Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Didactics in Physics (Middle School) as Didaktikfach

with the degree "Erste Staatsprüfung für das Lehramt an Mittelschulen"

Responsible: Faculty of Physics and Astronomy

Examination regulations version: 2015

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:

LASPO2015

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

20-Oct-2015 (2015-219)

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 (20 ECTS credits)
Successful completion of modules worth 20 ECTS credits in each subject selected as Didaktikfach (subject studied with a focus on teaching methodology) is a prerequisite for admission to the Erste Staatsprüfung (First State Examination) in the subject Didaktiken einer Fächergruppe der Mittelschule (Didactics of a Group of Subjects of Mittelschule).

11-L-PD1-152-m01	**Physics Teaching Concepts 1**							
	ECTS	2	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2)					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Language of assessment: German and/or English					
	Referred to in LPO I		§ 36 I Nr. 7 § 38 I Nr. 1 § 53 I Nr. 2 § 77 I Nr. 2					
11-L-PD2-152-m01	**Physics Teaching Concepts 2**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (1)					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) or d) term paper (approx. 8 pages) Language of assessment: German and/or English					
	Referred to in LPO I		§ 36 I Nr. 7 § 38 I Nr. 1 § 53 I Nr. 2 § 77 I Nr. 2					
11-L-SP1-152-m01	**Physics 1 for Primary and Secondary General School**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3) + Ü (1)					
	Method of assessment		a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 15 minutes per candidate) Language of assessment: German and/or English					
	Referred to in LPO I		§ 36 I Nr. 7 § 38 I Nr. 1					

11-L-SP2-152-m01	**Physics 2 for Primary and Secondary General School**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3) + Ü (1)					
	Method of assessment		a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 15 minutes per candidate) Language of assessment: German and/or English					
	Referred to in LPO I		§ 36 I Nr. 7 § 38 I Nr. 1					
11-L-SP3-152-m01	**Physics 3 for Primary and Secondary General School**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3) + Ü (1)					
	Method of assessment		a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 15 minutes per candidate) Language of assessment: German and/or English					
	Referred to in LPO I		§ 36 I Nr. 7 § 38 I Nr. 1					
Freier Bereich (general as well as subject-specific electives) (0-15 ECTS credits) Teaching degree students must take modules worth a total of 15 ECTS credits in the area Freier Bereich (general as well as subject-specific electives) (Section 9 LASPO (general academic and examination regulations for teaching-degree programmes)). To achieve the required number of ECTS credits, students may take any modules from the areas below. Freier Bereich -- interdisciplinary: The interdisciplinary additional offer for a teaching degree can be found in the respective Annex "Ergänzende Bestimmungen für den "Freien Bereich" im Rahmen des Studiums für ein Lehramt".								
Physics (Freier Bereich (general as well as subject-specific electives) -- subject specific)								
11-L-EL1-152-m01	**Teaching Seminar Fundamental Principles**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) term paper (approx. 8 pages) or b) presentation (approx. 45 minutes) or c) written examination (approx. 45 minutes) or d) oral examination of one candidate each (approx. 15 minutes) or e) oral examination in groups (groups of 2, approx. 15 minutes per candidate) 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-L-EL2-152-m01	**Selected Topics in Physics Didactics**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) term paper (approx. 8 pages) or b) presentation (approx. 45 minutes) or c) written examination (approx. 45 minutes) or d) oral examination of one candidate each (approx. 15 minutes) or e) oral examination in groups (groups of 2, approx. 15 minutes per candidate) 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-P-VKM-152-m01	**Preparatory Course Mathematics**							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		T (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-L-L3B-152-m01	**Student Lab Supervision (Physics)**							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (2)					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) or d) term paper (approx. 8 pages)					
	Additional Information		This module is designed for students studying at least one subject in the natural sciences.					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					

11-MIND-Ph1-152-m01	**Low Cost - High Impact. Low-budget Experiments for Science Courses (Physics)**							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 20 minutes) or d) term paper (approx. 8 pages)					
	Additional Information		This module is designed for students studying at least one subject in the natural sciences.					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
11-MIND-Ph2-152-m01	**Teaching Science with Hands-on-Exhibits (Physics)**							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 20 minutes) or d) term paper (approx. 8 pages)					
	Additional Information		This module is designed for students studying at least one subject in the natural sciences.					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
11-AP-152-m01	**Astrophysics**							
	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-ENT-152-m01	**Principles of Energy Technologies**							
	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: 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-L-APD-152-m01	**Current Topics of Teaching Concepts in Physics**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		S (2) Module taught in: German or English					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) or d) term paper (approx. 8 pages) or e) talk (30 to 45 minutes) with discussion					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
11-L-WPD-152-m01	**Scientific Work in Teaching Concepts**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2) Module taught in: German or English					
	Method of assessment		talk (30 to 45 minutes)					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					

11-LX6-152-m01	**Current Topics in Physics**							
	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.					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
11-LCS6-152-m01	**Selected Topics of Physics**							
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + 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.					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					

Hausarbeit (thesis) (10 ECTS credits)
Preparation of a written Hausarbeit (thesis) in accordance with the provisions of Section 29 LPO I (examination regulations for teaching-degree programmes) is a prerequisite for teaching degree students to be admitted to the Erste Staatsprüfung (First State Examination). In accordance with the provisions of Section 29 LPO I, students studying for a teaching degree Mittelschule may write this thesis in the subject Didaktik einer Fächergruppe der Mittelschule (Didactics of a Group of Subjects of Mittelschule),

in the subject they selected as Unterrichtsfach (subject studied with a focus on the scientific discipline) or in the subject Erziehungswissenschaften (Educational Science). Pursuant to Section 29 Subsection 1 Sentence 2 LPO I, students may also choose to write an interdisciplinary thesis.

11-L-HA-MS-DF-152-m01	**Thesis in Physics Secondary General School**							
	ECTS	10	Duration		Method of grading	numerical grade	Modul level	undergraduate
	Courses		No courses assigned to module					
	Method of assessment		Hausarbeit (thesis) pursuant to Section 29 LPO I (examination regulations for teaching-degree programmes) (approx. 40 pages) Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for teaching-degree programmes)					
	Referred to in LPO I		§ 29					