid State Physics 2** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-FKS-092-m01 | **Solid State Spectroscopy** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-HLF-092-m01 | **Semiconductor Lasers - Principles and Current Research** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-HLP-092-m01 | **Semiconductor Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-HNS-092-m01 | **Semiconductor Nanostructures** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-MAG-092-m01 | **Magnetism** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-NAN-092-m01 | **Nanoanalytics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-NDS-092-m01 | **Low-Dimensional Structures** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-QTH-102-m01 | **Quantum Transport in Semiconductor Nanostructures** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-NOP-092-m01 | **Nano-Optics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-QPM-092-m01 | **Quantum Phenomena in electronic correlated Materials** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-SPI-102-m01 | **Spintronics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-MSS-102-m01 | **Methods in Surface Spectroscopy** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-IEM-111-m01 | **Introduction to Electron Microscopy** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-FKS2-132-m01 | **Solid State Spectroscopy 2** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |

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| 11-PMM-132-m01 | **Physics of Advanced Materials** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXE6A-112-m01 | **Current Topics of Experimental Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

| Astrophysics and Particle Physics (Experiment) | | | | | | | | |
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| 11-TPE-092-m01 | **Experimental Particle Physics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-WWB-102-m01 | **Strong Interaction in Accelerator Experiments** | | | | | | | |
| | ECTS | 3 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-A4-072-m01 | **Astrophysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V + S (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | written examination (approx. 120 minutes) | | | | | |
| | other prerequisites | | Admission prerequisite to assessment: successful completion of approx. 50% of exercises. Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| | Participants and allocation of places | | Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot. | | | | | |
| 11-APP-111-m01 | **Practical Course Astrophysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | P (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) Preparing, performing and evaluating the experiments will be considered successfully completed if a Testat (exam) is passed. Experiments that were not successfully completed can be repeated once. Or b) discussion to test the candidate's understanding of the physics-related contents and results of the experiment (approx. 20 minutes).<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-ASP-092-m01 | **Introduction to Space Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-AWP-092-m01 | **Atmosphere and Space Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German or English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-DTS-111-m01 | **Particle Radiation Detectors** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + Ü (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-MAS-111-m01 | **Modern Astrophysics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-TPS-092-m01 | **Particle Physics (Standard Model)** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-ASM-131-m01 | **Astronomical Methods** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-EXE6A-112-m01 | **Current Topics of Experimental Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

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| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| **Complex Systems, Quantum Control and Biophysics (Experiment)** | | | | | | | | |
| 11-BMT-092-m01 | **Biophysical Measurement Technology in Medical Science** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-LMB-092-m01 | **Laboratory and Measurement Technology in Biophysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-NOP-092-m01 | **Nano-Optics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-SDC-092-m01 | **Statistics, Data Analysis and Computer Physics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-EXE6A-112-m01 | **Current Topics of Experimental Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

| Current Topics in Experimental Physics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11-EXE5-111-m01 | **Current Topics in Experimental Physics** | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXE6-111-m01 | **Current Topics in Experimental Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXE7-111-m01 | **Current Topics in Experimental Physics** | | | | | | | |
| | ECTS | 7 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXE8-111-m01 | **Current Topics in Experimental Physics** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-EXE6A-112-m01 | **Current Topics of Experimental Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| **Theoretical Physics**<br>Students must achieve a minimum of 5 ECTS credits. | | | | | | | | |
| **Applied Physics and Metrology (Theory)** | | | | | | | | |
| 11-EPP-092-m01 | **Introduction to Plasmaphysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-TDO-092-m01 | **Thermodynamics and Economics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-TDOE-141-m01 | **Thermodynamics and Economics** | | | | | | | |
| | ECTS | 3 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes) | | | | | |
| 11-EXT6A-112-m01 | **Current Topics of Theoretical Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

| Solid State Physics and Nanostructures (Theory) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11-QM2-092-m01 | **Quantum Mechanics II** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-QVTP-092-m01 | **Many Body Quantum Theory** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-RMS-092-m01 | **Relativistic Effects in Mesoscopic Systems** | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-TFK-092-m01 | **Theoretical Solid State Physics** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-TSL-092-m01 | **Theory of Superconduction** | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-RMFT-102-m01 | **Renormalization Group Methods in Field Theory** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-EEW-102-m01 | **Electron Electron Interaction** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-TFK2-111-m01 | **Theoretical Solid State Physics 2** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-CRP-131-m01 | **Critical Phenomena** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks), presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-UGS-131-m01 | **Disordered Systems** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semesters. | | | | | |
| 11-TFP-132-m01 | **Topology in Solid State Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |

