

These examination regulations have been worded carefully to be up to date; however, errors cannot be completely excluded. The official German text available from L1 – Legal Affairs and Academic Quality Management is the version that is legally binding.

Note: Students who started their studies before the latest amendment came into effect are requested to also comply with previous amendments and the respective transitory provisions.

**Degree Program and Examination Regulations for the
Bachelor’s Degree Program in
Information and Communication Technology and
for the Master’s Degree Program in Information and Com-
munication Technology at the Faculty of Engineering of
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)
– FPOluK/ICT –
Dated September 21, 2007**

amended by statutes of
July 25, 2008
May 6, 2010
April 27, 2011
August 15, 2011
February 3, 2012
July 30, 2012
July 31, 2012 (joint amendment statute)
October 07, 2013
February 20, 2015
December 01, 2015
January 19, 2018
March 06, 2019
June 29, 2022

Based on Section 13 (1)(2), Section 43 (4) and (5), Section 58 (1) and Section 61 (2)(1) of the Bavarian Higher Education Act (Bayerisches Hochschulgesetz, **BayHSchG**), FAU enacts the following degree program and examination regulations:

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Part I: General Provisions

Section 35 Scope

The degree program and examination regulations for the consecutive Bachelor's degree program in Information and Communication Technology (IuK) and the Master's degree program in Information and Communication Technology (ICT) complement the currently valid General Examination Regulations for Bachelor's and Master's degree programs at the Faculty of Engineering at FAU – **ABMPO/TechFak**.

Section 36 Bachelor's Degree Program, Standard Duration of Studies, Teaching and Examination Language

(1) The Bachelor's degree program in Information and Communication Technology is made up of modules worth a total of 180 ECTS credits pursuant to **Appendix 1**.

(2) The standard duration of studies shall be six semesters.

(3) ¹Pursuant to Section 3 (6) sentences 3 and 4 **ABMPO/TechFak**, the language of written examinations shall correspond to the teaching language. ²The provision in sentence 1 may be waived for oral examinations in consultation with the examinee. ³This shall not affect the rest of Section 3 (6) **ABMPO/TechFak**.

Section 37 Master's Degree Program, Part-time Study, Standard Duration of Studies, Start of Degree Program, Teaching and Examination Language

(1) ¹The Master's degree program in Information and Communication Technology builds on the contents of the Bachelor's degree program in Information and Communication Technology. ²It shall consist of modules worth 120 ECTS credits in total pursuant to **Appendix 2** or **3** and shall include a Master's thesis with a six-month period for thesis work, including a presentation.

(2) ¹The Master's degree program in Information and Communication Technology can be completed as a full-time or as a part-time degree program. ²The Master's degree program in Information and Communication Technology can be started in either the summer or the winter semester.

(3) ¹Notwithstanding Section 4 (5)(1) **ABMPO/TechFak**, the teaching and examination language in the Master's degree program in Information and Communication Technology is English. ²Individual courses and examinations may be conducted in German. ³The Master's thesis shall be written in English; the Examinations Committee shall decide on any exceptions at the student's request. ⁴The degree certificate and final academic record shall be issued in German and English.

Part II: Special Provisions

1. Bachelor's Examination

Section 38 Structure of the Bachelor's Degree Program

(1) ¹The Bachelor's degree program consists of compulsory, compulsory elective and elective modules. The distribution across the semesters, the type and duration of the examinations and the required number of ECTS credits are stipulated in **Appendix 1**.

(2) Modules no. 1 to 22 in **Appendix 1** are compulsory.

(3) ¹Modules nos. 23, 26 and 27 in **Appendix 1** (compulsory elective modules, seminar and laboratory course) are modules which must be chosen from catalogs drawn up by the IuK Degree Program Committee and published on the IuK website. ²Upon request, the chairperson of the Degree Program Committee can allow other modules. ³Further provisions are stipulated in Sections 38a and 38b.

(4) ¹Module no. 24 in **Appendix 1** is a module worth 5 ECTS credits which must be chosen from the modules offered by the Department of Electrical, Electronic and Communication Engineering and the Department of Computer Science. ²Students may also choose two modules worth 2.5 ECTS credits each. ³The type and scope of the lectures and seminars and the examination are dependent on the competencies for the chosen module according to the relevant **degree program and examination regulations** and the module handbook.

(5) ¹Elective modules pursuant to no. 25 in **Appendix 1** are modules worth a total of 10 ECTS credits which must be chosen from the modules offered at FAU outside the Faculty of Engineering. ²The type and scope of the lectures and seminars and the examination are dependent on the competencies for the chosen module according to

the relevant **degree program and examination regulations** and the module handbook.

(6) In addition, the Bachelor's degree program includes

- the Bachelor's thesis module including the Bachelor's thesis itself and a presentation pursuant to no. 28 **Appendix 1**
- and an industrial internship lasting at least eight weeks pursuant to no. 29 **Appendix 1**. Further provisions, regarding in particular the requirements for the internship, are stipulated in the Guidelines for Internships for Students of Information and Communication Technology at FAU (internship guidelines) in the currently valid version.

