

Subject-specific regulations for the degree programme Geophysics (M.Sc.)

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OFFICIAL ANNOUNCEMENT

Ed.: The President of the University of Hamburg

Department 31 – Quality and Law

Subject-specific regulations for the degree programme Geophysics (M.Sc.)

From 6 May 2020

On 22 June 2020, the Presidential Board of the University of Hamburg adopted the regulations for the study programme Geophysics (M.Sc.) as amended by the Faculty Council of the Faculty of Mathematics, Informatics and Natural Sciences on 6 May 2020 on the basis of § 91 paragraph 2 number 1 of the Hamburg Higher Education Act (HmbHG) of 18 July 2001 (HmbGVBl. p. 171) in the version of 24 January 2020 (HmbGVBl. p. 93) for the Master's degree programme in Geophysics as a subject of a degree programme leading to the degree "Master of Science" (M.Sc.) pursuant to § 108 paragraph 1 HmbHG.

Preamble

These subject-specific regulations supplement the regulations of the examination regulations of the Faculty of Mathematics, Informatics and Natural Sciences for degree programmes leading to the degree "Master of Science" (M.Sc.) of 11th April and 4th July 2012 in the respective valid version (PO M.Sc.) for the subject Geophysics.

I. Supplementary Provisions

Regarding § 1

Aim of the study programme, purpose of the examination, academic degree, implementation of the study programme

Regarding § 1, paragraph 1:

- (1) The Master's degree programme in Geophysics is a consecutive, research-oriented degree programme taught in English.
- (2) The Master's programme in Geophysics pursues the general study objectives according to § 1 paragraph 1 PO M.Sc. In addition to these general study objectives, the study of geophysics at Master's level is intended to provide students with sound knowledge in the field of the physics of the solid earth, to prepare them specifically for geophysical research and to give them the ability
 - to independently apply and expand scientific knowledge, methods and skills,
 - to independently pursue further education and
 - to act responsibly in their subject area, observing the rules of good scientific practice.
- (3) The degree programme prepares students for a career in science and industry with a strong research orientation. In addition to the further deepening and broadening of knowledge in lectures, exercises and seminars in the first two semesters, research-based learning is taught from the third semester onwards, in which the students are prepared for their research work, ideally embedded in a research group. In the 6-month Master's thesis, a complex problem from geophysics is to be solved.

(4) Supplementary subject students are taught knowledge from sub-areas of the subject geophysics.

Regarding § 1, paragraph 4:

The programme is implemented by the Faculty of Mathematics, Informatics and Natural Sciences of the University of Hamburg.

Regarding § 4

Programme and examination structure, modules and credit points

Regarding § 4, paragraphs 2 and 3:

(1) The Master's programme is divided into two one-year sections, the specialisation phase and the research phase:

- The one-year specialisation phase serves to acquire the advanced knowledge necessary for independent productive work in geophysics. It consists of in-depth modules (compulsory as well as compulsory elective modules), which are oriented towards the research focal points of the Institute of Geophysics in the Department of Geosciences, or serve the acquisition of comprehensive knowledge and can be selected from a range of subject areas that are related to geophysics. The distribution of the number of credit points to the individual modules is variable and depends on the selected courses. A description of the selectable courses can be found in the module handbook in the currently valid version.

Modules totalling 60 credit points must be successfully completed. The following requirements must be met:

- In the module 'Advanced Studies and Specialisation in Geophysics' at least 30 credit points must be obtained through the successful completion of examinations which are graded in a differentiated (five point scale) manner.
- Courses to the extent of a maximum of 12 credit points can be taken from modules offered by the Department of Earth Sciences in the Bachelor's degree programme Geophysics/Oceanography in the specialisation Geophysics, provided that these have not already been credited in the Bachelor's degree programme. These courses are recorded in the module 'Advanced Studies and Specialisation in Geophysics' in the evaluation system pass/fail.
- In the module 'Seminar', seminars on geophysical topics amounting to at least 6 credit points must be acquired.
- In the module 'Interdisciplinary Studies', courses to the extent of a maximum of 15 credit points from the range of courses offered by the departments of geosciences (including ICSS), mathematics, physics, and computer science can be chosen. Of these, a maximum of 6 credit points can be acquired from the range of courses offered by Bachelor's degree programmes, provided that the partial qualification objectives of the modules in question serve to achieve the overall qualification objective. The suitability of the relevant modules for achieving the overall qualification goal is decided by a study advisor of geophysics in consultation with the student concerned. In case of doubt, the chairperson of the examination board decides. Courses from other departments can be approved by the examination board upon justified application. The courses should be connected in a meaningful way. A subject advisor of geophysics decides on the meaningful connection in terms of content in agreement with the student concerned. In case of doubt, the chairperson of the examination board decides.
- The module 'Elective Studies' with a total maximum of 6 credit points can be freely¹ selected from the courses offered by the University of Hamburg and usually extends over two semesters.
- The one-year research phase consists of three modules and is to be regarded as an inseparable unit. The module 'Orientation Project' and the module 'Preparatory Project' each comprise 15 credit points and are part of the 3rd semester. With them, the students acquire knowledge of the modern state of research and the special methods in the field from which the topic of the Master's

¹Note that the freedom applies to M.Sc.-level courses only. For B.Sc.-level courses, the same procedure as for the interdisciplinary subject applies.

thesis is chosen. Following this, in the fourth semester, the six-month Master's thesis is completed, which is credited with 30 credit points. With this thesis, the students should show that they are able to work on a given problem of current geophysical research according to scientific methods under guidance within a period of time and to present and interpret the task, the means for the solution as well as the solution itself in an understandable and logical way.