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| 11-TOPO-132-m01 | **Topological Order** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| 11-DFT-142-m01 | **Density Functional Theory and the Physics of Oxide Heterostructure** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + D (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: approx. 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| 11-FTFK-112-m01 | **Field Theory in Solid State Physics** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-EXT6A-112-m01 | **Current Topics of Theoretical Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| **Astrophysics and Particle Physics (Theory)** | | | | | | | | |
| 11-A4-072-m01 | **Astrophysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V + S (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | written examination (approx. 120 minutes) | | | | | |
| | other prerequisites | | Admission prerequisite to assessment: successful completion of approx. 50% of exercises. Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| | Participants and allocation of places | | Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot. | | | | | |

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| 11-AKM-092-m01 | **Cosmology** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-APL-092-m01 | **Plasma-Astrophysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-ASP-092-m01 | **Introduction to Space Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-EPP-092-m01 | **Introduction to Plasmaphysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-GRT-092-m01 | **Group Theory** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-NMA-111-m01 | **Computational Astrophysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-QFT2-092-m01 | **Quantum Field Theory II** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-SUS-092-m01 | **Supersymmetry I and II** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-RNT-092-m01 | **Renormalization Theory** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-RQFT-092-m01 | **Relativistical Quantumfield Theory** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-RTT-092-m01 | **Theory of Relativity** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-TEP-092-m01 | **Theoretical Elementary Particle Physics** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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| 11-TPS-092-m01 | **Particle Physics (Standard Model)** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-AST-092-m01 | **Theoretical Astrophysics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | written examination (approx. 120 minutes) | | | | | |
| 11-ETT-111-m01 | **Introduction to Elementary Particle Theory** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-QSG-102-m01 | **Quantum Loop Gravity** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + S (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or<br>b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or<br>c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or<br>d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-MAS-111-m01 | **Modern Astrophysics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-ATT-111-m01 | **Concepts of Theoretical Astroparticle physics** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-ART-112-m01 | **General Theory of Relativity** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-SRT-112-m01 | **Special Theory of Relativity** | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009. | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-EXT6A-112-m01 | **Current Topics of Theoretical Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

| Complex Systems, Quantum Control and Biophysics (Theory) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11-PKS-092-m01 | **Physics of Complex Systems** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |
| 11-QIC-092-m01 | **Quantum Information and Quantum Computing** | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | R + V (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXT6A-112-m01 | **Current Topics of Theoretical Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| **Current Topics in Theoretical Physics** | | | | | | | | |
| 11-EXT5-111-m01 | **Current Topics in Theoretical Physics** | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXT6-111-m01 | **Current Topics in Theoretical Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-EXT7-111-m01 | **Current Topics in Theoretical Physics** | | | | | | | |
| | ECTS | 7 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXT8-111-m01 | **Current Topics in Theoretical Physics** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXP6-111-m01 | **Current Topics in Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |
| 11-EXT6A-112-m01 | **Current Topics of Theoretical Physics** | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V + R (no information on SWS (weekly contact hours) and course language available) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes)<br>Language of assessment: German, English | | | | | |
| | other prerequisites | | Approval by examination committee required. | | | | | |

