

# Examination Regulations

for

## Science Communication & Bionics B.A.

and

## Science Communication & Bionics B.Sc.

at Rhine-Waal University of Applied Sciences

Dated 20 April 2015

*Please note: this English translation is provided for information purposes only.  
Only the German version published in the Official Notices of Rhine-Waal University of  
Applied Sciences is legally binding.*

### Contents

Section 1	Scope of applicability
Section 2	Aims and objectives; purpose of examination; degree awarded
Section 3	Entry requirements
Section 4	Preparatory internship
Section 5	Programme structure; volume of studies; progression of studies
Section 5a	Practical semester; study abroad semester
Section 6	Scope of examinations
Section 7	Scope and form of the bachelor's thesis
Section 8	Admission to the bachelor's thesis and colloquium
Section 9	Credit points for the bachelor's thesis and colloquium
Section 10	Conferment of the bachelor's degree
Section 11	Entry into force

Annex I: Recommended study and examination schedule for Science Communication & Bionics B.A.

Annex II: Recommended study and examination schedule for Science Communication & Bionics B.Sc.

## **Section 1**

### **Scope of applicability**

These examination regulations shall apply to the English-taught bachelor's degree programmes Science Communication & Bionics B.A. and Science Communication & Bionics B.Sc. of the Faculty of Technology and Bionics of Rhine-Waal University of Applied Sciences, in conjunction with the General Examination Regulations for Bachelor's Programmes [Rahmenprüfungsordnung; hereinafter "RPO"] at Rhine-Waal University of Applied Sciences. These examination regulations govern the standard seven-semester mode of study (full-time study).

## **Section 2**

### **Aims and objectives; purpose of examination; degree awarded**

(1) The bachelor's examination concludes the degree programme and constitutes a first academic and scientific qualification towards a career. The aims and objectives for bachelor's programmes are outlined in Section 3 RPO. A strong command of the English language is key to achieving success in this degree programme, as it provides the essential basis for this programme's continuous goal of broadening and deepening students' technical language and communication skills.

(2) The academic degree "Bachelor of Arts", abbreviated as "B.A.", or the academic degree "Bachelor of Science", abbreviated as "B.Sc.", shall be awarded for the successful completion of the bachelor's examination, dependent on the chosen study path outlined in Section 5 (4).

## **Section 3**

### **Entry requirements**

(1) The general entry requirements for bachelor's degree programmes are outlined in Section 4 RPO.

(2) A "related or comparable programme of study" within the meaning of Section 4 (6) RPO is defined as any undergraduate (bachelor's or German 'Diplom') degree programme at a university or university of applied sciences in Germany if that programme's content falls under the umbrellas of both engineering and communication studies in roughly equal measure.

(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). Generally, the following language tests and scores are accepted as valid proof:

– IELTS:	6.0 or higher
– TOEFL (iBT):	minimum 80
– TOEFL (PBT):	minimum 550
– TOEFL (CBT):	minimum 213

(4) Exempted from this language certificate requirement are applicants who have acquired English language abilities equivalent to level B2 over the course of earning their

*Non-binding English translation – only the German version published in the Official Notices of Rhine-Waal University of Applied Sciences is legally valid.*

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) for the subject.

#### **Section 4 Preparatory internship**

Students in this degree programme are required to complete an eight-week preparatory internship (within the meaning of Section 4 (3) RPO) outside of the university in a context relevant to the curriculum. The dean of the Faculty of Technology and Bionics shall decide whether to grant recognition for a completed preparatory internship.

#### **Section 5 Programme structure; volume of studies; progression of studies**

(1) This degree programme has a total volume of study of 145 credit hours [Semesterwochenstunden – SWS].

(2) In accordance with the framework outlined in Section 6 (5) RPO, the modules of this programme comprise a total sum of 210 credit points (hereinafter “CP”).

