

**Examination Regulations (Rules) of the  
Faculty of Mathematics and Natural Sciences at  
Christian-Albrechts-Universität zu Kiel (Kiel University)  
for students of “Biological Oceanography”,  
leading to a Master of Science Degree (M.Sc.)  
(Biological Oceanography Examination Regulations (single subject))  
of 27 November 2015**

Published on 28 December 2015 (NBI. HS MSGWG Schl.-H. p. 156), amended by statute of 4 February 2016, published on 25 February 2016 (NBI. HS MSGWG Schl.-H. p. 7), amended by statute of 19 May 2016, published on 14 July 2016 (NBI. HS MSGWG Schl.-H. p. 56), amended by statute of 16 June 2016, published on 14 July 2016 (NBI. HS MSGWG Schl.-H. p. 56), amended by statute of 24 November 2016, published on 20 December 2016 (NBI. HS MSGWG Schl.-H. p. 101), amended by statute of 2 February 2017, published on 16 February 2017 (NBI. HS MSGWG Schl.-H. p. 5), amended by statute of 10 January 2018, published on 15 February 2018 (NBI. HS MBWK Schl.-H. p. 4), amended by statute of 21 November 2018, published on 21 December 2018 (NBI. HS MBWK Schl.-H. p. 77)

[Non-official publication]

Based on Section 52 (1) Sentence 1 of the Schleswig-Holstein Higher Education Act (HSG) in the version published on 28 February 2007 (GVObI. Schleswig-Holstein, page 184), after a resolution was passed by the Convention of the Faculty of Mathematics and Natural Sciences of 24 June 2015 the following Rules were issued:

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## **§ 1**

### **Scope of application**

- (1) These Examination Regulations in conjunction with the Examination Procedure Regulations (Rules) of Kiel University for students of Bachelor's and Master's Degree Programmes (PVO) apply to the teaching and assessment of the subject "Biological Oceanography" at Kiel University.
- (2) They apply to
  1. all modules which are exclusively part of the degree programmes regulated by these Examination Regulations,
  2. all modules which are part of the degree programmes regulated by these Examination Regulations, and which are simultaneously exported to other degree programmes;
  3. all modules which are exclusively part of other degree programmes as exported modules.
- (3) When not stated otherwise in these Examination Regulations, admission to modules offered by other faculties or other institutes of the same faculty and the respective module examinations are subject to the examination regulations of the respective faculties or institutes.

## **§ 2**

### **Objective of the degree programme, purpose of the examination**

- (1) Students should obtain a basic understanding of the structure and function of marine ecosystems, along with the human influences on these systems; a broad, interdisciplinary overview of the current state of knowledge and methods used in Biological Oceanography; as well as an advanced, scientific-methodical qualification for independently processing complex issues within this area of research.
- (2) The Master's degree programme "Biological Oceanography" facilitates to obtain a more advanced degree qualifying for a professional career. The final examination ascertains whether the candidate has obtained an advanced scientific-methodological qualification for independent research in the Biological Oceanography field.

## **§ 3**

### **Academic title**

The student is awarded the degree of Master of Science (M.Sc.) if he or she has passed the Master's examination at least with the grade 'sufficient'.

## **§ 4**

### **Admission to the Master's degree programme**

- (1) Anyone who has completed a Bachelor's degree programme in either Biology, Natural Sciences or Environmental Sciences, after a standard period of study of at least three years at a German or comparable foreign institution of higher education can be admitted to the Master's degree programme. The candidate must have obtained at least 180 ECTS credits or passed a comparable final examination. The candidate must also have obtained at least 60 ECTS credits from the field of Biology and prove a special aptitude in accordance with (2).
- (2) A special aptitude can be proven by:
  1. A qualified university degree in accordance with (1) 1, with a minimum grade of 2.0. Applicants who have not achieved the minimum grade of 2.0, but have achieved a minimum grade of 2.5 can still be admitted to the degree programme on account of their special interest in and commitment to marine science issues. This can be proven by, for example, a Bachelor's thesis with a focus on a marine topic, etc. Also:

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2. A special motivation. This can be proven in a motivational letter, submitted with the application for the degree programme. It must include:

- a) the specific talents and interests on account of which the applicant considers him or herself particularly suited to this degree programme.
- b) to what extent he or she possesses sufficient prior knowledge of the scientific basics of the Master's degree programme, obtained from a first degree programme and/or previous professional activities, and
- c) proof of a good knowledge of the English language in accordance with the study qualification rules (Studienqualifikationssatzung).

