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

from 10 July 2019
(Official Notice 26/2020)

As amended by the second amending statutes
from 23 June 2025
(Official Notice 20/2025)

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. The academic aims and objectives of this degree programme are outlined in Section 3 RPO. A strong command of English is key to success in this degree programme, as it provides the essential basis for the programme's continuous objective of expanding and honing students' professional language skills.

(2) The academic degree "Bachelor of Science", abbreviated as "B.Sc.", is awarded for successfully completing 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 failed the final attempt at a mandatory examination in a previous degree programme that was very similar content-wise to this degree programme and offered by a university subject to German Basic Law.

(3) Sufficient proficiency in English can be demonstrated by a recognised language certificate for level B2 of the CEFR (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 to be the case for applicants who have successfully completed at least seven years of English at a German secondary school and earned a final mark of at least "sufficient" (4.0 or better on the German grading scale).

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) The total volume of instruction for this degree programme is 136 contact hours per week (CH, or SWS in German).

(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. For the elective module 8385 “Foreign Language”, students can generally choose any language course offered, provided the selected course is not in their native language.

(4) Additional information about the breakdown of this degree programme and the type, form and scope of modules is available in the study and examination plan at the end of this document. Additional information about learning outcomes, qualification aims, contents and forms of examination is available in the module guide, which is available for viewing in the faculty’s central office.

(5) Students cannot be admitted to modules from the third semester of study or higher until they have earned at least 25 credit points from modules in the first two semesters of study. Furthermore, students must have successfully completed at least two of the following mandatory modules: “8313 Physics: Mechanics, Electricity and Magnetism”, “8326 Fundamental Programming” and “8316 Higher Mathematics I – Analysis”. Students cannot be admitted to modules from the fourth semester of study or higher until they have earned at least 40 credit points from modules in the first three semesters of study. Furthermore, students must have completed all of the modules listed in sentence 2.

Section 6
Scope of examinations

(1) Intentionally omitted.

(2) The time allotted to students for a written examination is based on the credit value of the respective course and will 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 be supplemented with other media, provided their use as additional documentation is appropriate and helpful 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 undergraduate thesis can also be admitted as group work if each student's individual contribution fulfils the requirements set forth in Section 23 (1) RPO and is clearly distinguishable (and thus assessable) thanks to clear and distinct delimitation by sections, 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 set forth in 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 (3) credits are awarded for passing the colloquium.

Section 10
Conferral of the bachelor's degree

The bachelor's degree specified in Section 2 (2) is 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 will enter into force on the day after the publication of the German-language original as an Official Notice 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 summer semester 2026.

(2) Students who enrolled in the Infotronic Systems Engineering, B.Sc. before summer semester 2026 may continue their studies according to the examination regulations from 10 July 2019 (Official Notice 26/2020), as amended by the first amending statutes from 3 March 2021 (Official Notice 21/2021), until no later than 31 August 2032. Accordingly, the examination regulations dated 10 July 2019 (Official Notices 26/2020), as amended by the first amending statutes from 3 March 2021 (Official Notices 21/2021), will expire on 1 September 2032.

(3) Students currently studying according to the examination regulations from 10 July 2019, as amended by the first amending statutes from 3 March 2021, may request in writing to the Examination Board to switch to the examination regulations defined herein. The Examination Board is responsible for all credit recognition decisions for modules and examinations completed under previous examination regulations. Upon expiry of the examination regulations from 10 July 2019, as amended by the first amending statutes from 3 March 2021, any students still studying under said examination regulations are considered to have switched to the present examination regulations automatically.

Note: These examination regulations entered into force in their present version on 29 October 2025.