(7) Notwithstanding Section 28 (2)(2) **ABMPO/TechFak**, failed attempts in elective modules shall not be counted when changing to alternative modules.

Section 38a Compulsory Elective Modules

(1) ¹The learning outcome for the compulsory elective modules from the module catalog for the degree program in Information and Communication Technology (no. 23 **Appendix 1**) worth a total of 10 ECTS credits is to allow students to specialize in certain selected skills. ²The second learning outcome has a research focus, with students learning subject-related methods of research and exploring their subject in more depth. ³Thirdly, the element of choice allows students to tailor their profile in view of their career plans.

(2) ¹ The type and scope of the examination are dependent on the skills for the relevant module according to paragraph (1) and the module handbook. ²Possible examination achievements for each module are: written examination (60, 90 or 120 min) or oral examination (30 min). ³The module handbook is published before the beginning of the semester in accordance with local practice.

(3) ¹Compulsory elective modules amounting to 5 ECTS credits usually consist of a lecture (2 SWS) and a tutorial (2 SWS) or a lecture (3 SWS) and a tutorial (1 SWS). ²Any exceptions are detailed in the module handbook.

Section 38b Seminar Module and Laboratory Course Module

(1) ¹The learning outcome of the seminar module and the lab course module (no. 26 and 27 in **Appendix 1**) is to allow students to gather, analyze and interpret information relevant to their subject. ²A second learning outcome is aimed at promoting personal and social skills through preparing, reporting on and presenting a topic relating to the subject for a specialist audience at a Bachelor's level and in a manner tailored to suit the target group, as well as working under supervision in a group to develop and test subject-related applications and possibilities for implementation with respect to the chosen subject. ³Thirdly, the element of choice allows students to tailor their profile in view of their career plans.

(2) ¹The available modules are listed in the relevant catalog (see Section 38(3)). ²Further information about the type and scope of lectures and seminars and the examination is available in **Appendix 1** and the module handbook.

Section 39 Credits in Bachelor's Degree Programs

[revoked]

Section 40 Grundlagen- und Orientierungsprüfung (GOP)

(1) The **GOP** includes modules marked as **GOP** in the last column in **Appendix 1**.

(2) ¹The **GOP** is deemed to be passed when the examinations in modules no.1 and 2 are passed pursuant to **Appendix 1** and a total of at least 12.5 ECTS credits has been achieved from modules nos. 5, 6, 7, 8, 14, and 16 pursuant to **Appendix 1**. ²A module pursuant to sentence 1 shall be deemed to have been chosen as part of the Grundlagen- und Orientierungsprüfung (**GOP**) at the latest once the student has passed the first resit examination.

Section 41 Requirements for Assignment of Bachelor's Thesis

Admission to the Bachelor's thesis shall be governed by Section 27 (3)(2) **ABMPO/TechFak**.

Section 42 Bachelor's Thesis

(1) ¹The Bachelor's thesis enables students to learn to solve problems independently in the field of information and communications technology. ²All full-time university lecturers employed at the Department of Electrical, Electronic and Communication Engineering and at the Department of Computer Science shall be entitled to assign Bachelor's theses. ³Requirements for the Bachelor's thesis shall be such that it can be completed with a workload of 300 hours.

(2) 10 ECTS credits are awarded for the Bachelor's thesis with an additional 2.5 ECTS credits awarded for an ungraded presentation in the same module.

Section 43 Evaluation of Achievements for the Bachelor's Degree Program

(1) The Bachelor's degree program shall have been completed successfully if proof of passing all modules stipulated in **Appendix 1** has been submitted.

(2) ¹The final grade shall be calculated using all graded modules set forth in the **Appendix** including the Bachelor's thesis, weighted with a factor corresponding to the ECTS credits awarded for the graded parts of the module. ²An interim grade shall be given for each module area in accordance with the ECTS weighting of the individual modules.

2. Master's Examination

Section 44 Qualification for a Master's Degree, Certificates and Admission Requirements

(1) ¹A subject-specific degree within the meaning of Section 29 (1)(1) **ABMPO/TechFak** is a Bachelor's degree or a Diplom degree in the subject information and communication technology. ²Bachelor's degrees in electrical engineering, electronics and information technology in particular shall be recognized as subject-related degrees within the meaning of Section 29 (1)(1) **ABMPO/TechFak**.

(2) ¹Within the meaning of subsection (2)(4)(3) of the **Appendix** to **ABMPO/TechFak**, additional proof of English language skills equivalent to at least Level B2 of the Common European Framework of Reference (CEFR) shall be provided by submitting either relevant school reports or certificates issued by a language school or university. ²Proof

of language skills can in particular be provided by submitting a school leaving certificate or a certificate issued by the school providing evidence that English lessons up to a level equivalent to B2 CEFR have been taken at school or evidence of having successfully completed the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) at level B2 or above (please refer to the table of equivalence published by the FAU Language Center). ³Proof of language proficiency does not need to be submitted if the applicant acquired their university entrance qualification or relevant undergraduate degree in English.