(3) The Examination Board for Biological Oceanography decides whether the admission requirements are met.

## **§ 5**

### **Structure of curriculum**

The standard period of study for the Master's degree programme is four semesters. The scope of the degree programme for the first three semesters (each) encompasses approximately 25 Semesterwochenstunden (SWS) (weekly 45-minute teaching units for the duration of one semester of about 12 weeks), for which the student must be present (contact hours), and approximately 600 hours independent study. A total of 120 ECTS credits are to be obtained, including 30 ECTS credits for the Master's thesis.

## **§ 6**

### **Academic year**

- (1) The academic year applies to this course. Courses for both new students and returning students from odd-numbered semesters are only offered in a winter semester.
- (2) Registrations during odd-numbered semesters are only possible for a winter semester. Registrations during even-numbered semesters are only possible for a summer semester.

## **§ 7**

### **Teaching and examination language**

Lectures and examinations will be held in English.

## **§ 8**

### **Examination Board**

Contrary to Section 3 (2) Sentence 1 of the Examinations Regulations (PVO), the Examination Board consists of four members who are Higher Education Institute Lecturers, one member from the area of scientific services and one member from the student body.

## **§ 9**

### **Module examinations and module grades**

- (1) The type and number of examinations required as part of the modules can be found in the Annex.
- (2) Examinations can be: written examinations, written reports, oral examinations, oral presentations, term papers, tests, multiple choice examinations, take home examinations, protocols, presentations, study group descriptions, reports on a practical or work experience, practical demonstrations, oral presentations with written reports, essays, reports, summaries, draft practicals and portfolios. The individual details can be found in the annex.

- (3) Prerequisites may be required for examinations. Examinations which require prerequisites are marked as such in the annex. Examination prerequisites can be: written reports, oral examinations, oral presentations, term papers, tests, multiple choice examinations, take home examinations, protocols, presentations, study group descriptions, reports on a practical or work experience, practical demonstrations, oral presentations with written reports, essays, reports, summaries, draft practicals and portfolios. Individual details will be suitably announced at the start of the respective course.
- (4) A written examination lasts *between 30 minutes and 5 hours*.
- (5) If a module examination consists of several examinations, the module grade will be calculated using the weighted average of the individual grades obtained. The weighting is performed in relation to the ECTS credits allocated to the course within which the examination was taken.
- (6) If a examination is jointly set by several examiners, they also jointly determine the grade. The Examination Board will decide in the event that no agreement is reached.

## **§ 10**

### **Further prerequisites for admission to examinations**

- (1) If a module contains work experience, practical exercises, excursions or one of the seminars listed in (2), admission to the examination requires regular attendance to these lectures. A maximum of three course dates may be missed without giving reasons for the non-attendance. If students are absent from additional course dates due to illness (hereby a maximum of 40% of all dates, however), those parts of the course which were missed can be replaced by a written draft or an oral colloquium.

- (2) **MNF-bioc-231:**

Attendance to the seminar in the MNF-bioc-231 module is mandatory. Presentations are made by scientists who have been invited to speak on current research topics. The aim is to teach students to critically evaluate current research, participate in scientific discussions and come into contact with new research topics and methods. They also experience the importance of an interdisciplinary approach within Marine Sciences. Attendance is therefore crucial.

**MNF-bioc-232:**

In the seminar for MNF-bioc-232 - Current Topics Marine Ecology, every student must produce a written critical review on a current publication from this field for analysis. The short group presentations and the critical discussions during lectures that take place as part of the seminar are an important requirement for producing a justified, critical approach for giving opinions on scientific publications. Students will only achieve this by regularly participating in the seminars.