(3) Additional information about the structure and progression of the programme, as well as about the type, form and scope of modules, can be found in the study and examination schedule in the annex of these examination regulations. For additional information about a module’s qualification aims, content and most commonly offered mode of examination, please refer to the descriptions in the Handbook of Modules, which is available in the dean’s office for all students and staff to review.

(4) Over the course of their studies, students in this programme will select a path of study leading to one of the two bachelor’s degrees in Section 2 (2). From the fourth semester onwards students are not permitted to sit examinations unless they have submitted a formal decision with regard to sentence 1. Thus, students must submit – in writing and by no later than the start of the fourth semester – a declaration of their chosen study path for one of the two bachelor’s degrees specified in Section 2 (2). This decision will fix the remaining curriculum according to the chosen path. In order to be permitted to submit a declaration within the meaning of sentence 3, students must have acquired at least 30 CP in each of the two curricular focus areas (“Science, Technology, Engineering, Mathematics” (STEM) and “Communication” (COMM)) and successfully completed the compulsory Communication Clinics I and II.

#### **Section 5a Practical semester; study abroad semester**

(1) In accordance with Section 21 (4) sentence 4 RPO, the option of receiving faculty support in securing a work placement (Section 21 (4) sentence 1 RPO) as well as the option of undertaking an applied research project at the university instead of a work placement (Section 21 (4) sentences 2 and 3) are excluded for students of this programme.

(2) Work placements should generally be undertaken outside of Germany in an English-language context. In exceptional cases and on special request by the student, the examination board can authorise a work placement in Germany and/or in the context of a different language. In general, an “exceptional case” is considered a student who originally comes from a majority English-speaking country.

(3) Instead of a work placement, students in this degree programme also have the option of completing a study abroad semester (Section 22 RPO) at a university outside of Germany. The study abroad semester should also occur in an English-language context.

## **Section 6 Scope of examinations**

(1) The time allotted to students for a written examination is based on the CP value of the respective course unit(s). As a general rule, 30 minutes shall be allotted for every one CP, not to exceed two hours in total.

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

(3) An assignment, term paper or project should not exceed 30 DIN A4 pages in length (not including annexes).

## **Section 7 Scope and form of the bachelor’s thesis**

(1) As a rule, the bachelor’s thesis should be between 50 and 100 DIN A4 pages in length (not including annexes), with 12 point font size and 1.5 line spacing. The thesis may also be supplemented with other media, provided they are appropriate and helpful for the documentation of the thesis in accordance with the assigned task. In this case the thesis (not including annexes) may comprise less pages than the minimum requirement defined in sentence 1.

(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 delimitation by section, page numbers or other criteria that ensure distinct identification of each student’s separate contribution.

## **Section 8 Admission to the bachelor’s thesis and colloquium**

(1) In conjunction with the general prerequisites for admission to a bachelor’s thesis (Section 24 (1) RPO), candidates must show that they have acquired 175 CP.

(2) In conjunction with the general prerequisites for admission to a colloquium (Section 27 (2) RPO), candidates must show that they have acquired 207 CP.

**Section 9**  
**Credit points for the bachelor's thesis and colloquium**

- (1) Twelve CP shall be awarded for successfully passing the bachelor's thesis.
- (2) Three CP shall be awarded for successfully passing the colloquium.

**Section 10**  
**Conferment of the bachelor's degree**

A bachelor's degree specified in Section 2 (2) is officially conferred with the issuing of the bachelor's degree certificate (Section 30 (1) RPO).

**Section 11**  
**Entry into force**

These examination regulations entered into force on 28 April 2015. They shall also apply to those students who first matriculated in the winter semester 2012/2013 in the bachelor's degree programme "Journalism & Bionics" of the Faculty of Technology and Bionics of Rhine-Waal University of Applied Sciences.