(3) Candidates shall be deemed to qualify for the Master's degree program in Information and Communication Technology within the meaning of (5)(2)(2) **Appendix AB-MPO/TechFak** if the grade for at least two of the following compulsory subject-related or degree program-specific modules in the Bachelor's degree program in Information and Communication Technology or equivalent modules at another university were passed with a grade of 2.7 or above:

- module Stochastic processes
- module Algorithms for continuous systems
- module Computer communications
- module Foundations of software engineering
- module Signals and systems
- module Signals and systems II
- module Digital signal processing
- module Communication systems.

(4) In the oral examination according to paragraph (5)(3) et seq. **Appendix 1 AB-MPO/TechFak**, applicants shall be evaluated according to the following criteria:

1. Solid knowledge of signal processing, systems theory, circuit technology, telecommunications, computer architecture, programming and familiarity with mathematical discourse (weighting 50 %),
2. Good knowledge of a field of specialization corresponding to an eligible specialization in the Master's degree program; the applicant shall choose the specialization to be discussed during the interview (weighting 35%),
3. A positive prognosis demonstrated by the applicant's academic progress; discussion of results from the applicant's previous degree (based in particular on the transcript of records) (weighting 15 percent).

Section 45 Scope and Structure of the Master's Degree Program

(1) ¹The degree program consists of compulsory, compulsory elective and elective modules. ²Students are generally also required to complete a research project worth 5 ECTS credits at an ICT Chair or a company which has a cooperation agreement with an ICT Chair. ³Instead of a research project within the meaning of sentence 2, the chairperson of the Degree Program Committee may also approve other ungraded elective modules from the course catalog of the Faculty of Engineering worth 5 ECTS credits. ⁴The distribution of the modules pursuant to sentences 1 and 3 across the semesters, the type and duration of the examinations and the required number of ECTS credits are set forth in **Appendix 2** and **3**.

(2) ¹Each student chooses their own specialization in order to establish a subject-specific profile. The specializations available are

- Embedded Systems,
- Networks and Digital Communication,

- Media Processing Systems.

³For each specialization there is a catalog of compulsory modules and compulsory elective modules pursuant to **Appendix 2** and **3** and Section 45a, which is drawn up by the Examinations Committee and published on the ICT website. ⁴Students choose their specialization when registering for the first examination.

(3) ¹The modules in module group 1 in **Appendix 2** and **3** are compulsory modules which are described in the catalog of specializations pursuant to (2)(3). ²In the event that a module from the catalog of compulsory modules has already been successfully completed as part of the Bachelor's degree program, an alternative module shall be chosen from the catalog of compulsory elective modules pursuant to Sections 45a and 45b in order to ensure that the student will acquire more advanced knowledge and skills in the subject as stated in the module description with reference to the qualification goals of the Master's degree program.

(4) ¹The modules in module group 2 in **Appendix 2** and **3** are compulsory elective modules worth a total of 20 ECTS credits, which are described in Sections 45a and 45b and in the catalog of specializations pursuant to (2)(3). ²Modules worth at least 10 ECTS credits have to be chosen from the modules offered by the Department of Electrical, Electronic and Communication Engineering and the Department of Computer Science.

(5) The modules in module group 3 in **Appendix 2** or **3** are elective modules worth 20 ECTS credits which must be chosen from the modules offered by the Department of Electrical, Electronic and Communication Engineering and the Department of Computer Science.

(6) ¹In module group 4 in **Appendix 2** or **3**, one elective module has to be chosen from the modules offered by the Faculty of Engineering or the Faculty of Sciences worth 10 ECTS credits. ²Students may also choose four modules worth 2.5 ECTS credits each.

(7) Modules in module group 5 in **Appendix 2** or **3** are elective modules worth 10 ECTS, which must be chosen from all the modules offered by FAU.

(8) The type and scope of the lectures and seminars and the examinations for the modules to be completed pursuant to (5) to (7) are dependent on the skills for the chosen module according to the relevant **degree program and examination regulations** and the module handbook.

Section 45a Learning outcomes of specializations

(1) ¹The overriding learning outcome of the specializations which can be chosen pursuant to Section 45 (2) (module group 1) is to allow students to gain a more advanced knowledge of selected specialist areas. ²This should allow them to acquire skills of relevance to research.

(2) In the specialization 'Embedded systems', students acquire skills in the areas of application designing embedded systems and associated design methodology.

(3) In the specialization 'Networks and digital communications', students acquire skills in the areas of application of wired and wireless digital data transmission as well as architectures and communication network protocols located on higher layers.

(4) In the specialization 'Media processing systems', students acquire skills in the area of application of designing media processing systems.