Annex

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

Version vom 25.09.2025

Code No (Kennnr.)	Module	SW (SWS)	Type (Veranstaltungsart) 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
8311	Fundamentals of Computer Science and Networks Grundlagen der Informatik und der Computernetzwerke	4	2			2			E	5	4					8361 Internship or Semester Abroad (30 CP; TE: C) (Praxis- oder Auslandssemester) 8371 Workshop 1: Research Methods (Forschungsmethoden) (4 SW; 5 CP; type:S;TE:C) 8372 Workshop 2: Scientific Writing (Wissenschaftliches Schreiben) (4 SW; 5CP; type:S; TE: C) 8373 Workshop 3: Advanced Seminar (Hauptseminar) (4 SW; 5 CP; type:S; TE: C) 8301 Bachelor Thesis (Bachelorarbeit) (12 CP) and 8302 Colloquium (Kolloquium) (3 CP)	
8316	Higher Mathematics I - Analysis Höhere Mathematik I - Analysis	4	2			2			E	5	4						
8313	Physics: Mechanics, Electricity and Magnetism Physik: Mechanik, Elektrizität und Magnetismus	10	5			5			E	10	10						
8314	Laboratory: Analog and Digital Engineering Laborausbildung: Analoge und digitale Schaltungen	6					6		C	5	6						
8317	Scientific Computing Scientific Computing	4	2			2			E	5	4						
8326	Fundamental Programming Grundlegende Programmierung	8	4			2	2		E	10		8					
8327	Computer- and Cloud-Networks Computer- und Cloudnetzwerke	4	2				2		E	5		4					
8328	Higher Mathematics II - Advanced Analysis and Linear Algebra Höhere Mathematik II - Fortgeschrittene Analysis und Lineare Algebra	4	2			2			E	5		4					
8329	Electrical Engineering Elektrotechnik	4	2			2			E	5		4					
8325	Computer Architecture Computerarchitektur	4	2			2			E	5		4					
8331	Signals & Systems Signale und Systeme	4	2			2			E	5			4				
8332	Data Management Datenmanagement	4	2			2			E	5			4				
8337	Higher Mathematics III - Advanced Vector Analysis and Integral Transforms Integraltransformationen	4	2			2			E	5			4				
8334	Software Engineering Software Engineering	4	2			2			E	5			4				
8335	Laboratory: Microprocessor Laboratory Laborausbildung: Mikroprozessortechnik	4					4		C	5			4				
8338	Applied Data Science Angewandte Datenwissenschaften	4	2			2			E	5			4				
8341	Analog and Digital Signal Processing Analoge und digitale Signalverarbeitung	8	4			2	2		E	10				8			
8343	Advanced Programming Fortgeschrittene Programmierung	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			
8351	Embedded Systems Embedded Systems	4	2				2		E	5					4		
8352	Communication Systems Nachrichtentechnische Systeme	4	2			2			E	5					4		
8009	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	WS 1	WS 2	WS 3	WS 4	WS 5	WS 6	WS 7
			SWS: 136, CP: 210							
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
8386	AI in Assistive Technologies KI in assistiven Technologien	4	E	5
8387	Information Security and Privacy Informationssicherheit und Datenschutz	4	E	5
8377	Advanced Modelling and Simulation Fortgeschrittene Modellierung und Simulation	4	E	5
8378	Fundamentals of Business Administration Grundlage der Betriebswirtschaft	4	E	5
8379	Parallel Programming Parallel Programming	4	E	5
8380	Innovative Technologies Innovative Technologien	4	E	5
8381	Control Engineering Steuerungs- und Regelungstechnik	4	E	5
8382	Machine Learning Machine Learning	4	E	5
8383	Drone Technology and Application Dohnentechnologie und ihre Anwendung	4	E	5

* Im Wahlpflichtbereich können mit Zustimmung des Prüfungsausschusses maximal 5 CP aus dem gesamten Studienangebot der Hochschule Rhein-Waal 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.

* As elective subjects, a maximum of 5 CP can be chosen with the consent of the examination board from any study programme at the Rhine-Waal University of Applied Sciences. Eligible for selection are bachelor's modules that constitute an appropriate complement to the focus of the elective course catalogue. Language courses, standard laboratory courses and non-graded modules are excluded from selection.

** 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 Options

Code No (Kennnr.)	Elective Key Competences Module	SW (SWS)	TE (Prü)	Sum CP
8384	Project Management Projektmanagement	4	C	5
8385	Foreign Language Fremdsprache	4	C	5

List of abbreviations	
SW	Semester hours per week (Semesterwochenstuden)
L	Lecture (Vorlesung)
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)