## Annex I: Recommended study and examination schedule for Science Communication & Bionics B.A.

Code No.	Module Courses/Subjects	CH	Type						P/T	CP	1 WS	2 SS	3 WS	4 SS	5 WS	6 SS	7 WS
			L	SL	S	E	Pra	Pro									
	<b>History and Introduction (COMM I)</b>																
SCB_1.1	History of Science & Technology	2	1			1			P	2	2						
SCB_1.2	Introduction to Science Communication: Theory & Ethics	3	3						P	3	3						
	<b>International Media and Institutions (COMM II)</b>																
SCB_2.1	Comparative International Media Studies	4	3			1			P	4	4						
SCB_2.2	Communicating for Institutions: Marketing, PR, Events, Exhibitions	4	2			2			P	3	4						
SCB_3	<b>Communication Clinic I</b> (Focus: Fundamental Research)	3				3			T	3	3						
	<b>Bionics I (STEM I)</b>																
SCB_4	Bionics I	4	4						P	5	4						
	<b>Physics (STEM II)</b>																
SCB_5	Physics of Locomotion	4	2			1	1		P	5	4						
	<b>Chemistry and Maths (STEM III)</b>																
SCB_6.1	Basics of Chemistry	4	2			1	1		T	3	4						
SCB_6.2	Mathematics I	4	2			2			T	4	4						
	<b>Science in Society and Political Communication (COMM III)</b>																
SCB_7.1	Political Communication: Systems, Policies, Public Affairs	2	2						P	3		2					
SCB_7.2	Public Engagement, Scientific Citizenship, Citizen Science	2	2						P	2		2					
	<b>Science &amp; Innovation Journalism, Freelancing (COMM IV)</b>																
SCB_8.1	Print & Web, TV & Radio	3	1			2			T	2		3					
SCB_8.2	Interactive & Social Media, Data-driven Journalism	5	1			2		2	P	4		5					
SCB_8.3	Freelance Journalism: Pitch, Sell, Edit	2	1			1			P	2		2					
SCB_9	<b>Communication Project I</b> (Focus: Bionics)	5						5	T	4		5					
	<b>Mathematics II (STEM IV)</b>																
SCB_10	Mathematics II	4	2			2			T	5		4					
	<b>Biomedical Science &amp; Physics of Sensing (STEM V)</b>																

*Non-binding English translation – only the German version published in the Official Notices of Rhine-Waal University of Applied Sciences is legally valid.*

SCB_11.1	Biomedical Science and Engineering	2	2					T	3		2						
SCB_11.2	Physics of Sensing	4	2			1	1	P	5		4						
	<b>Risk Communication and Legal Frameworks (COMM V)</b>																
SCB_12.1	Risk & Crisis Communication	3	2			1		P	4			3					
SCB_12.2	Legal Frameworks of Media and PR	1	1					P	1			1					
	<b>New Formats and Entrepreneurship (COMM VI)</b>																
SCB_13.1	Innovative Online Formats, Apps, Serious Games	3	1			2		P	4			3					
SCB_13.2	Entrepreneurship, Entrepreneurial Journalism, Self-marketing	4	1			3		T	5			4					
SCB_14	<b>Communication Clinic II</b> (Focus: Applied Research)	4				4		T	4			4					
	<b>Statistics in Communication Practise (COMM VII)</b>																
SCB_15	Statistics in Communication Practise	4	2			2		P	4			4					
	<b>Bionic Engineering (STEM VI)</b>																
SCB_16.1	Bionics II	4	2				2	P	5			4					
SCB_16.2	Introduction to Engineering Design	3	2			1		T	3			3					
	<b>Governance and Behaviour (SWITCH I)</b>																
SCB_EC.C1	Corporate Communication Management, Governance & Controlling	4	2			2		P	3				4				
	<b>Empirical Research and Economies (COMM VIII)</b>																
SCB_17.1	Empirical Research Methodologies for Science Communication	4	1			3		P	6			4					
SCB_17.2	Global Economies	1	1					P	2			1					
SCB_18	<b>Communication Clinic III</b> (Focus: Bionics)	3				3		T	4				3				
	<b>STEM VII (Bionics and Biomechanics)</b>																
SCB_19.1	Bionics III (Zoological Physics)	6	2			2	2	P	5				6				
SCB_19.2	Fundamentals of Biomechanics	3	2			1		P	4				3				
	<b>Elective Courses I *</b>							P	6				6				
	<b>Sustainable Futures (COMM IX)</b>																