**MNF-bioc-233:**

The seminar in the MNF-bioc-233 module goes far beyond the usual requirements of a seminar in its structure. It requires oral seminar papers to be completed by the students, the joint reading, analysis and interpretation of sources, as well as holding, structuring and leading scientific discussions between the students themselves and with lecturers. The seminar is not only designed for the lecturers to pass on the specialist scientific knowledge, instead the main goal is for the students to develop analytical and rhetorical skills, apply presentation techniques, develop teamwork skills and develop appropriate issues in the sense of scientific discourse, etc. In addition, it is also designed to prepare the excursion, including the necessary safety instructions and rules on what to do when working in the laboratory for the stays on sea-based experimental platforms and ships during the excursion.

**MNF-bioc-331:**

In the seminar for the MNF-bioc-331 module - Current Topics- every student (approx. 12 to 14 participants) must speak about or present a research proposal on a biogeochemical topic. In doing so, the students should practise critically analysing the presented research

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topics and evaluating their contents and form. Open discussion about the presented topics is crucial for this (see the module description). This course is therefore not primarily designed for the lecturers to pass on the specialist scientific knowledge, but to independently prepare and present logical and well-founded scientific seminar papers, as well as to hold discussions with fellow students and lecturers where the students represent their own theses in a sound, substantiated manner. The students can therefore not achieve the qualification objective without regular, active participation. Acquisition of the skills depends on attendance by the other participants.

### **MNF-bioc-334:**

The Current Topics seminar in the MNF-bioc-334 module is a literature seminar embedded in the context of three lectures. A core task is for the students to conduct oral seminar papers. These should serve as joint reading, analysis and interpretation of original scientific literature. The students should also learn how to hold, structure and lead scientific discussions amongst themselves and with lecturers. This is simply not possible if the group is not present. This course is therefore not only designed for the lecturers to pass on the specialist scientific knowledge, instead the main goal is for the students to develop analytical and rhetorical skills, apply presentation techniques, develop teamwork skills and develop appropriate issues in the sense of scientific discourse.

### **MNF-bioc-266:**

The seminar in the MNF-bioc-266 module is an accompanying literature seminar, which contains oral seminar papers to be completed by the students, requiring joint analyses and source interpretation. It should also pass on the skills students need in order to hold a scientific discussion among themselves and with lecturers. The seminar is therefore not only designed for the lecturers to pass on the specialist scientific knowledge, instead the main goal is for the students to develop analytical and rhetorical skills, apply presentation techniques, develop teamwork skills and develop appropriate issues in the sense of scientific discourse, etc. In addition, the seminar also includes a preliminary discussion about the excursion to the Alfred Wegener Institute, Helmholtz centre for polar and marine research in Bremerhaven, involving the safety regulations when entering technical rooms and the research ice breaker, the Polarstern.

- (3) Individual details will be suitably announced at the start of the respective course.

## § 11

### Master's thesis

- (1) Any candidate who has obtained at least 70 ECTS credits from module examinations in compulsory and optional modules may be admitted to the Master's thesis.
- (2) When applying for admission to the Master's thesis, the examination candidate may propose examiners and a topic for the thesis. This does not give rise to any claims.
- (3) The period from when the topic is issued until the Master's thesis is submitted is six months. This deadline may not be extended by more than three months, in accordance with Section 11 (4) Sentence 5 of the PVO for Bachelor's and Master's degree programmes.
- (4) The topic of the Master's thesis may be handed back only once and only within the first month of the preparation period.
- (5) The results of the Master's thesis must be defended orally as part of a scientific presentation and discussion. This part of the examination must be graded by the examiners in a joint vote.
- (6) The written Master's thesis will be graded by both examiners within six weeks of submission.
- (7) The grade for the Master's thesis is calculated as follows: 75% comes from the grade for the written thesis and 25% comes from the grade for the oral presentation of its content.

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- (8) The Master's thesis must be written in English. An application can be made to the Examination Committee for the Master's thesis to be written in German.
- (9) The Master's thesis is to be submitted to the responsible Examination Office in the form of two hard copies and additionally one copy in a form suitable for electronic data processing.

**§ 12**

**Calculation of the final grade**

- (1) When calculating the final grade, the module grades (marked in the attached Programme Schedule) are weighted by ECTS credits.
- (2) The grade for the Master's thesis is weighted double.