<table>
<tr><th colspan="3">Mathematical Physics</th></tr>
<tr><td rowspan="5">10-M=MP1-122-m01</td><td colspan="2">Analysis and Geometry of Classical Systems</td></tr>
<tr><td>ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate</td></tr>
<tr><td>Courses</td><td>V + Ü (no information on SWS (weekly contact hours) and course language available)</td></tr>
<tr><td>Method of assessment</td><td>At the beginning of the course, the lecturer will choose one of the following methods of assessment: a) written examination (approx. 90 to 120 minutes; usually chosen), b) oral examination of one candidate each (approx. 20 minutes), c) oral examination in groups of 2 candidates (approx. 30 minutes total)<br>Language of assessment: German, English</td></tr>
<tr><td>other prerequisites</td><td>Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.</td></tr>
<tr><td rowspan="5">10-M=MP2-122-m01</td><td colspan="2">Algebra and Dynamics of Quantum Systems</td></tr>
<tr><td>ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate</td></tr>
<tr><td>Courses</td><td>V + Ü (no information on SWS (weekly contact hours) and course language available)</td></tr>
<tr><td>Method of assessment</td><td>At the beginning of the course, the lecturer will choose one of the following methods of assessment: a) written examination (approx. 90 to 120 minutes; usually chosen), b) oral examination of one candidate each (approx. 20 minutes), c) oral examination in groups of 2 candidates (approx. 30 minutes total)<br>Language of assessment: German, English</td></tr>
<tr><td>other prerequisites</td><td>Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.</td></tr>
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**Research Modules Physics (16 ECTS credits)**
Students must achieve a minimum of 16 ECTS credits.

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|---|---|---|---|---|---|---|---|---|
| 11-FM-TPE-092-m01 | **FOKUS Research Module Experimental Particle Physics** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Experimentelle Teilchenphysik (Experimental Particle Physics): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (details to be announced)<br>Kompaktseminar Experimentelle Teilchenphysik (Block Taught Seminar Experimental Particle Physics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year (details to be announced); details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | 11-KET; recommended: 11-DTS, 11-TPS | | | | | |
| 11-FM-HLF-092-m01 | **FOKUS Research Module Semiconductor Lasers** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Halbleiterlaser - Grundlagen und aktuelle Forschung (Semiconductor Lasers - Principles and Current Research): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Halbleiterlaser (Block Taught Seminar Semiconductor Lasers): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-FM-SPD-102-m01 | **FOKUS Research Module Applied Semiconductor Physics and Devices** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Halbleiterphysik und Bauelemente (Applied Semiconductor Physics and Devices): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (winter semester)<br>Kompaktseminar Halbleiterphysik und Bauelemente (Block Taught Seminar Applied Semiconductor Physics and Devices): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | 11-KM-2 | | | | | |
| 11-FM-TFK-092-m01 | **FOKUS Research Module Theoretical Solid State Physics** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Theoretische Festkörperphysik (Theoretical Solid State Physics): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (winter semester)<br>Kompaktseminar Theoretische Festkörperphysik (Block Taught Seminar Theoretical Solid State Physics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | Recommended: 11-KM, 11-TQM | | | | | |

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|---|---|---|---|---|---|---|---|---|
| 11-FM-TSL-092-m01 | **FOKUS Research Module Theory of Superconductivity** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Theorie der Supraleitung (Theory of Superconduction): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Theorie der Supraleitung (Block Taught Seminar Theory of Superconduction): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-AST-092-m01 | **FOKUS Research Module Theoretical Astrophysics** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Theoretische Astrophysik (Theoretical Astrophysics): V (3 weekly contact hours) + Ü/P (1 weekly contact hour)<br>Kompaktseminar Theoretische Astrophysik (Block Taught Seminar Theoretical Astrophysics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment component 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | Mechanics, electrodynamics, programming in C++; recommended: atomic, nuclear and particle physics, thermodynamics. | | | | | |

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| 11-FM-PKS-092-m01 | **FOKUS Research Module Complex Systems** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Physik komplexer Systeme (Physics of Complex Systems): V (2 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (winter semester)<br>Kompaktseminar Komplexe Systeme (Block Taught Seminar Complex Systems): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered in the winter semester (details to be announced); details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-PKS-MF-092-m01 | **FOKUS Research Module Complex Systems with Mini Research Project** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Physik komplexer Systeme (Physics of Complex Systems): V (2 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (winter semester)<br>Kompaktseminar Komplexe Systeme (Block Taught Seminar Complex Systems): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break)<br>Miniforschungsprojekt Komplexe Systeme (Mini Research Project Complex Systems): P (2 weekly contact hours), German or English, details on availability to be announced (either block taught during semester break or approx. 3 weeks part time) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 through 3 will be offered in German or English.<br>Students must register for assessment components 1 through 3 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment components 2 and 3 will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |

