

## Annex SFB

### Studienfachbeschreibung (subject description, SFB) for the subject Nanotechnology 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: 2016

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:

**ASPO2015**

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

**13-Apr-2016 (2016-67) except for mandatory electives 11-MRI-171, 11-SSC-172 added in Fast Track procedure at a later time**

**14-Mar-2018 (2018-20)**

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	<b>Module title</b>						
	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 Electives (60 ECTS credits)							
Subfield Nanostructure Technology (55 ECTS credits)							
Advanced Laboratory Course (9 ECTS credits)							
11-P-FM1-161-m01	<b>Advanced Laboratory Course Master Part 1</b>						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level graduate
	Courses	P (3)					
	Method of assessment	practical examination Students must successfully prepare, perform, document (lab notebook) and evaluate (in the form of a scientific publication) an experiment to be considered to have successfully completed this experiment. Students must successfully complete two experiments to be considered to have successfully completed this module. Detailed regulations are laid down in the respective module description. Language of assessment: German and/or English					
	other prerequisites	Preparation and safety briefing.					
11-P-FM2-161-m01	<b>Advanced Laboratory Course Master Part 2</b>						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level graduate
	Courses	P (3)					
	Method of assessment	practical examination Students must successfully prepare, perform, document (lab notebook) and evaluate (in the form of a scientific publication) an experiment to be considered to have successfully completed this experiment. Students must successfully complete two experiments to be considered to have successfully completed this module. Detailed regulations are laid down in the respective module description. Language of assessment: German and/or English					
	other prerequisites	Preparation and safety briefing.					
11-P-FM3-161-m01	<b>Advanced Laboratory Course Master Part 3</b>						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level graduate
	Courses	P (3)					
	Method of assessment	practical examination Students must successfully prepare, perform, document (lab notebook) and evaluate (in the form of a scientific publication) an experiment to be considered to have successfully completed this experiment. Students must successfully complete two experiments to be considered to have successfully completed this module. Detailed regulations are laid down in the respective module description. Language of assessment: German and/or English					
	other prerequisites	Preparation and safety briefing.					

11-P-FM4-161-mo1	<b>Advanced Laboratory Course Master Part 4</b>							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	graduate
	Courses	P (3)						
	Method of assessment	practical examination Students must successfully prepare, perform, document (lab notebook) and evaluate (in the form of a scientific publication) an experiment to be considered to have successfully completed this experiment. Students must successfully complete two experiments to be considered to have successfully completed this module. Detailed regulations are laid down in the respective module description. Language of assessment: German and/or English						
other prerequisites	Preparation and safety briefing.							
<b>Advanced Seminar (5 ECTS credits)</b>								
11-OSN-A-161-mo1	<b>Advanced Seminar Nanostructure Technology A</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	S (2) Module taught in: German or English						
Method of assessment	talk with discussion (30 to 45 minutes) Language of assessment: German and/or English							
11-OSN-B-161-mo1	<b>Advanced Seminar Nanostructure Technology B</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	S (2) Module taught in: German or English						
Method of assessment	talk with discussion (30 to 45 minutes) Language of assessment: German and/or English							
<b>Focus Nanostructure Technology</b>								
11-HNS-161-mo1	<b>Optical Properties of Semiconductor Nanostructures</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							

11-QTH-161-m01	<b>Quantum Transport</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
11-NOP-161-m01	<b>Nano-Optics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
11-SPI-161-m01	<b>Spintronics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						

11-BSV-161-mo1	<b>Image and Signal Processing in Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: German or English						
Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-PMM-161-mo1	<b>Physics of Advanced Materials</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-QUI-161-mo1	<b>Quantum Information Technology</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							

11-OHL-161-mo1	<b>Organic Semiconductors</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
o8-FU-SAM-161-mo1	<b>Sensor and Actor Materials - Functional Ceramics and Magnetic Particles</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + P (2)						
	Method of assessment	a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) Language of assessment: German and/or English Assessment offered: Once a year, summer semester P: creditable for bonus						
o8-PCM4-161-mo1	<b>Ultrafast spectroscopy and quantum-control</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	S (2) + Ü (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) Language of assessment: German and/or English						
	other prerequisites	Prior completion of modules o8-PCM1a and o8-PCM1b recommended.						
o8-FU-EEW-152-mo1	<b>Electrochemical Energy Storage and Conversion</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + P (1) + E (1)						
	Method of assessment	a) assessment and b) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical assignments (2 to 4 random examinations), weighted 7:3 Language of assessment: German and/or English Assessment offered: Once a year, summer semester						

o8-FU-MW-161-mo1	<b>Structure and Properties of Modern Materials: Experiments vs. Simulations</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + S (1)						
	Method of assessment	a) talk (approx. 30 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes total) Language of assessment: German and/or English Assessment offered: Once a year, winter semester						
11-FPA-161-mo1	<b>Visiting Research</b>							
	ECTS	10	Duration		Method of grading	numerical grade	Modul level	graduate
	Courses	R (0)						
	Method of assessment	project report (10 to 20 pages) Language of assessment: German and/or English						
other prerequisites	Approval from examination committee required.							
11-EXN5-161-mo1	<b>Current Topics in Nanostructure Technology</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + R (2)						
	Method of assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
other prerequisites	Approval from examination committee required.							
11-EXN6-161-mo1	<b>Current Topics in Nanostructure Technology</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
other prerequisites	Approval from examination committee required.							



