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HOCHSCHULE RHEIN-WAAL
Rhine-Waal University of Applied Sciences

Examination Regulations

For

Infotronic Systems Engineering B.Sc.

Faculty of Communication and Environment

Rhine-Waal University of Applied Sciences

Dated 10 July 2019

(Official Notice 26/2020)

As amended by the first amending statutes

Dated 3 March 2021

(Official Notices 21/2021)

Contents

Section 1
Scope

These examination regulations apply to Infotronic Systems 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) Applicants are ineligible for admission if they have previously failed the final attempt at a mandatory examination in a degree programme at a university subject to German Basic Law which shares a significant overlap in content with this degree programme.

(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 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 this degree programme may complete electives in German offered by other degree programmes at Rhine-Waal University of Applied Sciences with approval of the Examination Board. 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 Infotronic Systems Engineering B.Sc. of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences in or after winter semester 2020-2021.

(2) Students who first enrolled in Communication and Information Engineering B.Sc. before winter semester 2020-2021 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 August 2015 may submit a written request to the Examination Board to switch to the Examination Regulations defined herein. The Examination Board is responsible for all credit recognition decisions for previously completed modules and examinations.

Note: These Examination Regulations entered into force on 8 May 2021.

Annex

Recommended study and examination plan for Infotronic Systems Engineering B.Sc.

Version vom 25.01.2020

Code No (Kennnr.)	Module	SW (SWS)	Type (Veranstaltungsart)						TE (Prü)	Sum CP	WS 1	SS 2	WS 3	SS 4	WS 5	SS 6	WS 7
			L (V)	SL (SL)	S (S)	Ex (Ü)	PT (Pra)	Pro (Pro)									
CI_1.02	Fundamentals of computer science and networks Grundlagen der Informatik und der Computernetzwerke	4	2			2			E	5	4					CI_6.01 Internship or semester abroad (30 CP; TE: C) (Praxis- oder Auslandssemester)	CI_7.01 Workshop 1: Research Methods (Forschungsmethoden) (4 SW; 5 CP, type:S;TE:C) CI_7.02 Workshop 2: Scientific Writing (wissenschaftliches Schreiben) (4 SW; 5CP; type:S; TE: C) CI_7.03 Workshop 3: Advanced Seminar (Hauptseminar) (4 SW; 5 CP; type:S; TE: C) CI_7.04 Bachelor Thesis (Bachelorarbeit) (12 CP) and Colloquium (Kolloquium) (3 CP)
CI_1.05	Analysis & discrete mathematics Analysis und diskrete Mathematik	4	2			2			E	5	4						
CI_1.07	Physics: Mechanics, Electricity and Magnetism Physik : Mechanik, Elektrizität und Magnetismus	10	5			5			E	10	10						
CI_1.08	Laboratory: Analog and digital engineering Laborausbildung: Analoge und digitale Schaltungen	6					6		C	5	6						
CI_1.09	Scientific Programming Wissenschaftliches Programmieren	4	2			2			E	5	4						
CI_2.03	Object Oriented Programming Objektorientierte Programmierung	8	4			2	2		E	10		8					
CI_2.04	Computer Networks Computernetze	4	2				2		E	5		4					
CI_2.05	Linear algebra & graph theory Lineare Algebra und Graphentheorie	4	2			2			E	5		4					
CI_2.07	Fundamentals of Electrical Engineering: Electrical Networks & Semiconductors Grundlagen der Elektrotechnik: Elektrische Netze und Halbleiterbauelemente	4	2			2			E	5		4					
CI_2.08	Computer Architecture Computerarchitektur	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_3.06	Higher Mathematics Höhere Mathematik	4	2			2			E	5			4				
CI_3.07	Software Engineering Software Engineering	4	2			2			E	5			4				
CI_3.08	Laboratory: Micorprocessor Laboratory Laborausbildung: Mikroprozessortechnik	4					4		C	5			4				
CI_3.09	Data Science Data Science	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_4.03	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			
	Elective Option 2 Wahlpflichtkurs 2	4	2			2			E	5				4			
CI_5.01	Embedded Systems Embedded Systems	4	2				2		E	5					4		
CI_5.02	Communication Systems Nachrichtentechnische Systeme	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

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

Total SWS: 136, CP: 210

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

Elective Options / Wahlpflichkatalog *,**

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.03	Communication Security Sicherheit in Kommunikationssystemen	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
CI_W.09	Control Engineering Steuerungs- und Regelungstechnik	4	E	5
CI_W.10	Machine Learning Machine Learning	4	E	5
CI_W.11	Drone Technology and Application Dohnentechnologie und Ihre Anwendung	4	E	5

* Im Wahlpflichtbereich können mit Zustimmung des Prüfungsausschusses maximal 5 CP abweichend vom Wahlpflichtkatalog belegt werden. Belegbar sind Bachelormodule aus dem gesamten Studienangebot der Hochschule Rhein-Waal, die eine adäquate Ergänzung zum Schwerpunkt des Wahlpflichtkatalogs darstellen. Ausgenommen sind Sprachkurse, klassische Labore und unbenotete Module.

*

Key Competences Options

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

** 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.

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)