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Examination Regulations

for

Information Engineering and Computer Science, M.Sc.

of the Faculty of Communication and Environment of
Rhine-Waal University of Applied Sciences

from 14 August 2025
(Official Notice 18/2025)

Acting on the basis of Section 2 (4) sentence 1 and Section 64 of the Higher Education Act of North Rhine-Westphalia (*Hochschulgesetz*, HG NRW), in the version dated 16 September 2014 (GV.NRW. 2014, p. 547), which was last amended on 19 December 2024 (GV.NRW., p. 1222) and entered into force on 1 January 2025, as well as on the basis of the General Examination Regulations for Bachelor's and Master's Degree Programmes of Rhine-Waal University of Applied Sciences (RPO) dated 3 January 2018 (Official Notice 07/2018), as amended by the fourth amending statutes on 2 April 2024 (Official Notice 05/2024), the Faculty Council of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences has enacted the following examination regulations for Information Engineering and Computer Science, M.Sc.:

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Section 1

Scope

These examination regulations apply to the master's degree programme Information Engineering and Computer Science, M.Sc., which is 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 of Rhine-Waal University of Applied Sciences ("RPO").

Section 2

Academic objectives; Purpose of examination; Degree awarded

- (1) This degree programme concludes with the master's examination. The academic aims and objectives of this degree programme are outlined in Section 3 RPO. In particular, this master's degree programme seeks to empower students to apply methodologies from the natural sciences, engineering, and information technologies to develop practical and feasible solutions that incorporate connections beyond traditional disciplinary boundaries, and to conduct scientific research.
- (2) The title Master of Science, abbreviated as M.Sc., is awarded for successful completion of the master's examination.
- (3) One of the successfully completed specialisation paths defined in the study and examination plan will be presented on the graduation certificate.

Section 3

Admission requirements

Admission to this degree programme is governed by the Admission Regulations for Information Engineering and Computer Science, M.Sc. of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences.

Section 4

Standard duration of study; Programme structure; Volume of instruction hours

- (1) The standard period of study, including all examinations, is three semesters.
- (2) This degree programme has a total volume of instruction of 48 weekly contact hours (*Semesterwochenstunden*, SWS).
- (3) Additional information about how this degree programme is organised as well as the type,

form and scope of modules can be found in the study and examination plans in the annex. Additional information about learning outcomes, qualification aims, contents and types of examinations is available in the module guide, which is available for viewing in the faculty's central office.

(4) All students must select and successfully complete a specialisation path. The selected specialisation path is considered complete when a student has successfully completed three modules from the corresponding module catalogue. After successfully completing a specialisation path, students may not change or complete additional specialisation paths.

Section 5 **Scope of examinations**

(1) In certain modules, pass/fail certificates (see Section 20 RPO) may be required in order to attend the final examination for that module. This applies to modules requiring both a pass/fail certificate and a graded examination.

(2) The time allotted for written examinations depends on the number of obtainable credits for the corresponding course. As a rule, 60 minutes shall be allotted for every two weekly contact hours (SWS).

(3) An oral examination generally lasts at least 30, but no more than 45 minutes per student.

(4) The time allotted for an assignment, term paper or project shall not exceed four months. The text portion of the work should generally not exceed 30 pages (DIN A4, excluding annexes).

Section 6 **Scope and form of the master's thesis**

(1) The text portion of the master's thesis should generally be between 70 and 90 pages (DIN A4) in length. The responsible supervisor will set the page requirement. 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) Students are given a period of 20 weeks (from the assignment date to the submission deadline) to complete the thesis. The thesis may not be submitted within the first eight weeks after the date of assignment.

Section 7 **Admission to the thesis and colloquium**

- (1) In addition to the requirements set forth in Section 24 (1) RPO, students must have earned 50 credit points in order to be admitted to the master's thesis.
- (2) In addition to the requirements set forth in Section 27 (2) RPO, students must have earned 87 credit points in order to be admitted to the colloquium.

Section 8 **Credit values for the thesis and colloquium**

- (1) Twenty-seven credit points are awarded for passing the thesis.
- (2) Three credit points are awarded for passing the colloquium.

Section 9 **Awarding of the master's degree**

The master's degree specified in Section 2 (2) is officially conferred upon issuing of the master's degree certificate defined in Section 30 (1) RPO.

Section 10 **Entry into force / Transitional provisions**

- (1) These examination regulations will enter into force on the day after publication of the German-language original in the Official Notices of Rhine-Waal University of Applied Sciences. They apply to students who first enrolled in Information Engineering and Computer Science, M.Sc. of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences in or after summer semester 2026.
- (2) Students who first enrolled in Information Engineering and Computer Science, M.Sc. before summer semester 2026 may continue their studies according to the examination regulations dated 13 January 2021 (Official Notice 22/2021) until 31 August 2029 at the latest. Accordingly, the examination regulations from 13 January 2021 (Official Notice 22/2021) will expire on 1 September 2029.
- (3) Students currently studying according to the examination regulations from 13 January 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 13 January 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 28 October 2025.

Annex Study and Examination Plan

Information Engineering and Computer Science, M.Sc.