Section 45b Compulsory Elective Modules

(1) ¹The first learning outcome of the compulsory elective module area according to the specialization from the catalog (module group 2) worth a total of 20 ECTS credits is to allow students to gain a more in-depth knowledge of their specialization pursuant to Section 45a. ²The second learning outcome has a research focus, with students learning subject-related methods of research and exploring their subject in more depth. ³Thirdly, the element of choice allows students to tailor their profile in view of their career plans. ⁴Students can choose from a selection of modules worth 2.5 ECTS credits, 5 ECTS credits and 7.5 ECTS credits respectively.

(2) ¹ The type and scope of the examination are dependent on the skills for the relevant module according to paragraph (1) and the module handbook. ²Possible examination achievements for each module are: written examination (60, 90 or 120 min) or oral examination (30 min). ³The module handbook is published before the beginning of the semester in accordance with local practice.

(3) ¹Compulsory elective modules amounting to 5 ECTS credits usually consist of a lecture (2 SWS) and a tutorial (2 SWS) or a lecture (3 SWS) and a tutorial (1 SWS). ²Any exceptions are detailed in the module handbook.

Section 45c Lab Course Module and Seminar Module

Section 38b shall apply accordingly.

Section 45d Research Project

¹The learning outcome of the research project module is to allow students to learn how to put academic work to practical use in research. ²The research work can be either experimental, theoretical or constructive in nature. ³Several areas of specialization can be combined.

Section 46 Credits in Master's Degree Program

(1) ¹Students must have chosen their specialization pursuant to Section 45 (2) in conjunction with Section 45a at the latest when they are admitted to the first examination. ²Unless stipulated otherwise in Sections 45a to 45d, the type and duration of examinations in the Master's degree program are stated in **Appendix 2** or **3**.

(2) Notwithstanding Section 28 (2)(2) **ABMPO/TechFak**, failed attempts in elective modules shall not be counted when changing to alternative modules.

Section 47 Requirements for Assignment of Master's Thesis

¹Students must be able to prove that they have passed modules pursuant to Section 45 (1) worth a minimum of 80 ECTS credits to qualify for admission to the Master's thesis. ²It is recommended that students begin work on the Master's thesis no earlier than at the beginning of the fourth semester.

Section 48 Master's Thesis

(1) ¹The Master's thesis enables students to prove that they can solve problems independently in the field of information and communications technology. ²All university lecturers employed at the Department of Electrical, Electronic and Communication Engineering and at the Department of Computer Science as their main occupation shall be entitled to assign Master's theses.

(2) 30 ECTS credits shall be awarded for the Master's thesis including presentation.

Section 49 Evaluation of Achievements for the Master's Degree Program

(1) The Master's degree program shall have been completed successfully if proof of passing all modules stipulated in **Appendix 2** or **Appendix 3** has been submitted.

(2) ¹The final grade shall be calculated using all graded modules set forth in **Appendix 2** or **3** including the Master's thesis, weighted with a factor corresponding to the ECTS credits awarded for the graded parts of the module. ²An interim grade shall be given for each module area in accordance with the ECTS weighting of the individual modules.

Part III: Final Provisions

Section 50 Legal Validity

(1) ¹These degree program and examination regulations shall come into effect on October 1, 2007. ²They shall be applied to students who start the Bachelor's or Master's degree program in Information and Communication Technology from the winter semester 2010/2011 onwards.

(2) ¹The eleventh amendment statute shall come into effect on the day after its publication. ²They shall apply to all students starting a degree program from the summer semester 2018 onwards.

(3) ¹The twelfth amendment statute shall come into effect on the day after its publication. ²They shall apply to all students starting a degree program from the summer semester 2019 onwards.

(4) ¹The 13th amendment statute shall come into effect on the day after its publication. ²It shall apply to all students starting a degree program from winter semester 2022/2023 onwards. ³Examinations according to the previously valid degree program examination regulations shall be offered for the last time in winter semester 2025/2026. ⁴From the date stated in sentence 3, those students who are affected by the examination regulations becoming invalid shall take their examinations in accordance with the currently valid version of the degree program and examination regulations. ⁵Notwithstanding sentences 3 and 4, the lectures and seminars for the discontinued module Algorithms and Data Structures were held for the last time in winter semester 2021/22 and the related course achievement can be taken for the last time in winter semester 2023/24; if a resit of the course achievement is necessary, the course achievement can be obtained by taking the course achievement in the module Introduction to Algorithms. ⁶Notwithstanding sentence 3, examinations for the module Foundations of Software Engineering will be held for the last time during summer semester 2023; if a resit

of the examination is necessary, the resit can be taken by taking the examination for the module Introduction to Software Engineering.

