Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Computer Science as Unterrichtsfach

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

Responsible: Faculty of Mathematics and Computer Science — Examination regulations version: 2015
Responsible: Institute of Computer Science — 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)):

08-Sep-2015 (2015-121)

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)						

Scientific Discipline (60 ECTS credits)								
Compulsory Courses (40 ECTS credits)								
General Compulsory Courses (30 ECTS credits)								
10-I-EinP-152-m01	**Introduction to Programming**							
	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). creditable for bonus						
	Referred to in LPO I	§ 49 I Nr. 1 b) § 69 I Nr. 1 b)						
10-I-DB-152-m01	**Databases**							
	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	§ 49 I Nr. 1 b) § 69 I Nr. 1 b)						
10-I-ST-152-m01	**Software Technology**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + 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). creditable for bonus						
	Referred to in LPO I	§ 49 I Nr. 1 b) § 69 I Nr. 1 b)						

10-I-SWP-RS-152-m01	**Practical course in software (German Realschule)**							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (6)						
	Method of assessment	practical project (Completion of a larger software project in groups (approx. 300 hours per person) and final presentation (approx. 10 minutes per group)						
	Modules successfully completed	10-I-ST and either 10-I-PP or 10-I-EPP						
	other prerequisites	In addition, the knowledge and skills acquired in module 10-I-ADS and/or 10-I-GADS are required. Prior attendance of these modules is therefore highly recommended.						
	Referred to in LPO I	§ 49 I Nr. 1 c)						
Theoretical Computer Science (10 ECTS credits)								
10-I-TIV-152-m01	**Theoretical Informatics**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4)						
	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).						
	Referred to in LPO I	§ 49 I Nr. 1 a) § 69 I Nr. 1 a)						
10-I-TIT-152-m01	**Tutorial Theoretical Informatics**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (2)						
	Method of assessment	a) completion of approx. 11 exercises with approx. 4 components each (50% to be completed correctly) or b) written examination (approx. 180 to 240 minutes) Method of assessment to be selected by the candidate.						
	Referred to in LPO I	§ 49 I Nr. 1 a) § 69 I Nr. 1 a)						

Compulsory Electives (20 ECTS credits)								
Algorithms and Data Structures (10 ECTS credits)								
10-I-ADS-152-m01	**Algorithms and data structures**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + 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). creditable for bonus					
	Referred to in LPO I		§ 49 I Nr. 1 a) § 69 I Nr. 1 a)					
10-I-GADS-152-m01	**Algorithms and Data Structures Level One Course**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (3)					
	Method of assessment		a) written examination (approx. 60 to 120 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of 2 candidates (approx. 15 minutes per candidate) creditable for bonus					
	Referred to in LPO I		§ 49 I Nr. 1 a)					
Programming Practical Courses (10 ECTS credits)								
10-I-PP-152-m01	**Practical Course in Programming**							
	ECTS	10	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (6)					
	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).					
	Referred to in LPO I		§ 49 I Nr. 1 c) § 69 I Nr. 1 d)					
10-I-EPP-152-m01	**Introductory Programming Course**							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (6)					
	Method of assessment		practical examination (programming exercises, approx. 240 hours) and 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).					
	Referred to in LPO I		§ 49 I Nr. 1 c)					

Teaching (12 ECTS credits)

Compulsory Courses (12 ECTS credits)

10-I-DDI1-152-m01	**Computer Science Education 1 (incl. Practical Course in the Application of Computer Science Systems form an Educational Point of View)**							
	ECTS	6	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2) + P (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). creditable for bonus					
	Referred to in LPO I		§ 49 I Nr. 2 § 69 I Nr. 2					
10-I-DDI2-RS-152-m01	**Computer Science Education 2 (incl. Seminar in Computer Science Education at the German Realschule)**							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2) + S (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). creditable for bonus					
	Referred to in LPO I		§ 49 I Nr. 2					

Intership in school (4 ECTS credits)

Students studying for a teaching degree Realschule must complete a practical training in didactics and teaching methodology (studienbegleitendes fachdidaktisches Praktikum) which refers to one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific discipline) pursuant to Section 34 Subsection 1 No. 4 LPO I (examination regulations for teaching-degree programmes). The obligatory accompanying tutorial is offered by the respective subject. The ECTS credits obtained are counted in the subject Erziehungswissenschaften pursuant to Section 10 Subsection 3 LASPO (general academic and examination regulations for teaching-degree programms).

10-I-SBFD-RS-152-m01	**Practical Training in Classroom Teaching in Computer Science Education including Theory (German Realschule)**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (0) + S (2)					
	Method of assessment		Written elaboration of teaching practice (15 to 20 pages) Contents and duration of placement as specified in Section 34 Subsection 1 Sentence 1 No. 4 LPO I (examination regulations for teaching-degree programmes); participation in mandatory teaching practice, completion of all set tasks as specified by placement school.					
	Referred to in LPO I		§ 34 I 1 Nr. 4					

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".

Computer Science
(Freier Bereich (general as well as subject-specific electives) -- subject specific)

10-I-REP-152-m01	**Exam Tutorial for the German Staatsexamen**							
	ECTS	4	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (2)					
	Method of assessment		One exercise per area covered in the state examination					
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 b)					
10-I-DS-152-m01	**Seminar Computer Science Education**							
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		written elaboration (approx. 20 pages) and presentation including discussion (approx. 45 to 60 minutes) on a topic from the field of computer science didactics Assessment offered: Only in the semester in which the course is offered					
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 f)					
10-I-DV-152-m01	**Advanced Topics of Computer Science Education**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) talk (approx. 30 minutes) or b) practical assignment (exercise) with examination talk (approx. 15 minutes) Assessment offered: Only in the semester in which the course is offered					
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 2 f), § 22 II Nr. 3 f)					
10-I-DRO-152-m01	**Robotics in Education (practical course)**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (2)					
	Method of assessment		practical assignment (supervision of a group of pupils) with examination talk (approx. 15 minutes) Assessment offered: Only in the semester in which the course is offered					
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 f)					

10-I-DPR-152-m01	**Practical Course on Computer Science Education**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (2)					
	Method of assessment		practical assignment with examination talk (approx. 15 minutes) Assessment offered: Only in the semester in which the course is offered					
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 f)					
10-I-DPP-152-m01	**Hands-on Computer Science**							
	ECTS	6	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (2) + S (2)					
	Method of assessment		practical assignment (preparing and delivering a school lab session) with examination talk (approx. 15 minutes) Assessment offered: Only in the semester in which the course is offered					
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 f)					
10-I-TUT1-152-m01	**Tutor activity 1**							
	ECTS	2	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		T (2)					
	Method of assessment		Wrap-up report on tutoring activities (5 to 10 pages)					
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 f)					
10-I-TUT2-152-m01	**Tutor activity 2**							
	ECTS	2	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		T (2)					
	Method of assessment		Wrap-up report on tutoring activities (5 to 10 pages)					
	Referred to in LPO I		§ 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 Realschule may write this thesis in one of the subjects 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.

10-I-HA-RS-152-m01	**Thesis Computer Science (Teaching Degree at the German Realschule)**							
	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) (250 to 300 hours) 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					