HOCHSCHULE
RHEIN-WAAL
Rhine-Waal University
of Applied Sciences

Examination Regulations

for

Communication and Information Engineering B.Sc.

Faculty of Communication and Environment

Rhine-Waal University of Applied Sciences

Dated 10 July 2019

Contents

Section 1
Scope

These examination regulations apply to the undergraduate degree programme Communication and Information Engineering B.Sc., offered in English by the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences, and are valid in conjunction with the General Examination Regulations for Bachelor's and Master's Degree Programmes ("RPO") of Rhine-Waal University of Applied Sciences. They govern the full-time, seven-semester mode of study.

Section 2
Academic objectives; purpose of examination; degree awarded

(1) The bachelor's examination concludes this degree programme and entitles graduates to continue their studies in a master's degree programme. Academic aims and objectives are outlined in Section 3 RPO. A strong command of the English language is essential to success in this degree programme, as it is a necessary prerequisite for the overarching goal of consolidating and expanding students' technical language and communication skills.

(2) The academic degree "Bachelor of Science", abbreviated as "B.Sc.", is awarded upon successful completion of the bachelor's examination.

Section 3
Admission requirements

(1) General admission requirements are defined in Section 4 RPO.

(2) Identical degree programmes or degree programmes with a significant overlap in content within the meaning of Section 4 (6) RPO are defined as any undergraduate (bachelor's or German "*Diplom*") programme at a university or university of applied sciences in Germany whose content largely and predominately falls under communications engineering, embedded systems or electrotechnology.

(3) Sufficient proficiency in English can be demonstrated by submitting a valid and recognised language certificate equivalent to CEFR level B2 (Common European Framework of Reference for Languages).

(4) Exempted from this language certificate requirement are applicants who have acquired English language proficiency equivalent to level B2 over the course of earning their university entrance qualification [*Hochschulreife*] at a secondary school in Germany. This is considered the case when an applicant has successfully completed at least seven years of English at a German secondary school and earned a final cumulative mark of at least "sufficient" (4.0 or better on the German grading scale) for the subject.

Section 4
Basic internship

Proof of completion of a preparatory / basic internship within the meaning of Section 4 (3) RPO is not required.

Section 5
Programme Structure; Volume of Instruction Hours; Progression of Studies

(1) This degree programme has a total volume of instruction of 136 SWS (combined hours per week from all lecture periods in the standard study duration).

(2) The modules of this degree programme comprise a total sum of 210 credits and conform to the ECTS framework defined RPO in Section 6 (5).

(3) All modules and examinations are conducted in English. However, students in Communication and Information Engineering B.Sc. may, with the prior approval of the Examination Board, complete electives offered in German by other degree programmes at Rhine-Waal University of Applied Sciences. For the interdisciplinary project students may also work in German-based project groups.

(4) Additional information about how this degree programme is organised and the type, form and scope of modules can be found in this study and examination plan (see annex). Additional information about learning outcomes, qualification aims, contents and forms of examination can be found in the corresponding module guide, which is available for viewing in the faculty's central office.

Section 6
Scope of examinations

(1) Within a module, students can be required to complete pass/fail certificates (Section 20 RPO) in order to attend the final written examination for that module. This applies to modules which require both a pass/fail certificate and a graded examination.

(2) The time allotted to students for a written examination is based on the credit value of the respective course and shall not exceed 180 minutes. For combined examinations (Section 14 (3) RPO), the time allotted can be reduced accordingly.

(3) An oral examination generally lasts at least 15, but no more than 30 minutes per student.

(4) The text portion of an assignment, term paper or project should generally not exceed 30 pages (DIN A4).

(5) Assignments, term papers or projects also be approved as group work if each student's individual contribution fulfils the requirements above and is clearly distinguishable – and thus assessable – due to distinct separation by section, page numbers or other criteria. In this case, the text portion for each participating group member should not exceed 20 pages (DIN A4).

(6)   Courses akin to laboratories, i.e. focused on imparting practical skills, will have a minimum attendance requirement. This applies to courses designated PT (Pra) in the

recommended study and examination plan. In general, students must attend at least 80% of sessions in these courses to meet the minimum attendance requirement. Missing a session is considered an absence regardless of reason. Participation is verified via an attendance list.

Section 7
Scope and form of the thesis

(1) The text portion of the thesis should generally be between 40 and 60 DIN A4 pages in length. The thesis may also be supplemented with other media as well, provided their use is appropriate and helpful as additional documentation within the context of the assigned task. In this case the length of the text portion of the thesis may deviate from the aforementioned minimum requirement.