**§ 13**

**Entry into force**

- (1) These Examination Regulations enter into force on 31. March 2016.
- (2) At the same time the Examination Regulations (Rules) of the Faculty of Mathematics and Natural Sciences at Christian-Albrechts-Universität zu Kiel (Kiel University) for students of "Biological Oceanography", leading to a Master of Science Degree (M.Sc.) (Biological Oceanography Examination Regulations (single subject)) of 29 November 2007 cease to be in force.
- (3) The Examination Board decides regarding special cases of hardship for which the student is not responsible.

The University Board at Christian-Albrechts-Universität zu Kiel granted its approval in accordance with Article 1 § 52 (1) Clause 1 in conjunction with Article 2 § 1 (4) of the Schleswig - Holstein Higher Education Act in its letter dated 28 November 2007.

Kiel, 27 November 2015

Prof. Dr. Wolfgang J. Duschl  
Dean of the Faculty of Mathematics and Natural Sciences  
Christian-Albrechts-Universität zu Kiel

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**Article 2 of the amended Examination Regulations of 10.01.2018:**

- (1) These Examination Regulations enter into force as of 1 October 2018.
- (2) Module examinations which have been completed and passed in full by the date these Examination Regulations enter into force will remain valid.
- (3) If students have already passed one of the examinations in a module, then they complete this module according to the valid regulations which apply until these amended Examination Regulations come into force. This also applies if one of the examinations is failed or deemed failed.
- (4) Upon application, the Examination Board decides regarding special cases of hardship for which the student is not responsible.

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**Biological Oceanography**  
**Order of courses for the Master of Science in „Biological Oceanography“**

	Module	Name	Teaching method	SWS	C/O	Requirement	Exam	ECTS	
								Sem.	Year
<b>First Semester</b>	<u>MNF-bioc-101</u>	Introduction to Biological Oceanography	L	3	C		Ex 100%	6	
	<u>MNF-bioc-102</u>	Practical Courses in Biological Oceanography	P/E	12/1	C		Ex 100%	10	
	<u>MNF-bioc-103-01</u>	Introduction to Chemical Oceanography	L/E	1/3	C		WE 100%*	5	
	<u>MNF-bioc-110-01</u>	Doing Science	L/pE	1/2	C		H + OP#	6	
	<u>MNF-geol-101</u>	Introduction to Marine Geology	L	2	C		Ex 100%	3	
				<b>Σ 25</b>				<b>Σ 30</b>	
<b>Second Semester</b>	<u>MNF-bioc-201-01</u>	Advanced Studies in Biological Oceanography	L	3	C	MNF-bioc-101	WE (100%)	5	
	<u>MNF-bioc-202</u>	Advanced Practical Course in Biological Oceanography	P/E	6/2	C	MNF-bioc-102	P or OP (100%)	5	
	<u>MNF-bioc-220-01</u>	Biological Modelling and Biostatistics	2 (L/pE)	2 (1/1)	C		WE 100%*	5	
	<u>MNF-ozgr-151</u>	Introduction to Physical Oceanography	L	3	C		Ex 100%	5	
		Choose 1 of the following 231–233						5	
	<u>MNF-bioc-231</u>	Current Topics in Marine Biogeochemistry I (1)	L/S(a)	2/1	O	MNF-bioc-101	Ex 100%	(5)	
	<u>MNF-bioc-232</u>	Current Topics in Marine Ecology I (1)	L/S(a)	2/2	O	MNF-bioc-101	OP 100%	(5)	
	<u>MNF-bioc-233</u>	Current Topics in Fish Ecology and Aquaculture (1)	Ex/E/S(a)	3/3/2	O	MNF-bioc-101	P 100%	(5)	
		Choose 5 ECTS from any other subject						5	
				<b>Σ 21-26+x</b>				<b>Σ 30</b>	<b>Σ 60</b>
<b>Third Semester</b> <b>Mobility Window</b>	<u>MNF-bioc-301</u>	Multidisciplinary Oceanographic Research	P/S/Ex/E	4/1/2/1	C	All compulsory MNF-bioc-courses of 1. and 2. semester	written thesis proposal* 100%	10	
	<u>MNF-bioc-310</u>	Summer School or Internship	P or Int	7	C		P 100%	5	
		Choose 2 of the following:						10	
	<u>MNF-bioc-331</u>	Current Topics in Marine Biogeochemistry II (2)	L/S(a)	3/2	O	MNF-bioc- 201	OP 100%	(5)	
	<u>MNF-bioc-332</u>	Current Topics in Marine Ecology II (2)	L/S	3/2	O	MNF-bioc-101, MNF-bioc-102	OP 100%	(5)	
	<u>MNF-bioc-334-01</u>	Current Topics in Fish Ecology (2)	L/L/S(a)	1/2/2	O	MNF-bioc-201	WE + OP#	(5)	
	<u>MNF-bioc-335</u>	Fundamentals and Current Topics in Biogeochemical Modelling	L/S	2/2	O	MNF-bioc -220	OP 100%	(5)	
		Choose 5 ECTS from any other subject						5	
				<b>Σ 23+x</b>				<b>Σ 30</b>	
<b>Fourth Semester</b>	<u>MNF-bioc-401</u>	Master's Thesis with Thesis Defence		30	C	MNF-bioc- 301	Thesis + Defense (75% + 25%)	30	
								<b>Σ 30</b>	<b>Σ 60</b>