11-EXN7-161-m01	<b>Current Topics in Nanostructure Technology</b>							
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	<p>written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).</p> <p>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</p> <p>Language of assessment: German and/or English</p>						
	other prerequisites	Approval from examination committee required.						
11-EXN8-161-m01	<b>Current Topics in Nanostructure Technology</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (4) + R (2)						
	Method of assessment	<p>written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).</p> <p>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</p> <p>Language of assessment: German and/or English</p>						
	other prerequisites	Approval from examination committee required.						
11-EXN6A-161-m01	<b>Current Topics in Nanostructure Technology</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	<p>written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).</p> <p>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</p> <p>Language of assessment: German and/or English</p>						
	other prerequisites	Approval from examination committee required.						

11-CSFM-161-mo1	<b>Advanced Topics in Solid State Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						
11-CSNM-161-mo1	<b>Advanced Topics in Nanostructure Technology</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						
11-CSPM-161-mo1	<b>Advanced Topics in Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						

11-FK2-161-m01	<b>Solid State Physics 2</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (4) + R (2) Module taught in: German or English						
11-FKS-161-m01	<b>Solid State Spectroscopy</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
11-MAG-161-m01	<b>Magnetism</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						

11-HLPH-161-m01	<b>Semiconductor Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
11-TQP-161-m01	<b>Topological Quantum Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
11-NDS-161-m01	<b>Low Dimensional Structures</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						

11-TFK-161-m01	<b>Theoretical Solid State Physics</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (4) + R (2) Module taught in: German or English						
Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-SUP-161-m01	<b>Superconductivity</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
11-QM2-161-m01	<b>Quantum Mechanics II</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + R (2) Module taught in: German or English						
Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							

11-QIC-161-mo1	<b>Quantum Information and Quantum Computing</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
Modules successfully completed	11-QM2 or 11-TFK							
11-TDO-161-mo1	<b>Thermodynamics and Economics</b>							
	ECTS	6	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						

11-MRI-171-mo1	<b>Advanced Magnetic Resonance Imaging</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
11-SSC-172-mo1	<b>Surface Science</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
11-EXP6-161-mo1	<b>Current Topics in Physik</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						

11-EXP6A-161-m01	<b>Current Topics in Physik</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						
11-EXP5-161-m01	<b>Current Topics in Physik</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + R (2)						
	Method of assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						
11-EXP7-161-m01	<b>Current Topics in Physik</b>							
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						



11-EXP8-161-m01	<b>Current Topics in Physik</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (4) + R (2)						
	Method of assessment	<p>written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).</p> <p>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</p> <p>Language of assessment: German and/or English</p>						
other prerequisites	Approval from examination committee required.							
<b>Subfield Non-technical Minor</b>								
10-M-VAN-152-m01	<b>Advanced Analysis</b>							
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2)						
	Method of assessment	<p>a) written examination (approx. 90 to 180 minutes, usually chosen) or</p> <p>b) oral examination of one candidate each (15 to 30 minutes) or</p> <p>c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate)</p> <p>Language of assessment: German and/or English</p> <p>creditable for bonus</p>						
10-M=V-DIM-161-m01	<b>Discrete Mathematics</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	<p>V (3) + Ü (1)</p> <p>Module taught in: German and/or English</p>						
	Method of assessment	<p>a) written examination (approx. 60 to 90 minutes, usually chosen) or</p> <p>b) oral examination of one candidate each (approx. 15 minutes) or</p> <p>c) oral examination in groups (groups of 2, approx. 10 minutes per candidate)</p> <p>Language of assessment: German or English</p> <p>Assessment offered: In the semester in which the course is offered and in the subsequent semester</p> <p>creditable for bonus</p>						

10-I=PA-161-m01	<b>Analysis and Design of Programs</b>								
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses	V (2) + Ü (2)							
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Additional Information	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IS,ES,GE							
10-I-OOP-152-m01	<b>Object oriented Programming</b>								
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses	V (2) + Ü (2)							
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Referred to in LPO I	§ 22 II Nr. 3 b)							
10-I-BS-152-m01	<b>Operating Systems</b>								
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses	V (2) + Ü (2)							
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Additional Information								
10-I=KI1-161-m01	<b>Artificial Intelligence 1</b>								
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate	
	Courses	V (2) + Ü (2)							
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus							
	Additional Information	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IS,HCI							
Master's with 1 major Nanostructure Technology (2016)					JMU Würzburg • generated 19-Apr-2025 • exam. reg. data record 88 224 - H 2016			page 18 / 22	