(2) The bachelor's thesis can also be admitted as group work if each student's individual contribution fulfils the requirements in Section 23 (1) RPO and is clearly distinguishable – and thus assessable – due to clear and distinct identification by section, page numbers or other criteria.

Section 8
Admission to the thesis and colloquium

(1) In addition to the thesis admission requirements defined under Section 24 RPO, students must have obtained 175 credits.

(2) In addition to the colloquium admission requirements defined under Section 27 (2) RPO, candidates must have obtained 207 CP.

Section 9
Credit values for the thesis and colloquium

(1) Twelve credits are awarded for passing the bachelor's thesis.

(2) Three credits are awarded for passing the colloquium.

Section 10
Awarding of the bachelor's degree

The bachelor's degree title in Section 2 (2) shall be officially conferred upon issuing of the bachelor's degree certificate defined in Section 30 (1) RPO.

Section 11
Entry into force / transitional provisions

(1) These Examination Regulations shall enter into force on the day after the publication of the German-language original the Official Notices of Rhine-Waal University of Applied Sciences. They apply to students who first enrolled in Communication and Information Engineering B.Sc. of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences in or after winter semester 2020-21.

(2) Students who first enrolled in Communication and Information Engineering B.Sc. before winter semester 2020-21 may continue their studies according to the Examination Regulations dated 25 August 2015 (Official Notice 18/2015) until 28 February 2027 at the latest. Accordingly, the Examination Regulations dated 25 August 2015 (Official Notice 18/2015) shall expire on 1 March 2027.

(3) Students currently studying according to the Examination Regulations dated 25/08/2015 may submit a written request to the Examination Board to switch to the Examination Regulations defined herein. The Examination Board is responsible for decisions regarding the transfer of credits for previously completed modules and examinations.

Note: These examination regulations entered into force on 17 November 2020.

Annex

Recommended study and examination plan for Communication and Information Engineering B.Sc., full-time:

Version vom 29.04.2019

Code No (Kennnr.)	Module	SW (SWS)	L (V)	SL (SL)	S (S)	Ex (Ü)	PT (Pra)	Pro (Pro)	TE (Prü)	Sum CP	WS 1	SS 2	WS 3	SS 4	WS 5	SS 6	WS 7
CI_1.01	Physics: Mechanics, Electricity and Magnetism / Physik: Mechanik, Elektrizität und Magnetismus	10	5			5			E	10	10						
CI_1.02	Fundamentals of computer science and networks / Grundlagen der Informatik und der Computernetzwerke	4	2			2			E	5	4						
CI_1.03	Laboratory: Analog and digital engineering / Laborausbildung: Analoge und digitale Schaltungen	6					6		C	5	6						
CI_1.04	Scientific Programming / Wissenschaftliches Programmieren	4	2			2			E	5	4						
CI_1.05	Analysis & discrete mathematics / Analysis und diskrete Mathematik	4	2			2			E	5	4						
CI_2.01	Fundamentals of Electrical Engineering: Electrical Networks & Semiconductors / Grundlagen der Elektrotechnik: Elektrische Netze und Halbleiterbauelemente	4	2			2			E	5		4					
CI_2.02	Computer Architecture / Computerarchitektur	4	2			2			E	5		4					
CI_2.03	Computer Networks / Computernetze	4	2				2		E	5		4					
CI_2.04	Object Oriented Programming / Objektorientierte Programmierung	8	4			2	2		E	10		8					
CI_2.05	Linear algebra & graph theory / Lineare Algebra und Graphentheorie	4	2			2			E	5		4					
CI_3.01	Software Engineering / Software Engineering	4	2			2			E	5			4				
CI_3.02	Signals & Systems / Signale und Systeme	4	2			2			E	5			4				
CI_3.03	Data Management / Datenmanagement	4	2			2			E	5			4				
CI_3.04	Laboratory: Microprocessor Laboratory / Laborausbildung: Mikroprozessortechnik	4					4		C	5			4				
CI_3.05	Data Science / Data Science	4	2			2			E	5			4				
CI_3.06	Higher Mathematics / Höhere Mathematik	4	2			2			E	5			4				
CI_4.01	Analog and digital signal processing / Analoge und digitale Signalverarbeitung	8	4			2	2		E	10				8			
CI_4.02	Programming: Distributed Systems / Programmierung: verteilte Systeme	6	2			2	2		E	5				6			
	Elective key competences / Wahlfach: Schlüsselkompetenz	4		4					C	5				4			
	Elective Option 1 / Wahlpflichtkurs 1	4	2			2			E	5				4			
	Electicve Option 2 / Wahlpflichtkurs 2	4	2			2			E	5				4			
CI_5.01	Embedded Systems / Embedded Systems	4	2				2		E/C	5					4		
CI_5.02	Control Engineering / Steuerungs- und Regelungstechnik	4	2			2			E	5					4		
CI_5.03	Interdisciplinary Project / Interdisziplinäres Projekt	6						6	E	10					6		
	Elective Option 3 / Wahlpflichtkurs 3	4	2			2			E	5					4		
	Elective Option 4 / Wahlpflichtkurs 4	4	2			2			E	5					4		
	Semester hours per week (total)	124								150	28	24	24	26	22	30	30