Appendix 1: Structure of the Bachelor's Degree Program

No.	Modules	SWS (semester hours)				ECTS credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination	Pre-liminary Exami-	
		L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	5th sem.	6th sem.			
1	Mathematics for luK 1 ¹⁾	4	2			7.5	7.5						EA (WE90) + CA (TA)	•	
2	Mathematics for luK 2 ¹⁾	5	3			10		10					EA (WE120) + CA (TA)	•	
3	Mathematics for luK 3 ¹⁾	2	2			5			5				EA (WE60)		
4	Stochastic processes	2	2			5				5			EA (WE 90)		
5	Introduction to information and communication	4	2			7.5	7,5						EA (WE120)	•	
6	Foundations of programming	2	2			5	5						(see FPO INF)	•	
7	Introduction to algorithms	4	2			7.5		7,5					(see FPO INF)	•	
8	Foundations of computer architecture and computer organization	2	2			5				5			EA (WE 90)	•	
9	System programming	4	2	2		10		5	5				EA (WE120)		
10	Discrete event systems	2	2			5			5				EA (WE 90)		
11	Algorithms for continuous systems	4	2			7.5				7,5			EA (WE90) + CA (TA)		
12	Computer communications	2	2			5				5			EA (WE90) + CA (TA)		
13	Introduction to software engineering	4	2			5					5		(see FPO INF)		
14	Digital technology	2	2			5	5						EA (WE 90)	•	
15	Laboratory: luK				3	2.5	2.5						CA (LA)		
16	Electronics and circuit technology	4	2			7.5		7,5					EA (WE120)	•	
17	Laboratory: Circuit technology				3	2.5			2.5				CA (LA)		
18	Signals and systems I	2	2			5			5				EA (WE 90)		
29	Signals and systems II	2	2			5				5			EA (WE 90)		
20	Digital signal processing	2	2			5					5		EA (WE 90)		
21	Communication systems	4	2			7.5					7.5		EA (WE120)		
22	Digital transmission	3	1			5						5	EA (WE 90)		
23	Compulsory elective modules from the catalog for luK pursuant to Section 38a ²⁾ see section 38a (3)					10					10		see Section 38a (2) ³⁾		
24	Elective modules EEI and INF	see Section 38 (4)				5						5		see Section 38 4 ^{3) 4)}	
25	Elective modules (not Faculty of Engineering)	see Section 38 (5)				10				5		5		see Section 38 (5) ^{3) 4)}	
26	Seminar pursuant to Section 38b				2	2.5						2.5	EA (SA)		
27	Laboratory course or research project pursuant				2	2.5					2.5		CA (LA)		
28	Bachelor's thesis					12.5						12.5	Bachelor's thesis with		
29	Internship (8 weeks) pursuant to internship guidelines					7.5			7.5				CA (LA)		
Total semester hours (at least) and ETCS credits		58	38	11	4		27.5	30	30	32.5	30	30			
		111				180									

- 1) The equivalence of the mathematics modules in the degree programs of the Faculty of Engineering shall be announced according to local practice.
- 2) The catalog of branches of study will be published on the ICT website according to local practice before the start of the semester.
- 3) The type and scope of the examination depend on the specific manner in which the chosen module is taught in the respective semester and are stipulated in the module handbook.
- 4) See module handbook; notwithstanding Section 28 (2)(2) **ABMPO/TechFak** failed attempts will not be counted and in the event of a failure to pass there is no obligation to repeat the failed examination within the legally stipulated period pursuant to Section 28 (1)(5) **ABMPO/TechFak**.

Key:

L = lecture

T = tutorial

Lab = laboratory course

SWS = semester hours

ECTS = credits from European Credit Transfer System

CA = course achievement

EA = examination achievement

WE = written examination

LA = laboratory achievement pursuant to Section 6 (3) **AMBPO/TechFak**

SA = seminar achievement pursuant to Section 6 (3) **ABMPO/TechFak**

TA = tutorial achievement pursuant to Section 6 (3) **ABMPO/TechFak**

BA = Bachelor's thesis

Appendix 2: Structure of the Full-time Master's Degree Program

Appendix 2a: Specialization Embedded Systems

No.	Modules	SWS (semester hours)				ECTS credits	Distribution of workload per semester in ECTS credits ¹⁾				Type and scope of the examination
							1	2.	3.	4.	
1	Compulsory modules ²⁾					20					
1a	Embedded systems	see FPO Computer Science				5	5				EA see FPO Computer Science
1b	Hardware-Software-Co-Design	2	2			5		5			EA (see FPO INF)
1c	Communication electronics	see FPO EEI				5		5			EA (see FPO EEI)
1d	Design of Integrated Circuits I	see FPO EEI				5	5				EA (see FPO EEI)
2	Compulsory elective modules from the catalog according to specialization pursuant to Section 45b ^{2) 3)}	see Section 45b (3)				20	5	5	10		EA: see Section 45b(2) ⁴⁾
3	Elective modules from EEI and Computer Science pursuant to Section 45 (5) ²⁾	see Section 45 (5)				20	5	5	10		EA pursuant to Section 45 (5) ^{4) 5)}
4	Elective modules from the Faculty of Engineering or Faculty of Sciences pursuant to Section 45 (6) ²⁾	see Section 45 (6)				10	5	5			EA pursuant to Section 45 (6) ^{4) 5)}
5	Elective modules from the university module catalog pursuant to Section 45 (7) ²⁾	see Section 45 (7)				10	5	5			EA pursuant to Section 45 (7) ^{4) 5)}
6	Laboratory course pursuant to Section 45c			3		2.5			2.5		EA (SA)
7	Seminar pursuant to Section 45c				2	2.5			2.5		CA (LA)
8	Master's thesis					30				30	Master's thesis with presentation
9	Research project pursuant to Section 45d			4		5			5		CA (EA) ⁴⁾
Total semester hours (at least) and ECTS credits		2	2	7	2		30	30	30	30	