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| 11-FM-LHQ-092-m01 | **FOKUS Research Spintronic and Physics** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Lithographieverfahren in der Halbleitertechnik und Theorie des Quantentransports (Lithography in Semiconductor Technology and Theory of Quantum Transport): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (winter semester)<br>Kompaktseminar Spintronik und Nanophysik (Block Taught Seminar Spintronics and Nanophysics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-RMS-092-m01 | **FOKUS Research Module Dirac Fermions in Mesoscopic Systems** | | | | | | | |
| | ECTS | 9 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Relativistische Effekte in Mesoskopischen Systemen (Relativistic Effects in Mesoscopic Systems): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English<br>Kompaktseminar Dirac Fermionen in Mesoskopischen Systemen (Block Taught Seminar Dirac Fermions in Mesoscopic Systems): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM-RQFT-092-m01 | **FOKUS Research Module Relativistic Quantum Field Theory** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Relativistische Quantenfeldtheorie (Relativistic Quantum Field Theory): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (winter semester)<br>Kompaktseminar Relativistische Quantenfeldtheorie (Block Taught Seminar Relativistic Quantum Field Theory): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (1 to 3 days) held towards the end of semester break or at the beginning of the subsequent semester) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | Lectures Theoretische Physik (Theoretical Physics); Quantenmechanik 2 (Quantum Mechanics 2) recommended. | | | | | |
| 11-FM-RQFT-MF-092-m01 | **FOKUS Research Module Relativistic Quantum Field Theory with Mini Research Project** | | | | | | | |
| | ECTS | 16 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Relativistische Quantenfeldtheorie (Relativistic Quantum Field Theory): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (winter semester)<br>Kompaktseminar Relativistische Quantenfeldtheorie (Block Taught Seminar Relativistic Quantum Field Theory): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (1 to 3 days) held towards the end of semester break or at the beginning of the subsequent semester)<br>Miniforschungsprojekt Relativistische Quantenfeldtheorie (Mini Research Project Relativistic Quantum Field Theory): P (2 weekly contact hours), German or English, details on availability to be announced (either block taught during semester break or approx. 3 weeks part time) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 through 3 will be offered in German or English.<br>Students must register for assessment components 1 through 3 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment components 2 and 3 will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |
| | other prerequisites | | Lectures Theoretische Physik (Theoretical Physics); Quantenmechanik 2 (Quantum Mechanics 2) recommended. | | | | | |

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| 11-FM-TEP-092-mo1 | **FOKUS Research Module Theoretical Elementary Particle Physics** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Theoretische Elementarteilchenphysik (Theoretical Elementary Particle Physics): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (summer semester)<br>Kompaktseminar Theoretische Elementarteilchenphysik (Block Taught Seminar Theoretical Elementary Particle Physics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (1 to 3 days) held towards the end of semester break or at the beginning of the subsequent semester) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | 11-RQFT | | | | | |
| 11-FM-TEP-MF-092-mo1 | **FOKUS Research Module Theoretical Elementary Particle Physics with Mini Research Project** | | | | | | | |
| | ECTS | 16 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Theoretische Elementarteilchenphysik (Theoretical Elementary Particle Physics): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (summer semester)<br>Kompaktseminar Theoretische Elementarteilchenphysik (Block Taught Seminar Theoretical Elementary Particle Physics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break)<br>Miniforschungsprojekt Theoretische Elementarteilchenphysik (Mini Research Project Theoretical Elementary Particle Physics): P (2 weekly contact hours), German or English, details on availability to be announced (either block taught during semester break or approx. 3 weeks part time) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 through 3 will be offered in German or English.<br>Students must register for assessment components 1 through 3 online (details to be announced).<br>Details on when assessment components 2 and 3 will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |
| | other prerequisites | | 11-RQFT | | | | | |