*Non-binding English translation – only the German version published in the Official Notices of Rhine-Waal University of Applied Sciences is legally valid.*

SCB_20.1	Sustainability in Science and Industry & Corporate Social Responsibility	4	3			1		P	4					4		
SCB_20.2	Communicating Ethical, Legal, and Social Issues in Science (ELSI)	2	1			1		P	3					2		
	<b>Foresight and Conservation (SWITCH II)</b>															
SCB_EC_C6	Technology Assessment & Corporate Foresight, Storytelling & Science Fiction	4	2			2		P	5					4		
<b>SCB_21</b>	<b>Communication Project II (Focus: Engineering)</b>	<b>4</b>					<b>4</b>	<b>T</b>	<b>6</b>					<b>4</b>		
	<b>Materials and Nature (STEM VIII)</b>															
SCB_22.1	Bionics of Surfaces	3	2			1		P	3					3		
SCB_22.2	Ecology of Materials	2	2					P	2					2		
	<b>Elective Courses II **</b>	<b>6</b>						<b>P</b>	<b>8</b>					<b>8</b>		
SCB_23	<b>Semester Abroad (30 CP as a guest student) or Internship abroad</b>								30							
	<b>Final Semester</b>															
SCB_24	Practical Science Communication Skills Application							T	6							
SCB_25	Workshop: Scientific Methods							T	6							
SCB_26	Bachelor Thesis (3 months)							P	12							
SCB_27	Colloquium							P	3							
	<i>Sum CH</i>									32	29	26	27	27		
	<b>Sum CP</b>								<b>210</b>	<b>32</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>31</b>	<b>30</b>	<b>27</b>
	<b>Elective Courses I ***/****</b>															
SCB_EC_C2	Communication Design	3				3		P	3					3		
SCB_EC_C3	Media Production Technologies	3				3		P	3					3		
SCB_EC_C4	Data Visualisation	3				3		P	3					3		
SCB_EC_C5	Any other "communication" topic with 3 CP chosen from HSRW Bachelor degrees *	3				3		P	3					3		
	<b>Elective Courses II ***/****</b>	<b>3</b>				<b>3</b>		<b>P</b>	<b>4</b>					<b>3</b>		
SCB_EC_C7	Communicating Social Science and Humanities	3				3		P	4					3		

*Non-binding English translation – only the German version published in the Official Notices of Rhine-Waal University of Applied Sciences is legally valid.*



SCB_EC_C8	Intercultural Communication	3				3			P	4					3		
SCB_EC_C9	Moderation Techniques	3				3			P	4					3		
SCB_EC_C10	Any other "communication" topic with 4 CP chosen from HSRW Bachelor degrees **	3				3			P	4					3		

\* As elective subjects, 3 CP can be chosen with the consent of the Faculty Examination Board from any bachelor study programme at Rhine-Waal University of Applied Sciences.

\*\* As elective subjects, 4 CP can be chosen with the consent of the Faculty Examination Board from any bachelor study programme at Rhine-Waal University of Applied Sciences.

\*\*\* The faculty reserves the right to offer additional elective subjects according to new developments in the various fields of bionics/biomimetics and communication.

\*\*\*\* The faculty reserves the right to set a minimum number of participants for offering an elective subject.

\*\*\*\* The possibility of obtaining the required number of elective credit points remains unaffected.