¹⁾ The distribution of the workload refers to students starting in the winter semester. For students starting in the summer semester, the compulsory modules are offered in the other semester respectively.

²⁾ Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination. The same shall also apply to another previously completed elective or compulsory elective module in this degree program. Section 45 (3)(2) shall apply in this case.

³⁾ The specialization catalog is published according to local practice on the ICT website before the semester starts.

⁴⁾ The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details.

⁵⁾ See module handbook; notwithstanding Section 28 (2)(2) **ABMPO/TechFak** failed attempts will not be counted and in the event of a failure to pass there is no obligation to repeat the failed examination within the legally stipulated period pursuant to Section 28 (1)(5) **ABMPO/TechFak**.

Key:

CA = course achievement

EA = examination achievement

LA = laboratory achievement pursuant to Section 6 (3) **AMBPO/TechFak**

SA = seminar achievement pursuant to Section 6 (3) **ABMPO/TechFak**

WE = written examination

MA = Master's thesis

Appendix 2b: Specialization Networks and Digital Communication

No.	Modules	SWS (semester hours)				ECTS credits	Workload per semester in ECTS credits ¹				Type and scope of the examination
		1.	2.	3.	4.		1.	2.	3.	4.	
1	Compulsory modules ²⁾					20					
1a	Communication Systems	2	2			5	5				EA (WE 90) or (o30) 4) + CA (TA) ⁴⁾
1b	Quality of Service of Communication Systems	2	2			5		5			EA (WE 90) or (o30) ⁴⁾
1c	Information theory and coding	see FPO EEI				5		5			EA (see FPO EEI)
1d	Mobile Communications	3	1			5		5			EA (WE 90)
2	Compulsory elective modules from the catalog according to specialization pursuant to Section 45b ^{2) 3)}	see Section 45b (3)				20	5	5	10		EA: see Section 45b(2) ⁴⁾
3	Elective modules from EEI and Computer Science pursuant to Section 45 (5) ²⁾	see Section 45 (5)				20	5	5	10		EA pursuant to Section 45 (5) ^{4) 5)}
4	Elective modules from the Faculty of Engineering or Faculty of Sciences pursuant to Section 45 (6) ²⁾	see Section 45 (6)				10	10				EA pursuant to Section 45 (6) ^{4) 5)}
5	Elective modules from the university module catalog pursuant to Section 45 (7) ²⁾	see Section 45 (7)				10	5	5			EA pursuant to Section 45 (7) ^{4) 5)}
6	Laboratory course pursuant to Section 45c			3		2.5			2.5		EA (SA)
7	Seminar pursuant to Section 45c				2	2.5			2.5		CA (LA)
8	Master's thesis					30				30	Master's thesis with presentation
9	Research project pursuant to Section 45d			4		5			5		CA (EA) ⁴⁾
		7	5	7	2		30	30	30	30	
Total semester hours (at least) and ECTS credits		21				120					

¹⁾ The distribution of the workload refers to students starting in the winter semester. For students starting in the summer semester, the compulsory modules are offered in the other semester respectively.

²⁾ Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination. The same shall also apply to another previously completed elective or compulsory elective module in this degree program. Section 45 (3)(2) shall apply in this case.

³⁾ The specialization catalog is published according to local practice on the ICT website before the semester starts.

⁴⁾ The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details.

⁵⁾ See module handbook; notwithstanding Section 28 (2)(2) **ABMPO/TechFak** failed attempts will not be counted and in the event of a failure to pass there is no obligation to repeat the failed examination within the legally stipulated period pursuant to Section 28 (1)(5) **ABMPO/TechFak**.