02-EReWi-G-161-m01	<b>Introduction to Law for Economists</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (2)						
	Method of assessment	written examination (approx. 120 minutes) Assessment offered: Usually once a year, winter semester						
Participants and allocation of places	There are no restrictions with regard to available places for students of Rechtswissenschaft (Law) as well as Bachelor's students with the minor Privatrecht (Private Law). A total of 20 places will be allocated to students of other subjects. 10 of these will be allocated to students of the Master's degree programme Economics. Should the number of available places exceed the number of applications, the remaining places may be allocated to students of other subjects. Should there be more than 10 applications, the remaining places will be allocated as follows: Students applying after not having successfully completed assessment in past years will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.							
02-N-P-Wo6-152-m01	<b>German and European Trade Mark Law</b>							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2)						
	Method of assessment	a) written examination (approx. 120 minutes) or b) oral examination (approx. 15 minutes) Assessment offered: Usually once a year, summer semester						
Participants and allocation of places	There are no restrictions with regard to available places for students of Rechtswissenschaft (Law) as well as Bachelor's students with the minor Privatrecht (Private Law). A total of 20 places will be allocated to students of other subjects. 10 of these will be allocated to students of the Master's degree programme Economics. Should the number of available places exceed the number of applications, the remaining places may be allocated to students of other subjects. Should there be more than 10 applications, the remaining places will be allocated as follows: Students applying after not having successfully completed assessment in past years will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.							
02-N-P-Wo7-152-m01	<b>Copyright Law and Fundamentals of Patent Law including references to EU Law</b>							
	ECTS	2	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (1)						
	Method of assessment	a) written examination (approx. 120 minutes) or b) oral examination (approx. 15 minutes) Assessment offered: Usually once a year, summer semester						
Participants and allocation of places	There are no restrictions with regard to available places for students of Rechtswissenschaft (Law) as well as Bachelor's students with the minor Privatrecht (Private Law). A total of 20 places will be allocated to students of other subjects. 10 of these will be allocated to students of the Master's degree programme Economics. Should the number of available places exceed the number of applications, the remaining places may be allocated to students of other subjects. Should there be more than 10 applications, the remaining places will be allocated as follows: Students applying after not having successfully completed assessment in past years will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.							

02-G&Hre-G-161-mo1	<b>Commercial and Business Law for Economists</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (2)						
	Method of assessment	written examination (approx. 120 minutes) Assessment offered: Usually once a year, summer semester						
Participants and allocation of places	There are no restrictions with regard to available places for students of Rechtswissenschaft (Law) as well as Bachelor's students with the minor Privatrecht (Private Law). A total of 20 places will be allocated to students of other subjects. 10 of these will be allocated to students of the Master's degree programme Economics. Should the number of available places exceed the number of applications, the remaining places may be allocated to students of other subjects. Should there be more than 10 applications, the remaining places will be allocated as follows: Students applying after not having successfully completed assessment in past years will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.							
11-AP-152-mo1	<b>Astrophysics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + R (2) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes) If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
11-ASM-161-mo1	<b>Methods of Observational Astronomy</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						

11-ASP-161-m01	<b>Introduction to Space Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1) Module taught in: German or English						
	Method of assessment	<p>a) written examination (approx. 90 to 120 minutes) or  b) oral examination of one candidate each (approx. 30 minutes) or  c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or  d) project report (approx. 8 to 10 pages) or  e) presentation/talk (approx. 30 minutes).</p> <p>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</p> <p>Language of assessment: German and/or English</p> <p>Assessment offered: In the semester in which the course is offered and in the subsequent semester</p>						
11-EXZ5-161-m01	<b>Additional Qualifications</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + R (2)						
	Method of assessment	<p>written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).</p> <p>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</p> <p>Language of assessment: German and/or English</p>						
	other prerequisites	Approval from examination committee required.						
11-EXZ6-161-m01	<b>Additional Qualifications</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	<p>written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).</p> <p>If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.</p> <p>Language of assessment: German and/or English</p>						
	other prerequisites	Approval from examination committee required.						

11-EXNT6-161-m01	<b>Non-technical Minor Subject</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (3) + R (1)						
	Method of assessment	written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English						
	other prerequisites	Approval from examination committee required.						
<b>Thesis (6o ECTS credits)</b>								
11-FS-N-161-m01	<b>Professional Specialization Nanostructure Technology</b>							
	ECTS	15	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	graduate
	Courses	S (4) Module taught in: German or English						
	Method of assessment	talk with discussion (30 to 45 minutes) Language of assessment: German and/or English						
11-MP-N-161-m01	<b>Scientific Methods and Project Management Nanostructure Technology</b>							
	ECTS	15	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	graduate
	Courses	R (4) Module taught in: German or English						
	Method of assessment	talk with discussion (30 to 45 minutes) Language of assessment: German and/or English						
11-MA-N-161-m01	<b>Master Thesis Nanostructure Technology</b>							
	ECTS	30	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	No courses assigned to module						
	Method of assessment	Master's thesis (750 to 900 hours total) Language of assessment: German and/or English						
	Additional Information	Time to complete: 6 months.						