**Explanations:**

Module:	Module number
Name:	Module name
Form:	Teaching form: L: Lectures, P: Practical, E: Exercises, pE: practical Exercises (compulsory attendance), S: Seminar, S(a): Seminar (compulsory attendance), Ex: Excursion, C: Colloquia, T: Tutorial, Int: Internship
C / CE:	Status of the course (C: Compulsory, CE: Compulsory elective)
SWS:	Weeks per semester
Prerequisite:	Conditions for entry
Exam:	Form of exam and grading WE: Written Exam, OE: Oral Exam, P: Protocol, OP: Oral Presentation, Ma: Manuscript, E: Exercises, H: Homework X% = graded exam with X% of module mark, (p/f) = pass/fail
CP:	Credit Points

The weighing is accordingly to the credit points.

\* Passing the exam prerequisite (details will be provided at the beginning of the respective course) is required to take part in the module exam.

# Composed exam

**The optional modules can be found in the appendix.**



**Appendix**  
(not part of the Rules)

Date: 09.05.2018

**Optional modules in the Biological Oceanography Master of Science (this list is not exhaustive).**

**Other modules from the entire range at Kiel University can be used in the optional module section.**

Not every optional module is offered each semester;

The selection can vary from semester to semester (we recommend speaking to the Examination Board and the lecturers).

**Examples of shifting optional courses for the Master of Science in "Biological Oceanography"**

	Module	Name	Form	SWS	Prerequisite	Exam	CP
Summer Semester	<u>MNF-bioc-250</u>	Element cycles in the ocean	L	2		OE 100%	3
	<u>MNF-bioc-251</u>	Biogeochemistry of Marine Sediments I	L	2		Ma 100%	5
	<u>MNF-bioc-253</u>	How to Write and Publish a Scientific Paper	S	1		H pass/fail	2
	<u>MNF-bioc-255</u>	Mechanisms of biomineralization	S	2		OP 100%	3
	<u>MNF-bioc-260</u>	Marine biodiscovery and biotechnology	P	5		OP 100%	5
	<u>MNF-bioc-262</u>	Trophodynamic Interactions	P	3		Ma 100%	5
	<u>MNF-bioc-264</u>	Sea Bird Ecology	P	4		WE 100%	5
	<u>MNF-bioc-266</u>	Advanced course in Polar Ecology	L/S(a)/Ex	2/1/1		WE 50% OP 50%	5
	<u>MNF-bioc-267</u>	Identification and taxonomy of marine invertebrates	L/pE/Ex	1/3/1		P 100%	5
	<u>MNF-bioc-270</u>	Marine Population Genomics II	L/S	2/1		P 100%	5
	<u>MNF-bioc-271</u>	New aspects of meteorology and oceanography: Carbon cycling in a changing climate	L/S/E	1/1/1		OP 100%	5
	<u>MNF-bioc-272</u>	New Developments in Marine Microbiology I	S	2		OP 100%	2
	<u>MNF-bioc-274</u>	New Trends in Marine Biodiscovery	S	2		OP 100%	2
	<u>MNF-bioc-275</u>	Invasion Ecology	L/S	1/1		OP 100%	3
	<u>MNF-bioc-276</u>	Marine Food Webs – Research Reports II	S	2		OP 100%	2
<u>MNF-bioc-277</u>	Air-Sea-Exchange	L/S	2/1		OP pass/fail	5	
<u>MNF-bioc-279-01a</u>	Geomicrobiology: accessing the hidden uncultured microbial majority in seafloor habitats	L/S/P	1/1/2		OP 100%	5	

