

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Computer Science as a Bachelor's with 1 major with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Institute of Computer Science

Examination regulations version: 2007

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:

ASPO2007

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

19-Aug-2008 (2008-25)

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 (100 ECTS credits)								
Computer Science (69 ECTS credits)								
10-I-IÜ-072-m01	Information transmission							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-RAL-072-m01	Digital computer systems							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-TI-072-m01	Theoretical informatics							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-ADS-072-m01	Algorithm and data structures							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-HWP-072-m01	Practical course in hardware							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		completion of project assignments including submission of logs (project results and project documentation as specified in assignment), final presentation (10 to 15 minutes per group)					
10-I-PP-072-m01	Practical course in programming							
	ECTS	9	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		completion of programming exercises (expenditure of time as specified) and final examination: written examination (60 to 90 minutes) or oral examination (one candidate each: 10 to 15 minutes, groups of 2: 20 minutes, groups of 3: 30 minutes)					
10-I-ST-072-m01	Software technology							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					

10-I-SWP-072-m01	Practical course in software							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	periodic presentations on project progress with regard to detailing problem specifications, the corresponding solution components (software) and the documentation of these; if project is completed in groups, proof of contributions made by the individual student required; software and project documentation as specified in assignment, final presentation (10 to 15 minutes per group)						
Basics of Mathematics (31 ECTS credits)								
10-I-LOG-072-m01	Logic for informatics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)						
10-M-INF1-072-m01	Mathematics 1 for students in Computer Science							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (90 minutes)						
10-M-INF2-072-m01	Mathematics 2 for students in Computer Science							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	Ü + V (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (90 minutes)						
10-M-INF3-072-m01	Mathematics 3 for students in Computer Science							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (90 minutes)						
Compulsory Electives (48 ECTS credits)								
Computer Science (38 ECTS credits)								
10-I-AR-072-m01	Automation and control technology							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (80 minutes)						
10-I-BS-072-m01	Operating systems							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)						

10-I-DB-072-m01	Data bases							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)					
10-I-GT-072-m01	Graphtheoretical concepts and algorithms							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-KT-072-m01	Theory of complexity							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-OOP-072-m01	Object oriented programming							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)					
10-I-RAK-072-m01	Computer architecture							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-RK-072-m01	Computer networks and communication systems							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					
10-I-WMS-072-m01	Knowledge management systems and data mining							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)					

07-I-BI-072-m01	Bioinformatics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (45 minutes)					
Subsidiary Subjects Application-oriented (10 ECTS credits)								
Students must achieve all ECTS credits that are required in the application-oriented subject in a single one of the specified application-oriented subjects (i. e. for example in Wirtschaftswissenschaft (Business Management and Economics)).								
Subsidiary Subjects Application-oriented Subject Linguistics (max. 10 ECTS credits)								
05-DTPH-SPR1-072-m01	Level One Module Linguistics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (90 minutes)					
05-DTPH-SPR2-072-m01	Level Two Module Linguistics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none">05-DTPH-SPR2-1-072: S (no information on SWS (weekly contact hours) and course language available)05-DTPH-SPR2-2-072: Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. Assessment in module component 05-DTPH-SPR2-1-072: Syntax and word formation 1 <ul style="list-style-type: none">3 ECTS, Method of grading: numerical gradewritten examination (90 minutes) Assessment in module component 05-DTPH-SPR2-2-072: Syntax and word formation 2 <ul style="list-style-type: none">2 ECTS, Method of grading: numerical gradewritten examination (90 minutes)					
Subsidiary Subjects Application-oriented Subject Business Management and Economics (max. 10 ECTS credits)								
12-BPL-G-072-m01	Supply, Production and Operations Management. An Introduction							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes)					
12-IntUR-G-072-m01	Managerial Accounting							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes)					

12-I&F-G-072-m01	Investment and Finance. An Introduction							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes)					
12-ExtUR-G-072-m01	Financial Accounting							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes)					
12-EBWL-G-072-m01	Introduction to Business Administration							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes)					
12-EWiinf-G-072-m01	Introduction to Business Informatics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (60 minutes)					
12-GP-G-072-m01	Business Processes							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes)					
	Participants and allocation of places		Number of places: 30. Bachelor's students of Wirtschaftsinformatik (Business Information Systems) (180 ECTS credits) will be given preferential consideration when it comes to admission to courses and assessment in the module component. Uniform regulations governing the restriction of the number of places are laid down in the FSB (subject-specific provisions) regarding Section 7 Subsection 4.					
12-FRBE-F-072-m01	Forward and Reverse Business Engineering							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes)					
	Participants and allocation of places		Number of places: 50. Bachelor's students of Wirtschaftsinformatik (Business Information Systems) (180 ECTS credits) will be given preferential consideration when it comes to admission to courses and assessment in the module component. Uniform regulations governing the restriction of the number of places are laid down in the FSB (subject-specific provisions) regarding Section 7 Subsection 4.					