SS 6 column: CI_6.01 Internship or semester abroad (30 CP; TE: C (T)) (Praxis- oder Auslandssemester)

WS 7 column: CI_7.01 Workshop 1: Research Methods (Forschungsmethoden) (4 SW; 5 CP, type:S;TE: C (T)); CI_7.02 Workshop 2: Scientific Writing (Wissenschaftliches Schreiben) (4 SW; 5CP: type:S; TE: C(T)); CI_7.03 Workshop 3: Advanced Seminar (Hauptseminar) (4 SW; 5 CP: type:S; TE: C(T)); CI_7.04 Bachelor Thesis (Bachelorarbeit) (12 CP) and Colloquium (Kolloquium) (3 CP)

SWS: 124, CP: 150   SWS: 12, CP: 60

Total   SWS: 136, CP: 210

Allocation			total	WS 1	WS 2	WS 3	WS 4	WS 5	WS 6	WS 7
	CH (SWS)	total	136	28	24	24	26	22	0	12
	CP	total	210	30	30	30	30	30	30	30

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Elective Options / Wahlpflichtkatalog *,**

Code No (Kennnr.)	Elective Module	SW (SWS)	TE (Prü)	Sum CP
CI_W.01	Ambient Intelligent Systems / Ambient Intelligent Systems	4	E	5
CI_W.02	Drone Technology and Application / Dohnentechnologie und Ihre Anwendung	4	E	5
CI_W.03	Communication Security / Sicherheit in Kommunikationssystemen	4	E	5
CI_W.04	Machine Learning / Machine Learning	4	E	5
CI_W.05	Advanced Modelling and Simulation / Fortgeschrittene Modellierung und Simulation	4	E	5
CI_W.06	Fundamentals of Business Administration / Grundlage der Betriebswirtschaft	4	E	5
CI_W.07	Parallel Programming / Parallel Programming	4	E	5
CI_W.08	Innovative Technologies / Innovative Technologien	4	E	5

* Im Wahlpflichtbereich können mit Zustimmung des Prüfungsausschusses maximal 6 CP aus dem gesamten Studienangebot der Hochschule Rhein-Waal belegt werden.

* As elective subjects, a maximum of 6 CP can be chosen with the consent of the examination committee SSeminar (Seminar) from any study programme at the Rhine-Waal University of Applied Sciences

** Die Fakultät behält sich das Recht vor eine Mindestteilnehmerzahl für das Zustandekommen eines Wahlpflichtkurses festzulegen oder eine Veranstaltung organisationsbedingt zu verschieben. Die Möglichkeit des Erreichens der vorgeschriebenen Kreditpunktanzahl aus dem Wahlpflichtbereich bleibt unberührt

** The faculty reserves the rights to determine a minimum number of participants for offering an elective subject and to postpone single subjects because of organisational issues . The possibility to obtain the required number of credit points remains unaffected.

Key Competences / Schlüsselkompetenzen

Code No (Kennnr.)	Elective Key Competences Module	SW (SWS)	TE (Prü)	Sum CP
CI_K.01	Project Management / Projektmanagement	4	C	5
CI_K.02	Foreign Language / Fremdsprache	4	C	5

List of abbreviations / Abkürzungen

List of abbreviations	
SW	Semester hours per week (Semesterwochenstuden)
L	Lecture (Vorlesungs)
SL	Seminaristic lecture (Seminaristische Lehrveranstaltung)
S	Seminar (Seminar)
Ex	Exercise (Übung)
PT	Practical training (Praktikum)
Pro	Project (Projekt)
TE	Type of examination (Prüfungsform)
CP	Credit Points
WS	Winter semester (Wintersemester)
SS	Summer semester (Sommersemester)
E	Examination (Prüfung)
C	Certificate (Testat)