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| 11-FM-QPM-092-m01 | **FOKUS Research Module Quantum Phenomena in electronic correlated Materials** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Quantenphänomene in elektronisch korrelierten Materialien (Quantum Phenomena in Electronic Correlated Materials): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (details to be announced)<br>Kompaktseminar Quantenphänomene in elektronisch korrelierten Materialien (Block Taught Seminar Quantum Phenomena in Electronic Correlated Materials): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year (details to be announced); details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-QPM-MF-092-m01 | **FOKUS Research Module Quantum Phenomena in electronic correlated Materials with Mini Research Project** | | | | | | | |
| | ECTS | 14 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Quantenphänomene in elektronisch korrelierten Materialien (Quantum Phenomena in Electronic Correlated Materials): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (details to be announced)<br>Kompaktseminar Quantenphänomene in elektronisch korrelierten Materialien (Block Taught Seminar Quantum Phenomena in Electronic Correlated Materials): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break)<br>Miniforschungsprojekt Quantenphänomene in elektronisch korrelierten Materialien (Mini Research Project Quantum Phenomena in Electronic Correlated Materials): P (2 weekly contact hours), German or English, details on availability to be announced (either block taught during semester break or approx. 3 weeks part time) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 through 3 will be offered in German or English.<br>Students must register for assessment components 1 through 3 online (details to be announced).<br>Assessment component 1 will be offered once a year (details to be announced); details on when assessment components 2 and 3 will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |

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| 11-FM-LMB-092-mo1 | **FOKUS Research Module Biophysics - Laboratory and Measurement Technology** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Labor- und Messtechnik in der Biophysik (Laboratory and Measurement Technology in Biophysics): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Biophysik - Labor- und Messtechnik (Block Taught Seminar Biophysics - Laboratory and Measurement Technology): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-BMT-092-mo1 | **FOKUS Research Module Biophysics - Biophysical Measurement Technology in Medical Science** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Biophysikalische Messtechnik in der Medizin (Biophysical Measurement Technology in Medical Science): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (winter semester)<br>Kompaktseminar Biophysik - Biophysikalische Messtechnik in der Medizin (Block Taught Seminar Biophysics - Biophysical Measurement Technology in Medical Science): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM-NOP-092-m01 | **FOKUS Research Module Nano Optics** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Nanoelektronik (Nanoelectronics): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Nanoelektronik (Block Taught Seminar Nanoelectronics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced). Students must meet certain prerequisites to qualify for admission to assessment component 1. The lecturer will inform them about the respective details at the beginning of the course.<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-QTH-102-m01 | **FOKUS Research Module Quantum Transport in Semiconductor Nanostructures** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Quantentransport in Halbleiter-Nanostrukturen (Quantum Transport in Semiconductor Nanostructures): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Quantentransport in Halbleiternanostrukturen (Block Taught Seminar Quantum Transport in Semiconductor Nanostructures): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM-NDS-092-m01 | **FOKUS Research Module Low Dimensional Structures** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Niederdimensionale Strukturen (Low Dimensional Structures): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (details to be announced)<br>Kompaktseminar Niederdimensionale Strukturen (Block Taught Seminar Low Dimensional Structures): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year (details to be announced); details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-MSS-102-m01 | **FOKUS Research Module Methods in Surface Spectroscopy** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Methods in Surface Spectroscopy: V (3 weekly contact hours), usually English, once a year (winter semester)<br>Kompaktseminar (Block Taught Seminar) Applications of Surface Spectroscopy: S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | 11-TQM, 11-KM2 , 11-FK2 (or 11-T3, 11-E5, 11-E7) | | | | | |

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| 11-FM-MSS-MF-102-m01 | **FOKUS Research Module Methods in Surface Spectroscopy with Mini Research Project** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Methods in Surface Spectroscopy: V (3 weekly contact hours), usually English, once a year (winter semester)<br>Kosmologie (Cosmology): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English<br>Kompaktseminar (Block Taught Seminar) Applications of Surface Spectroscopy: S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break)<br>Miniforschungsprojekt zu Surface Spectroscopy (Mini Research Project Surface Spectroscopy): P (2 weekly contact hours) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 through 3 will be offered in German or English.<br>Students must register for assessment components 1 through 3 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment components 2 and 3 will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |
| | other prerequisites | | 11-TQM, 11-KM2 , 11-FK2 (or 11-T3, 11-E5, 11-E7) | | | | | |
| 11-FM-HAS-111-m01 | **FOKUS Research Module High Energy Astrophysics** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Plasma-Astrophysik (Plasma-Astrophysics): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kosmologie (Cosmology): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English<br>Kompaktseminar Hochenergie-Astrophysik (Block Taught Seminar High Energy Astrophysics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment component 2 will be offered to be announced.<br>Lectures and exercises will cover either plasma-astrophysics or cosmology (as announced by or agreed upon with the lecturer).<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | 11-A4, 11-KET | | | | | |