## Annex II: Recommended study and examination schedule for Science Communication & Bionics B.Sc.

Code No.	Module Courses/Subjects	CH	Typ						P/T	CP	1 WS	2 SS	3 WS	4 SS	5 WS	6 SS	7 WS
			L	SL	S	E	Pra	Pro									
	<b>History and Introduction (COMM I)</b>																
SCB_1.1	History of Science & Technology	2	1			1			P	2	2						
SCB_1.2	Introduction to Science Communication: Theory & Ethics	3	3						P	3	3						
	<b>International Media and Institutions (COMM II)</b>																
SCB_2.1	Comparative International Media Studies	4	3			1			P	4	4						
SCB_2.2	Communicating for Institutions: Marketing, PR, Events, Exhibitions	4	2			2			P	3	4						
SCB_3	<b>Communication Clinic I</b> (Focus: Fundamental Research)	3				3			T	3	3						
	<b>Bionics I (STEM I)</b>																
SCB_4	Bionics I	4	4						P	5	4						
	<b>Physics (STEM II)</b>																
SCB_5	Physics of Locomotion	4	2			1	1		P	5	4						
	<b>Chemistry and Maths (STEM III)</b>																
SCB_6.1	Basics of Chemistry	4	2			1	1		T	3	4						
SCB_6.2	Mathematics I	4	2			2			T	4	4						
	<b>Science in Society and Political Communication (COMM III)</b>																
SCB_7.1	Political Communication: Systems, Policies, Public Affairs	2	2						P	3		2					
SCB_7.2	Public Engagement, Scientific Citizenship, Citizen Science	2	2						P	2		2					
	<b>Science &amp; Innovation Journalism, Freelancing (COMM IV)</b>																
SCB_8.1	Print & Web, TV & Radio	3	1			2			T	2		3					
SCB_8.2	Interactive & Social Media, Data-driven Journalism	5	1			2		2	P	4		5					
SCB_8.3	Freelance Journalism: Pitch, Sell, Edit	2	1			1			P	2		2					
SCB_9	<b>Communication Project I</b> (Focus: Bionics)	5						5	T	4		5					
	<b>Mathematics II (STEM IV)</b>																
SCB_10	Mathematics II	4	2			2			T	5		4					
	<b>Biomedical Science &amp; Physics of Sensing (STEM V)</b>																

*Non-binding English translation – only the German version published in the Official Notices of Rhine-Waal University of Applied Sciences is legally valid.*

SCB_11.1	Biomedical Science and Engineering	2	2					T	3		2					
SCB_11.2	Physics of Sensing	4	2			1	1	P	5		4					
	<b>Risk Communication and Legal Frameworks (COMM V)</b>															
SCB_12.1	Risk & Crisis Communication	3	2			1		P	4			3				
SCB_12.2	Legal Frameworks of Media and PR	1	1					P	1			1				
	<b>New Formats and Entrepreneurship (COMM VI)</b>															
SCB_13.1	Innovative Online Formats, Apps, Serious Games	3	1			2		P	4			3				
SCB_13.2	Entrepreneurship, Entrepreneurial Journalism, Self-marketing	4	1			3		T	5			4				
SCB_14	<b>Communication Clinic II</b> (Focus: Applied Research)	4				4		T	4			4				
	<b>Statistics in Communication Practise (COMM VII)</b>															
SCB_15	Statistics in Communication Practise	4	2			2		P	4			4				
	<b>Bionic Engineering (STEM VI)</b>															
SCB_16.1	Bionics II	4	2				2	P	5			4				
SCB_16.2	Introduction to Engineering Design	3	2			1		T	3			3				
	<b>Governance and Behaviour (SWITCH I)</b>															
SCB_EC.S1	Introduction to Behavioural Sciences	4	2			2		P	3				4			
	<b>Empirical Research and Economies (COMM VIII)</b>															
SCB_17.1	Empirical Research Methodologies for Science Communication	4	1			3		P	6				4			
SCB_17.2	Global Economies	1	1					P	2				1			
SCB_18	<b>Communication Clinic III</b> (Focus: Bionics)	3				3		T	4				3			
	<b>STEM VII (Bionics and Biomechanics)</b>															
SCB_19.1	Bionics III (Zoological Physics)	6	2			2	2	P	5				6			
SCB_19.2	Fundamentals of Biomechanics	3	2			1		P	4				3			
	<b>Elective Courses I *</b>							P	6				6			
	<b>Sustainable Futures (COMM IX)</b>															
SCB_20.1	Sustainability in Science and Industry & Corporate Social Responsibility	4	3			1		P	4					4		
SCB_20.2	Communicating Ethical, Legal, and Social Issues in Science (ELSI)	2	1				1	P	3					2		
	<b>Foresight and Conservation (SWITCH II)</b>															