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	Module	Name	Form	SWS	Prerequisite	Exam	CP
<b>Winter Semester</b>	<u>MNF-bioc-341</u>	Advanced Biological Modelling	L/E	2/2	MNF-bioc-220	WE 100%	5
	<u>MNF-bioc-342</u>	Current Topics in Biogeochemical Modelling	S/L	2/2	MNF-bioc-220	OP 100%	5
	<u>MNF-bioc-343-01</u>	Current Topics in Benthic Ecology	L/S	1/1		OP pass/fail	5
	<u>MNF-bioc-348</u>	Introduction to Metabolomics	Ex/ E/S	2 weeks		P 100%	5
	<u>MNF-bioc-350</u>	Climate-relevant trace gases in the ocean - Klimarelevante Spurengase im Ozean	L	2		OE 100%	3
	<u>MNF-bioc-356</u>	Biogeochemistry of Marine Sediments II	L	1	MNF-bioc-251 or equivalent	WE 100%	2
	<u>MNF-bioc-357</u>	How to make and keep a habitable planet - biogeochemistry - climate feedbacks and astrobiology	L/E	2/1		WE 100%	5
	<u>MNF-bioc-358</u>	Phytoplankton: from genome to ecology	L	2		WE 100%	2
	<u>MNF-bioc-359</u>	Modern aspects of meteorology and oceanography - Carbon cycling in a changing climate	L	3		OP 100%	5
	<u>MNF-bioc-361</u>	Marine Animal Physiology and Functional Morphology	L S P	2 1 3	A bachelor's degree in a biological discipline.	WE 50% OP 50%	8
	<u>MNF-bioc-365</u>	Mechanisms of biomineralization II	S	2		OP 100%	3
	<u>MNF-bioc-372</u>	New Developments in Marine Microbiology II	S	2		OP 100%	2
	<u>MNF-bioc-374</u>	New Trends in Marine Biotechnology	S	2		OP 100%	2
	<u>MNF-bioc-376</u>	Marine Food Webs – Research Reports I	S	2		OP 100%	2
	<u>MNF-bioc-379-01a</u>	Geomicrobiology: from sediments to bacteria: turnover rates, enzyme activities and genetics	L/S/P	1/1/2		OP 100%	5
<u>MNF-ozgr-152</u>	Advanced Physical Oceanography for Minors	L/E	2/2	MNF-ozgr-151	WE 100%	5	

**Explanations:**

Module: Module number  
 Name: Module name  
 Form: Teaching form: L: Lectures, P: Practical, E: Exercises, pE: practical Exercises (compulsory attendance), S: Seminar, S(a):Seminar (compulsory attendance), Ex: Excursion, C: Colloquia, T: Tutorial, Int: Internship  
 C / CE: Status of the course (C: Compulsory, CE: Compulsory elective)  
 SWS: Weeks per semester  
 Prerequisite: Conditions for entry  
 Exam: Form of exam and grading  
 WE: Written Exam, OE: Oral Exam, P: Protocol, OP: Oral Presentation,  
 Ma: Manuscript, E: Exercises, H: Homework  
 X% = graded exam with X% of module mark, (p/f) = pass/fail  
 CP: Credit Points

The weighing is accordingly to the credit points.

\* Passing the exam prerequisite (details will be provided at the beginning of the respective course) is required to take part in the module exam.

# Composed exam