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| 11-FM-HAS-MF-111-mo1 | **FOKUS Research Module High Energy Astrophysics with Mini Research Project** | | | | | | | |
| | ECTS | 16 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Plasma-Astrophysik (Plasma-Astrophysics): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kosmologie (Cosmology): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English<br>Kompaktseminar Hochenergie-Astrophysik (Block Taught Seminar High Energy Astrophysics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break)<br>Astrophysikalisches Praktikum (Practical Course Astrophysics): P (4 weekly contact hours) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Lab course (research project): a) Preparing, performing and evaluating the experiments will be considered successfully completed if a Testat (exam) is passed. Students will be given one opportunity to repeat experiments they did not pass. Or b) discussion to test the students' understanding of the physics-related contents and results of the experiment (approx. 20 minutes).<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 through 3 online (details to be announced).<br>Details on when assessment component 2 will be offered to be announced.<br>Lectures and exercises will cover either plasma-astrophysics or cosmology (as announced by or agreed upon with the lecturer).<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | 11-A4, 11-KET | | | | | |
| 11-FM-NOS-F-111-mo1 | **FOKUS Research Module Spectroscopy and Nano-Optics** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Festkörper-Spektroskopie (Solid State Spectroscopy): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Nano-Optik und Spektroskopie (Block Taught Seminar Nano-Optics and Spectroscopy): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | 11-KM, 11-TQM | | | | | |

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| 11-FM-NOS-N-111-m01 | **FOKUS Research Module Nano-Optics and Spectroscopy** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Nano-Optik (Nano-Optics): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Nano-Optik (Block Taught Seminar Nano-Optics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced). Students must meet certain prerequisites to qualify for admission to assessment component 1. The lecturer will inform them about the respective details at the beginning of the course.<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM4-112-m01 | **FOKUS Research Module** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM6-112-m01 | **FOKUS Research Module** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM8-112-m01 | **FOKUS Research Module** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM4-MF-112-mo1 | **FOKUS Research Module with Mini Research Project** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Miniforschungsprojekt (FOKUS Mini Research Project): P (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 and 3 will be offered in German or English.<br>Students must register for assessment components 1 and 3 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |
| 11-FM6-MF-112-mo1 | **FOKUS Research Module with Mini Research Project** | | | | | | | |
| | ECTS | 14 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Miniforschungsprojekt (FOKUS Mini Research Project): P (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 and 3 will be offered in German or English.<br>Students must register for assessment components 1 and 3 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |

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| 11-FM8-MF-112-mo1 | **FOKUS Research Module with Mini Research Project** | | | | | | | |
| | ECTS | 16 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Miniforschungsprojekt (FOKUS Mini Research Project): P (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 and 3 will be offered in German or English.<br>Students must register for assessment components 1 and 3 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |
| 11-FM4A-112-mo1 | **FOKUS Research Module** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM6A-112-m01 | **FOKUS Research Module** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM8A-112-m01 | **FOKUS Research Module** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM4A-MF-112-mo1 | **FOKUS Mini Research Project** | | | | | | | |
| | ECTS | 12 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Miniforschungsprojekt (FOKUS Mini Research Project): P (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 and 3 will be offered in German or English.<br>Students must register for assessment components 1 and 3 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |
| 11-FM6A-MF-112-mo1 | **FOKUS Research Module with Mini Research Project** | | | | | | | |
| | ECTS | 14 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Miniforschungsprojekt (FOKUS Mini Research Project): P (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 and 3 will be offered in German or English.<br>Students must register for assessment components 1 and 3 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |

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| 11-FM8A-MF-112-m01 | **FOKUS Research Module with Mini Research Project** | | | | | | | |
| | ECTS | 16 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | FOKUS Vorlesung zu aktuellen Forschungsthemen (FOKUS Lecture on Topics in Current Research): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Kompaktseminar (FOKUS Block Taught Seminar): S (2 weekly contact hours), German or English, details on availability to be announced<br>FOKUS Miniforschungsprojekt (FOKUS Mini Research Project): P (2 weekly contact hours), German or English, details on availability to be announced | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 and 3 will be offered in German or English.<br>Students must register for assessment components 1 and 3 online (details to be announced).<br>Details on when assessment components will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |
| 11-FM-TI-131-m01 | **FOKUS Research Module Topological Insulators** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Quantentransport in Halbleiter-Nanostrukturen (Quantum Transport in Semiconductor Nanostructures): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Topologische Isolatoren (Block Taught Seminar Topological Insulators): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (1 to 3 days) held towards the end of semester break or at the beginning of the subsequent semester) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM-TFP-141-m01 | **FOKUS Research Module Topology in Solid State Physics** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Topologie in der Festkörperphysik (Topology in Solid State Physics): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Topologie in der Festkörperphysik (Block Taught Seminar Topology in Solid State Physics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-TFP-MF-141-m01 | **FOKUS Research Module Topology in Solid State Physics with Mini Research Project** | | | | | | | |
| | ECTS | 14 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Topologie in der Festkörperphysik (Topology in Solid State Physics): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (summer semester)<br>Kompaktseminar Topologie in der Festkörperphysik (Block Taught Seminar Topology in Solid State Physics): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break)<br>Miniforschungsprojekt Topologie in der Festkörperphysik (Mini Research Project Topology in Solid State Physics): P (2 weekly contact hours), German or English, details on availability to be announced (either block taught during semester break or approx. 3 weeks part time) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br>3. Research project: project report (approx. 8 pages)<br><br>Assessment components 1 through 3 will be offered in German or English.<br>Students must register for assessment components 1 through 3 online (details to be announced).<br>Assessment component 1 will be offered once a year in the summer semester; details on when assessment components 2 and 3 will be offered to be announced.<br>To pass this module, students must pass each of the assessment components 1 through 3. | | | | | |

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| 11-FM-QUI-132-mo1 | **FOKUS Quantum Information Technology** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Quanteninformationstechnologie (Quantum Information Technology): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (winter semester)<br>Kompaktseminar Quanteninformationstechnologie (Block Taught Seminar Quantum Information Technology): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| 11-FM-QUI-141-mo1 | **FOKUS Research Module Quantum Information Technology** | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Quanteninformationstechnologie (Quantum Information Technology): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (winter semester)<br>Kompaktseminar Quanteninformationstechnologie (Block Taught Seminar Quantum Information Technology): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |

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| 11-FM-DFT-142-m01 | **FOKUS Research Module Density Functional Theory and the Physics of Oxide Heterostructure** | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | Dichtefunktionaltheorie und Physik der oxidischen Heterostrukturen (Density Functional Theory and Physics of Oxide Heterostructures): V (2 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (winter semester)<br>Kompaktseminar Dichtefunktionaltheorie und Physik der oxidischen Heterostrukturen (Block Taught Seminar Density Functional Theory and Physics of Oxide Heterostructures): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break) | | | | | |
| | Method of assessment | | This module has the following assessment components<br>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)<br>2. Seminar: talk (approx. 30 to 45 minutes)<br><br>Assessment components 1 and 2 will be offered in German or English.<br>Students must register for assessment components 1 and 2 online (details to be announced).<br>Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced.<br>To pass this module, students must pass both assessment component 1 and assessment component 2. | | | | | |
| | other prerequisites | | Recommended: 11-CMS | | | | | |
| **Thesis (30 ECTS credits)** | | | | | | | | |
| 11-MA-PF-111-m01 | **Master Thesis FOKUS Physics** | | | | | | | |
| | ECTS | 30 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | no courses assigned | | | | | |
| | Method of assessment | | written thesis<br>Language of assessment: German, English | | | | | |