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In the event of any discrepancy or doubt in interpretation, the original German texts published in the Official Notices of Rhine-Waal University of Applied Sciences take precedence. Only the original German texts are considered legally binding.



# Examination Regulations

for

## Bionics M.Sc.

at Rhine-Waal University of Applied Sciences

Dated 6 August 2019

(Published in Official Notices 28/2019)

In accordance with Section 2 (4) sentence 1 and Section 64 (1) of the Higher Education Act of North Rhine-Westphalia [*Hochschulgesetz NRW*], in the amended form produced by the Act for the Future Development of Universities [*Hochschulzukunftsgesetz*] of 16 September 2014 (GV.NRW. 2014, p. 547), last amended by the Act of 17 October 2017 (GV.NRW. 2017, p. 806) and the General Examination Regulations for Bachelor's and Master's Degree Programmes at Rhine-Waal University of Applied Sciences (RPO) from 3 January 2018 (Official Notices 07/2018), the Faculty Council of the Faculty of Technology and Bionics of Rhine-Waal University of Applied Sciences enacted the following examination regulations on 14 November 2018:

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## **Section 1 Applicability**

These examination regulations apply to the bachelor's degree programme Bionics M.Sc., offered in English by the Faculty of Technology and Bionics of Rhine-Waal University of Applied Sciences, 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 contents, structure and progression of the degree programme, as well as related assessments, including examinations.

## **Section 2 Academic Objectives and Purpose of Examination, Master's Degree**

(1) Building upon a first undergraduate degree, this degree programme results in an advanced professional degree that qualifies graduates to pursue a doctoral degree in accordance with the Higher Education Act NRW, Section 67 (4) sentence 1 (c).

(2) Academic aims and objectives are outlined in Section 3 RPO.

(3) 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.

(4) The academic title "Master of Science", abbreviated as "M.Sc.", is awarded for passing the master's assessment.

(5) In the graduation certificate, the name of the degree programme will be amended to include the graduate's selected focus field (refer to Section 4 (3)). These designations are possible:

- Bionics – Robotics
  
- Bionics – Materials Science

## **Section 3 General Admission Requirements**

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

(2) Admission to this degree programme is further regulated by the Admission Regulations for Mechanical Engineering M.Sc. and Bionics M.Sc. of Rhine-Waal University of Applied Sciences.

## **Section 4 Standard Duration of Study; Programme Structure; Volume of Instruction Hours**

(1) The standard study duration, the programme structure and the volume of instruction hours are defined in Section 5 (2) RPO.

(2) The total volume of instruction for this degree programme is 36 SWS (combined hours per week for all lecture periods in the standard study duration).

(3) This degree programme is divided into the following focus fields: Robotics or Materials Science. Students are obliged to select one of these two fields.

**Section 5**  
**Scope of Examinations**

- (1) The time allotted for a written examination depends on the number of obtainable credits. As a rule, 30 minutes are allotted for every one credit, for a total duration up to, but not exceeding, two hours.
- (2) An oral examination generally lasts between 30 and 45 minutes.
- (3) Assignments, term papers or projects should generally not exceed 10,000 words.

**Section 6**  
**Parts of the Final Master's Assessment; Credit Points**

- (1) The parts of the master's assessment, as well as the rules regarding the awarding of credit points, are set forth in Section 6 RPO.

**Section 7**  
**Admission to the Thesis and Colloquium**

- (1) Admission to the thesis is regulated by Section 24 (1) RPO.
- (2) Students must have obtained at least 50 credits to be eligible for admission to the thesis.
- (3) Admission to the colloquium is regulated by Section 27 (2) RPO.
- (4) Students must have obtained at least 87 credits to be eligible for admission to the colloquium.

**Section 8**  
**Thesis**

- (1) Rules regarding the completion and submission of the thesis are defined in Sections 25 and 26 RPO.
- (2) The text portion of the thesis should generally be between 15,000 and 20,000 words 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.

