

## Annex SFB

### Studienfachbeschreibung (subject description, SFB) for the subject Physics as a minor in a Bachelor's degree programme (60 ECTS credits)

Responsible: Faculty of Physics and Astronomy

Examination regulations version: 2026

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)):

**11-Mar-2026 (2026-29)**

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 Courses (40 ECTS credits)								
Classical Physics (16 ECTS credits)								
11-E-M-152-m01	<b>Classical Physics 1 (Mechanics)</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
	other prerequisites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.						
	Additional Information	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.						
Referred to in LPO I	§ 53 I Nr. 1 a) § 77 I Nr. 1 a)							
11-E-E-152-m01	<b>Classical Physics 2 (Heat and Electromagnetism)</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
	other prerequisites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.						
	Additional Information	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.						
Referred to in LPO I	§ 53 I Nr. 1 a) § 77 I Nr. 1 a)							

Theoretical Physics (16 ECTS credits)								
11-T-M-152-m01	<b>Theoretical Mechanics</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
	other prerequisites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.						
	Additional Information	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.						
11-T-Q-152-m01	<b>Quantum Mechanics</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
	other prerequisites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.						
	Additional Information	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.						

Laboratory Course Physics (8 ECTS credits)								
11-P-BNA-262-m01	<b>Laboratory Course Physics A (minor)</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (2)						
	Method of assessment	<p>practical examination</p> <p>The practical examination consists of two parts, both of which must be passed:</p> <ul style="list-style-type: none"> <li>• 1. Preparation, execution, and documentation of experiments in physics (approx. 240 minutes): The execution and evaluation of the experiments are documented in a measurement log or lab report. The quality of the documentation and evaluation will be assessed. If the documentation or evaluation is insufficient, exactly one experiment may be repeated.</li> <li>• 2. Final assessment (approx. 30 minutes): After successfully completing all experiments, a final test is conducted to assess the student's understanding of the connections between the module's physical concepts. The final test is conducted as an oral examination in groups of up to 2 candidates (standard, approx. 30 minutes per candidate) or an individual oral examination (approx. 30 minutes). The final test can be repeated once if it is not passed.</li> </ul>						
11-P-FR1-152-m01	<b>Data and Error Analysis</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (1) + Ü (1) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
	other prerequisites	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the semester.						
	Additional Information	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.						
	Referred to in LPO I	§ 53 I Nr. 1 c) § 77 I Nr. 1 d)						

11-P-BNB-262-m01	<b>Laboratory Course Physics B (minor)</b>							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (2)						
	Method of assessment	practical examination The practical examination consists of two parts, both of which must be passed: <ul style="list-style-type: none"> <li>1. Preparation, execution, and documentation of experiments in physics (approx. 240 minutes): The execution and evaluation of the experiments are documented in a measurement log or lab report. The quality of the documentation and evaluation will be assessed. If the documentation or evaluation is insufficient, exactly one experiment may be repeated.</li> <li>2. Final assessment (approx. 30 minutes): After successfully completing all experiments, a final test is conducted to assess the student's understanding of the connections between the module's physical concepts. The final test is conducted as an oral examination in groups of up to 2 candidates (standard, approx. 30 minutes per candidate) or an individual oral examination (approx. 30 minutes). The final test can be repeated once if it is not passed.</li> </ul>						
other prerequisites	Students are highly recommended to complete modules 11-P-BNA and 11-P-FR1 prior to completing module 11-P-BNB.							
<b>Compulsory Electives (20 ECTS credits)</b>								
<b>Module Group Experimental Physics</b>								
11-E-O-152-m01	<b>Optics and Waves</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
11-E-A-152-m01	<b>Atoms and Quanta</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
11-E-F-152-m01	<b>Introduction to Solid State Physics</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						

11-E-T-152-m01	<b>Nuclear and Elementary Particle Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (1) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
<b>Module Group Theoretical Physics</b>								
11-T-S-152-m01	<b>Statistical Physics</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
11-T-E-152-m01	<b>Electrodynamics</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: Exercises in: German or English						
	Method of assessment	written examination (approx. 120 minutes) Language of assessment: German and/or English						
<b>Module Group Applied Physics</b>								
11-CP-152-m01	<b>Computational Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	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: Once a year, winter semester						

11-EL-152-m01	<b>Electronic Circuits</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	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: Once a year, summer semester						
11-AP-152-m01	<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-LMT-152-m01	<b>Laboratory and Measurement Technology</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	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: Once a year, winter semester						
11-N-EIN-212-m01	<b>Introduction to Quantum Technology</b>							
	ECTS	7	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + S (2) Module taught in: German or English						
	Method of assessment	a) talk (30 to 45 minutes) with discussion and b) written examination (approx. 120 minutes) Language of assessment: German and/or English						
	other prerequisites	Admission prerequisite to assessment: regular attendance (minimum 85% of sessions).						
Additional Information	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.							

11-HS-152-m01	<b>Seminar Experimental/Theoretical Physics</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	S (2) Module taught in: German or English						
	Method of assessment	talk with discussion (30 to 45 minutes)						
	other prerequisites	Admission prerequisite to assessment: regular attendance (minimum 85% of sessions).						
Additional Information	Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.							
<b>Module Group Methods</b>								
11-P-VKM-202-m01	<b>MINT Preparatory Course Mathematical Methods of Physics</b>							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (1) + Ü (2)						
	Method of assessment	a) exercises (successful completion of approx. 50% of approx. 6 exercise sheets) or b) talk (approx. 15 minutes) Assessment offered: Once a year, winter semester						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
11-M-MR-202-m01	<b>Mathematical Methods of Physics</b>							
	ECTS	6	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (2) + Ü (2) + V (2) + Ü (2) Module taught in: German or English						
	Method of assessment	a) Exercises (successful completion of approx. 50% of approx. 13 exercise sheets) or b) Talk (approx. 15 minutes)						
Referred to in LPO I	§ 53 I Nr. 1 a) § 77 I Nr. 1 a)							

Module Group Current Topics								
11-BXP8-152-m01	<b>Current Topics in Physics</b>							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + R (2)						
	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-BXP6-152-m01	<b>Current Topics in Physics</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	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.						