Modulcode	Modulbezeichnung	SW	Veranstaltungsart						TE	CP	Summe CP	SS1	WS2	SS3
			L	SL	S	Ex	PT	Pro						
9511	System Simulation <i>System Simulation</i>	4	2			2			E	5	5	4		
9512	Data Analysis & Information Engineering <i>Datenanalyse & Information Engineering</i>	4	2			2			E	5	5	4		
9513	Scientific and Technical Communication <i>Wissenschaftliche und Technische Kommunikation</i>	4		4					E	5	5	4		
9515	Artificial Intelligence and its Application <i>Künstliche Intelligenz und ihre Anwendung</i>	4		4					E	5	5	4		
9521	Data Mining <i>Data Mining</i>	4	2			2			E	5	5	4		
9524	Innovation Management <i>Innovationsmanagement</i>	4	3			1			E	5	5		4	
9526	Applied Research Project <i>Angewandtes Forschungsprojekt</i>	4					4		E	5	5		4	
9527	Advanced Application of Artificial Intelligence <i>Fortgeschritten Anwendungen der Künstliche Intelligenz</i>	4		4					E	5	5		4	
9528	Machine Learning <i>Maschinelles Lernen</i>	4	2			1	1		E	5	5		4	
	Specialization Track: Elective 1 <i>Spezialisierung Modul 1</i>	4	2			2			E	5	5	4		
	Specialization Track: Elective 2 <i>Spezialisierung Modul 2</i>	4	2			2			E	5	5		4	
	Specialization Track: Elective 3 <i>Spezialisierung Modul 3</i>	4	2			2			E	5	5		4	

9501 Master Thesis/Masterarbeit (27 CP)
and 9502 Colloquium/Kolloquium (3 CP)

	Semester hours per week (Semesterwochenstunden)	48							CP	60	24	24		30
48														

48

90 CP

	SS1	WS2	SS3
Verteilung	SWS total	48	24 24
	CP total	90	30 30 30

Wahlpflichtkatalog*/**/***/**** für den Masterstudiengang Information Engineering and Computer Science, M.Sc.

Modulcode	Modulbezeichnung	CP	WL	Type	TE	Specialization Software and Systems	Specialization Environmental Sciences	Specialization Supply Chain
9531	Advanced System Security <i>System Sicherheit für Fortgeschrittenen</i>	5	150	SL	E	X		
9532	Mobile and Internet Computing <i>Mobile und Internet-basierte Systeme</i>	5	150	SL	E	X		
9534	Privacy in Distributed Systems <i>Datenschutz in verteilten Systemen</i>	5	150	SL	E	X		
9535	Innovative Approaches in Applied Computer Science I <i>Innovative Ansätze in der angewandten Informatik I</i>	5	150	SL	E	X		
9536	Innovative Approaches in Applied Computer Science II <i>Innovative Ansätze in der angewandten Informatik II</i>	5	150	SL	E	X		
9537	Innovative Approaches in Applied Computer Science III <i>Innovative Ansätze in der angewandten Informatik III</i>	5	150	SL	E	X		
9541	Environmental Analysis, Impact and Risk <i>Umwelt, Analyse, Wirkungsabschätzung und Risikoanalyse</i>	5	150	SL	E/C		X	
9543	Data Processing in Ecosystem Management <i>Datenverarbeitung im Ökosystem Management</i>	5	150	SL	E/C		X	
9544	Applied Geoinformatics <i>Angewandte Geoinformatik</i>	5	150	SL	E		X	
9545	Hands-IoT Systems for Environmental Monitoring <i>Praktische IoT-Systeme für die Umweltüberwachung</i>	5	150	SL	E		X	
9546	Environmental Analysis of Energy Production <i>Umweltanalyse der Energieerzeugung</i>	5	150	SL	E		X	
9547	Applied Sustainability Research Project <i>Angewandtes Nachhaltigkeitsforschungsprojekt</i>	5	150	SL	E		X	
9551	Logistics Networks Modelling <i>Modellierung von Logistikknotzwerken</i>	5	150	SL	E			X
9552	Advanced Logistics Control <i>Logistiksteuerung für Fortgeschrittenen</i>	5	150	SL	E			X
9554	Supply Chain Planning and Optimization <i>Lieferkettenplanung und -optimierung</i>	5	150	SL	E			X
9555	Innovative Approaches in Supply Chains I <i>Innovative Ansätze in Lieferketten I</i>	5	150	SL	E			X
9556	Innovative Approaches in Supply Chains II <i>Innovative Ansätze in Lieferketten II</i>	5	150	SL	E			X
9557	Innovative Approaches in Supply Chains III <i>Innovative Ansätze in Lieferketten III</i>	5	150	SL	E			X

* Die Fakultät behält sich das Recht vor, eine Mindestteilnehmerzahl für das Zustandekommen eines Wahlpflichtkurses festzulegen. Die Möglichkeit des Erreichens der vorgeschriebenen Kreditpunktzahl aus dem Wahlpflichtbereich bleibt unberührt. / The faculty reserves the right to determine a minimum number of participants for offering an elective subject. The possibility to obtain the required number of credit points remains unaffected.

** Die Fakultät Kommunikation und Umwelt behält sich das Recht vor, das Modulangebot im Wahlpflichtbereich zu ändern. / The Faculty Communication and Environment reserves the right to change the catalogue of electives.

*** Aufgrund von stundenplantechnischen Randbedingungen ist nicht auszuschließen, dass Module verschiedener Fokusfelder sowie Module des Wahlpflichtbereichs zeitgleich angeboten werden. / Due to time tabling constraints subjects from different focus fields and electives may be offered concurrently.

**** Eine Spezialisierung besteht aus 3 Wahlpflichtfächern aus der oben angegebenen Liste. / A Specialization consists of 3 elective courses out of the list indicated above.

Abbreviations (Abkürzungen)

SW(SWS)	Semester hours per week (Semesterwochenstunden)
L	Lecture (Vorlesung)
SL	Seminaristic lecture (Seminaristische Lehrveranstaltung)
S	Seminar
Ex	Exercise (Übung)
PT	Practical training (Praktikum)
Pro	Project (Projekt)
TE	Type of examination (Prüfungsform)
CP	Credit points (= ECTS points)
WS	Winter semester (Wintersemester)
SS	Summer semester (Sommersemester)
E	Examination (Prüfung)
C	Certificate (Testat)
WL	Workload