Subsidiary Subjects Application-oriented Subject Mathematics (max. 10 ECTS credits)								
10-M-ODE-082-m01	Ordinary Differential Equations							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner						
	other prerequisites	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.						
10-M-NM1-072-m01	Numerical Mathematics 1							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	a) written examination (90 minutes; usually chosen) or b) oral examination of one candidate each (20 minutes) or c) oral examination in groups (groups of 2, 30 minutes)						
10-M-ST1-072-m01	Stochastics 1							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	a) written examination (90 minutes; usually chosen) or b) oral examination of one candidate each (20 minutes) or c) oral examination in groups (groups of 2, 30 minutes)						
10-M-COM-072-m01	Computeroriented Mathematics							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	project in the form of programming exercises (expenditure of time as specified at the beginning of the course)						

10-M-EDM-072-mo1	Introduction to Discrete Mathematics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner						
	other prerequisites	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.						
	Referred to in LPO I	§ 73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie						
10-M-ORS-072-mo1	Operations Research							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner						
	other prerequisites	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.						
	Referred to in LPO I	§ 73 (1) 5. Mathematik Angewandte Mathematik						
10-M-EZT-072-mo1	Introduction to Number Theory							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	a) written examination (90 minutes; usually chosen) or b) oral examination of one candidate each (20 minutes) or c) oral examination in groups (groups of 2, 30 minutes)						
Subsidiary Subjects Application-oriented Subject Physics (max. 10 ECTS credits)								
11-EFNF-072-mo1	Introduction to Physics for Students of Non-physics-related Minor Subjects							
	ECTS	7	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + V (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (approx. 120 minutes)						
	Participants and allocation of places	Only as part of pool of general key skills (ASQ): 10 places. Places will be allocated by lot.						

11-PFNF-072-m01	Practical Course Physics for Students of Non-physics-related Minor Subjects							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	a) oral test (approx. 15 minutes) during experiment and b) ungraded written examination (approx. 90 minutes)						
	Participants and allocation of places	Only as part of pool of general key skills (ASQ): 10 places. Places will be allocated by lot.						
Subsidiary Subjects Application-oriented Subject Geography (max. 10 ECTS credits)								
09-FERN-072-m01	Remote Sensing							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none">09-FERN-1-072: V + T (no information on SWS (weekly contact hours) and course language available)09-FERN-2-072: V + T (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. Assessment in module component 09-FERN-1-072: Introduction to Geographical Remote Sensing Introduction to Geographical Remote Sensing <ul style="list-style-type: none">5 ECTS, Method of grading: numerical gradewritten examination (45 minutes) Assessment in module component 09-FERN-2-072: Application of Remote Sensing in Geography Application of Remote Sensing in Geography <ul style="list-style-type: none">5 ECTS, Method of grading: numerical gradewritten examination (45 minutes)						
Subsidiary Subjects Application-oriented Subject Medicine (max. 10 ECTS credits)								
03-M-MEI-072-m01	Medical decision making							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü + V (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	written examination (60 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)						
Thesis (12 ECTS credits)								
10-I-BA-072-m01	Bachelor-Thesis							
	ECTS	12	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	no courses assigned						
	Method of assessment	written thesis Language of assessment: German or English						
	other prerequisites	Registration for assessment: as specified.						

Subject-specific Key Skills (12 ECTS credits)								
10-I-BK-072-m01	Bachelor-Kolloquium							
	ECTS	2	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		K (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		oral presentation (talk maximum 30 minutes, approx. 30 to 40 minutes total) with subsequent discussion of Bachelor's thesis and adjacent fields					
10-I-SEM1-072-m01	Seminar 1							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		S (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written elaboration and oral presentation with subsequent discussion on a topic from the field of computer science (type and length to be specified by the lecturer at the beginning of the course) Language of assessment: German, English if required by the examination candidate					