**Section 9**  
**Credit Values for the Thesis and Colloquium**

- (1) Twenty-two credits are awarded for passing the thesis.
- (2) Three credits are awarded for passing the colloquium.

**Section 10**  
**Awarding of the Master's Degree**

(1) The awarding of the master's degree is regulated by Sections 3 (4) and 30 (1) RPO.

**Section 11**  
**Entry into Force**

(1) These examination regulations shall enter into force on the day after their publication in the Official Notices of Rhine-Waal University of Applied Sciences. They apply to students who first enrolled in Bionics M.Sc. of the Faculty of Technology and Bionics of Rhine-Waal University of Applied Sciences in or after winter semester 2019-20.

(2) Students who enrolled in Bionics M.Sc. before winter semester 2019-20 may continue their studies according to the previous examination regulations dated 29 July 2011 (Official Notices 13/2011), as amended on 10 February 2016 (Official Notices 03/2019), until 28 February 2022 at the latest. Accordingly, the examination regulations dated 29 July 11 (Official Notices 13/2011), as amended on 10 February 2016 (Official Notices 03/2016), shall expire on 1 March 2022.

(3) Students currently studying according to the examination regulations dated 29/07/11, as amended, may submit a written request to the Central Examination Office to switch to the examination regulations defined in this document. The Faculty Examination Board is responsible for all decisions relating to the recognition of previously earned credits.

Issued on the basis of a resolution of the Faculty Council of the Faculty of Technology and Bionics of Rhine-Waal University of Applied Sciences from 14 November 2018 and of the Executive Board of Rhine-Waal University of Applied Sciences from 19 March 2019.

**Note:**

These examination regulations entered into force on 21 August 2019.

Curriculum MB		HPW	Type					Examination form		CP	HPW			
			V	SL	S	Ü	Pra	Pro	Attestation		graded	SS 1	WS 2	SS 3
<b>Core modules</b>														
Module Code	Module													
3300	Research Methods for Engineers	3	1			1	1		x		5		x	
3301	Numerical Methods of Simulation	3	2			1				x	5		x	
3302	General Management	3	2				1		x		5	x		
3600	Principles of Bionics	3	2				1			x	5	x		
3601	Bionics of Sensing	3	2				1			x	5		x	
<b>Focusfield Robotic*</b>														
Module Code	Core Modules													
3402	Principles of Software Development	3	2				1			x	5		x	
Module Code	Focusfield Modules													
3603	Human Machine Interaction	3	2				1		x		5	x		
3606	Physics of Agent Behaviour	3	2				1			x	5	x		
3407	Computational Multibody Dynamics	3	1				2			x	5	x		
3602	Bioinspired Machine Learning	3	2			1				x	5		x	
3604	Autonomous Robotics	3	2				1			x	5		x	
3605	Evolutionary Algorithms	3	2				1			x	5		x	
<b>Focusfield Materials*</b>														
Module Code	Core Modules													
3608	Sustainability	3	2				1			x	5		x	
Module Code	Focusfield Modules													
3609	Advanced Chemistry of Materials	3	2				1			x	5	x		
3611	Bioplastics	3	2				1		x		5	x		
3613	Biomimetic Engineering Materials	3	2				1			x	5	x		
3403	Materials Selection and Simulation	3	2				1			x	5	x		
3610	Smart Materials and Surface Technology	3	2				1			x	5		x	
3612	Lightweight Materials and Joining	3	2				1			x	5		x	
<b>Final Semester</b>														
Module Code	Module													
3303	Applied Research Project (ARP)									x	5			x
3304	Master thesis									x	22			x
3305	Colloquium									x	3			x
Explanations														
* Die Fakultät behält sich das Recht vor, sowohl eine Mindestteilnehmerzahl für das Zustandekommen eines Fokusfeldes / Wahlbereiches als auch eine Maximalteilnehmerzahl festzulegen. / * The faculty reserves the right to determine a minimum and a maximum number of participants for offering a focus fields / electives.														
Abbreviations														
HPW Semesterwochenstunden / hours per week														
CP Kreditpunkte / credit points														