*Non-binding English translation – only the German version published in the Official Notices of Rhine-Waal University of Applied Sciences is legally valid.*

SCB_EC_S6	Ecology and Conservation	4	2			2			P	5					4			
<b>SCB_21</b>	<b>Communication Project II (Focus: Engineering)</b>	<b>4</b>						<b>4</b>	<b>T</b>	<b>6</b>					<b>4</b>			
	<b>Materials and Nature (STEM VIII)</b>																	
SCB_22.1	Bionics of Surfaces	3	2				1		P	3					3			
SCB_22.2	Ecology of Materials	2	2						P	2					2			
	<b>Elective Courses II **</b>	<b>6</b>							<b>P</b>	<b>8</b>					<b>8</b>			
SCB_23	<b>Semester Abroad (30 CP as a guest student) or Internship abroad</b>									30								
	<b>Final Semester</b>																	
SCB_24	Practical Science Communication Skills Application								T	6								
SCB_25	Workshop: Scientific Methods								T	6								
SCB_26	Bachelor Thesis (3 months)								P	12								
SCB_27	Colloquium								P	3								
	<i>Sum CH</i>											32	29	26	23	23		
	<b>Sum CP</b>									<b>202</b>		<b>32</b>	<b>30</b>	<b>30</b>	<b>27</b>	<b>26</b>	<b>30</b>	<b>27</b>
	<b>Elective Courses I ***/****</b>																	
SCB_EC_S2	Fundamentals of Biotechnology	3				3			P	3					3			
SCB_EC_S3	Natural History and Bionic Inspiration	3				3			P	3					3			
SCB_EC_S4	Theory in Bionic Engineering	3				3			P	3					3			
SCB_EC_S5	Any other "science/engineering" topic with 3 CP chosen from HSRW Bachelor degrees *								P									
	<b>Elective Courses II ***/****</b>	<b>3</b>				<b>3</b>			<b>P</b>	<b>4</b>					<b>3</b>			
SCB_EC_S7	Fundamentals of Electrical Engineering	3				3			P	4					3			
SCB_EC_S8	Materials in Biomimetics	3				3			P	4					3			
SCB_EC_S9	Biothermodynamics and Architecture	3				3			P	4					3			
SCB_EC_S10	Any other "science/engineering" topic with 4 CP chosen from HSRW Bachelor degrees **								P									

*Non-binding English translation – only the German version published in the Official Notices of Rhine-Waal University of Applied Sciences is legally valid.*

\* As elective subjects, 3 CP can be chosen with the consent of the Faculty Examination Board from any bachelor study programme at Rhine-Waal University of Applied Sciences.

\*\* As elective subjects, 4 CP can be chosen with the consent of the Faculty Examination Board from any bachelor study programme at Rhine-Waal University of Applied Sciences.

\*\*\* The faculty reserves the right to offer additional elective subjects according to new developments in the various fields of bionics/biomimetics and communication.

\*\*\*\* The faculty reserves the right to determine a minimum number of participants for offering an elective subject.

\*\*\*\* The possibility of obtaining the required number of elective credit points remains unaffected.