Key:

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WE = written examination

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MA = Master's thesis

Appendix 2c: Specialization Media Processing Systems

No.	Modules	SWS (semester hours)				ECTS credits	Workload per semester in ECTS credits ¹				Type and scope of the examination	
							1	2	3	4		
1	Compulsory modules ²⁾					20						
1a	Image and video compression	see FPO CME				5		5			EA (see FPO CME)	
1b	Statistical signal processing	see FPO CME				5	5				EA (see FPO CME)	
1c	Communication Systems	2	2			5	5				EA (WE 90) or (o30) + CA (TA) ⁴⁾	
1d	Pattern recognition	3	1			5	5				EA (see FPO INF)	
2	Compulsory elective modules from the catalog according to specialization pursuant to Section 45b ^{2) 3)}	see Section 45b (3)				20	5	5	10		EA: see Section 45b(2) ⁴⁾	
3	Elective modules from EEI and Computer Science pursuant to Section 45 (5) ²⁾	see Section 45 (5)				20		10	10		EA pursuant to Section 45 (5) ^{4) 5)}	
4	Elective modules from the Faculty of Engineering or Faculty of Sciences pursuant to Section 45 (6) ²⁾	see Section 45 (6)				10	5	5			EA pursuant to Section 45 (6) ^{4) 5)}	
5	Elective modules from the university module catalog pursuant to Section 45 (7) ²⁾	see Section 45 (7)				10	5	5			EA pursuant to Section 45 (7) ^{4) 5)}	
6	Laboratory course or research project pursuant to Section 45c			3		2.5			2.5		EA (SA)	
7	Seminar pursuant to Section 45c				2	2.5			2.5		CA (LA)	
8	Master's thesis					30				30	Master's thesis with presentation	
9	Research project pursuant to Section 45d			4		5			5		CA (EA) ⁴⁾	
Total semester hours (at least) and ECTS credits		5	3	7	2	17	120	30	30	30	30	

¹⁾ The distribution of the workload refers to students starting in the winter semester. For students starting in the summer semester, the compulsory modules are offered in the other semester respectively.

²⁾ Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination. The same shall also apply to another previously completed elective or compulsory elective module in this degree program. Section 45 (3)(2) shall apply in this case.

³⁾ The specialization catalog is published according to local practice on the ICT website before the semester starts.

⁴⁾ The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details.

⁵⁾ See module handbook; notwithstanding Section 28 (2)(2) **ABMPO/TechFak** failed attempts will not be counted and in the event of a failure to pass there is no obligation to repeat the failed examination within the legally stipulated period pursuant to Section 28 (1)(5) **ABMPO/TechFak**.

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Appendix 3: Structure of the Part-time Master's Degree Program

Appendix 3a: Specialization Embedded Systems

No.	Modules	SWS (semester hours)				ECTS credits	Distribution of workload per semester in in ECTS credits ¹								Type and scope of the examination		
		L	T	P	S		1.	2	3	4.	5.	6th h	7.	8.			
1	Compulsory modules ²⁾					20											
1a	Embedded systems	See FPO Computer Science				5	5										EA see FPO Computer Science
1b	Hardware/software co-design	2	2			5		5									EA (see FPO INF)
1c	Communication electronics	see FPO EEI				5				5							EA (see FPO EEI)
1d	Design of integrated circuits I	see FPO EEI				5			5								EA (see FPO EEI)
2	Compulsory elective modules from the catalog according to specialization pursuant to Section 45b ^{2) 3)}	see Section 45b (3)				20	5	5		5	5						EA: see Section 45b(2) ⁴⁾
3	Elective modules from EEI and Computer Science pursuant to Section 45 (5) ²⁾	see Section 45 (5)				20		5		5	5	5					EA pursuant to Section 45 (5) ^{4) 5)}
4	Elective modules from the Faculty of Engineering or Faculty of Sciences pursuant to Section 45 (6) ²⁾	see Section 45 (6)				10	5		5								EA pursuant to Section 45 (6) ^{4) 5)}
5	Elective modules from the university module catalog pursuant to Section 45 (7) ²⁾	see Section 45 (7)				10			5		5						EA pursuant to Section 45 (7) ^{4) 5)}
6	Laboratory course or research project pursuant to Section 45c			3		2.5						2.5					EA (SA)
7	Seminar pursuant to Section 45c				2	2.5						2.5					CA (LA)
8	Master's thesis					30								15	15		Master's thesis with presentation
9	Research project pursuant to Section 45d			4		5						5					CA (EA) ⁴⁾
		2	2	7	2		15	15	15	15	15	15	15	15	15		
	Total semester hours (at least) and ECTS credits	13				120											

¹⁾ The distribution of the workload refers to students starting in the winter semester. For students starting in the summer semester, the compulsory modules are offered in the other semester respectively.

²⁾ Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination. The same shall also apply to another previously completed elective or compulsory elective module in this degree program. Section 45 (3)(2) shall apply in this case.

³⁾ The specialization catalog is published according to local practice on the ICT website before the semester starts.

⁴⁾ The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details.

5) See module handbook; notwithstanding Section 28 (2)(2) **ABMPO/TechFak** failed attempts will not be counted and in the event of a failure to pass there is no obligation to repeat the failed examination within the legally stipulated period pursuant to Section 28 (1)(5) **ABMPO/TechFak**.

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Appendix 3b: Specialization Networks and Digital Communication

No.	Modules	SWS (semester hours)				ECTS credits	Distribution of workload per semester in ECTS credits ¹								Type and scope of the examination		
		L	T	P	S		1st	2nd	3rd	4th	5th	6th	7th	8th			
1	Compulsory modules ²⁾					20											
1a	Communication systems	2	2			5	5										EA (WE 90) or (o30) + CA (TA) ⁴⁾
1b	Quality of service of communication systems	2	2			5		5									EA (WE 90) or (o30) ⁴⁾
1c	Information theory and coding	see FPO EEI				5				5							EA (see FPO EEI)
1d	Mobile communications	3	1			5		5									EA (WE 90)
2	Compulsory elective modules from the catalog according to specialization pursuant to Section 45b ^{2) 3)}	see Section 45b (3)				20	5		5	5	5						EA: see Section 45b(2) ⁴⁾
3	Elective modules from EEI and Computer Science pursuant to Section 45 (5) ²⁾	see Section 45 (5)				20		5		5	5	5					EA pursuant to Section 45 (5) ^{4) 5)}
4	Elective modules from the Faculty of Engineering or Faculty of Sciences pursuant to Section 45 (6) ²⁾	see Section 45 (6)				10	5		5								EA pursuant to Section 45 (6) ^{4) 5)}
5	Elective modules from the university module catalog pursuant to Section 45 (7) ²⁾	see Section 45 (7)				10			5		5						EA pursuant to Section 45 (7) ^{4) 5)}
6	Laboratory course or research project pursuant to Section 45c			3		2.5							2.5				EA (SA)
7	Seminar pursuant to Section 45c				2	2.5							2.5				CA (LA)
8	Master's thesis					30								15	15		Master's thesis with presentation
9	Research project pursuant to Section 45d			4		5							5				CA (EA) ⁴⁾
		7	5	7	2		15	15	15	15	15	15	15	15	15		
Total semester hours (at least) and ECTS credits		21				120											

- 1) The distribution of the workload refers to students starting in the winter semester. For students starting in the summer semester, the compulsory modules are offered in the other semester respectively.
- 2) Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination. The same shall also apply to another previously completed elective or compulsory elective module in this degree program. Section 45 (3)(2) shall apply in this case.
- 3) The specialization catalog is published according to local practice on the ICT website before the semester starts.
- 4 The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details.
- 5) See module handbook; notwithstanding Section 28 (2)(2) **ABMPO/TechFak** failed attempts will not be counted and in the event of a failure to pass there is no obligation to repeat the failed examination within the legally stipulated period pursuant to Section 28 (1)(5) **ABMPO/TechFak**.

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Appendix 3c: Specialization Media Processing Systems

No.	Modules	SWS (semester hours)				ECTS credits	Distribution of workload per semester in ECTS credits ¹								Type and scope of the examination			
		L	T	P	S		1st	2nd	3rd	4th	5th	6th	7th	8th				
1	Compulsory modules ²⁾					20												
1a	Image and video compression	see FPO CME				5				5								EA (see FPO CME)
1b	Statistical signal processing	see FPO CME				5	5											EA (see FPO CME)
1c	Communication systems	2	2			5	5											EA (WE 90) or (o30) + CA (TA) ⁴⁾
1d	Pattern recognition	3	1			5			5									EA (see FPO INF)
2	Compulsory elective modules from the catalog according to specialization pursuant to Section 45b ^{2) 3)}	see Section 45b (3)				20	5	5		5	5							EA: see Section 45b(2) ⁴⁾
3	Elective modules from EEI and Computer Science pursuant to Section 45 (5) ²⁾	see Section 45 (5)				20		5		5	5	5						EA pursuant to Section 45 (5) ^{4) 5)}
4	Elective modules from the Faculty of Engineering or Faculty of Sciences pursuant to Section 45 (6) ²⁾	see Section 45 (6)				10			5		5							EA pursuant to Section 45 (6) ^{4) 5)}
5	Elective modules from the university module catalog pursuant to Section 45 (7) ²⁾	see Section 45 (7)				10		5	5									EA pursuant to Section 45 (7) ^{4) 5)}
6	Laboratory course or research project pursuant to Section 45c			3		2.5							2.5					EA (SA)

No.	Modules	SWS (semester hours)				ECTS credits	Distribution of workload per semester in ECTS credits ¹								Type and scope of the examination
		L	T	P	S		1st	2nd	3rd	4th	5th	6th	7th	8th	
7	Seminar pursuant to Section 45c				2	2.5						2,5			CA (LA)
8	Master's thesis					30							15	15	Master's thesis with presentation
9	Research project pursuant to Section 45d			4		5						5			CA (EA) ⁴⁾
Total semester hours (at least) and ECTS credits		5	3	7	2		15	15	15	15	15	15	15	15	
		17				120									

- ¹⁾ The distribution of the workload refers to students starting in the winter semester. For students starting in the summer semester, the compulsory modules are offered in the other semester respectively.
- ²⁾ Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination. The same shall also apply to another previously completed elective or compulsory elective module in this degree program. Section 45 (3)(2) shall apply in this case.
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