- (2) Descriptions of all modules can be found in the "Annex to the Subject-Specific Regulations for the Master's Programme Geophysics – Module Table" and the module handbook, which supplements these Subject-Specific Regulations. The module descriptions are preceded by an overview table with the names of the individual courses, their assignment to the module type (compulsory course, etc.), the teaching method (lecture, etc.) and the workload associated with this course, expressed in credit points (CP).

Semester	Study phase	Modules	Module type	CP
1 and 2	Specialisation phase, 60 CP in total	Advanced Studies and Specialisation in Geophysics	Compulsory	30-54
		Interdisciplinary Studies	Compulsory elective	0-15
		Seminar	Compulsory	6-30
		Elective Studies	Elective	0-6
3 and 4	Research phase, 60 CP in total	Orientation Project	Compulsory	15
		Preparatory Project	Compulsory	15
		Master's Thesis	Compulsory	30

- (3) Further modules exceeding the scope of 120 credit points can be completed voluntarily. However, they do not contribute to the overall grade.
- (4) Supplementary- and minor-subject students take individual courses and acquire knowledge from sub-areas of geophysics. The scope of the supplementary subject study is specified for the students by the examination regulations of their major subject. The examination board shall determine which courses can fill the framework of the major subject in terms of content after consultation of the supplementary subject student with the subject advisor for the subject Geophysics.

Regarding § 13

Course Credits and Module Examinations

Regarding § 13, paragraph 3:

The sum of the partial module examinations should not exceed eight per semester in all modules.

Regarding § 13, paragraph 4:

The specific duration of a written examination ("*Klausur*") is announced at the beginning of the course.

The processing time for a term paper ("*Hausarbeit*") is a minimum of two and a maximum of six weeks. The scope of the examination for a term paper is at least one and at most ten pages of text. The specific processing time and the specific scope of the examination are announced at the beginning of the course.

The processing time for a presentation ("*Referat*") is a minimum of two and a maximum of four weeks. The scope of the examination for the written paper is a minimum of one and a maximum of six pages. The specific processing time and the specific scope of the examination are announced at the beginning of the course.

The processing time for a project conclusion ("*Projektabschluss*") is a minimum of two and a maximum of eight weeks. The scope of the examination for a project conclusion is a minimum of one and a maximum of ten text pages. The specific processing time and the specific scope of the examination shall be announced at the beginning of the course.

Regarding § 13, paragraph 5:

In appropriate cases, examinations may also be conducted with the support of electronic media and in electronic documentation.

Regarding § 13, paragraph 6:

Examinations shall be conducted in German or English. In general, the examination shall be held in the language of the course. In agreement with the examiner and examinee, the examination may be held in a language other than that of the module.

Regarding § 14

Master's thesis

Regarding § 14, paragraph 4:

The Master's thesis can be written in English or German. The decision on this must be made in agreement between the student and the supervisor.

Regarding § 14, paragraph 5:

The workload for the Master's thesis is 30 credit points. The period for writing the Master's thesis is 6 months.

Regarding § 15

Assessment of examination performance

Regarding § 15, paragraph 3, sentence 1:

If a module examination consists of several partial examinations, the grade of the module is calculated as a mean of the grades for the partial examinations weighted by credit points.

Regarding § 15, paragraph 3, sentence 10:

The overall grade of the Master's examination is calculated as the mean of the grades of all module grades weighted by credit points, with the Master's thesis counting double.

Regarding § 15, paragraph 3, sentence 11:

The following applies to the modules 'Orientation Project', 'Preparatory Project' and 'Seminar': The examinations are taken without differentiated (five point scale) grading. Their examinations, as well as those of the modules 'Interdisciplinary Studies' and 'Elective Studies', are not included in the overall grade. For the module 'Advanced Studies and Specialisation in Geophysics' the following applies: Only the differentiated (five point scale) graded examinations with a total of 30 credit points that have been evaluated best are included in the overall grade.

Regarding § 15, paragraph 4:

The overall grade "passed with distinction" is awarded if both assessments for the Master's thesis and the module 'Master's Thesis' are graded with 1.0, the averaged overall grade is less than or equal to 1.30 and no module examination was graded worse than 2.3.

Regarding § 23

Effective date

These subject-specific regulations come into effect on the day after publication in the official announcements of the University of Hamburg. They shall apply for the first time to students who commence their studies in the winter semester 2020/2021. Students who began their studies before this date can change to this version of the subject-specific regulations upon application.

Hamburg, 18 August 2020
University of Hamburg

II. Annex to the Subject-Specific Regulations for the Programme Geophysics (M.Sc.) – Module Table

							Courses				Examinations			
Recommended semester	Frequency of offer	Duration (1 or 2 semesters)	Module type: compulsory (C), compulsory elective (CE) or elective (E)	Module number/abbreviation	Module requirements	Module	Course title	Course type	SWS: directed study hours per week	Pre-requisite for examination	Exam type	Grading according to five point system	Credit points	
Specialisation phase	1, 2	every winter and summer term	2	C	AS	none	Advanced Studies and Specialisation in Geophysics				Preliminary examinations to be taken will be announced at the beginning of the respective course.	Written examination or term paper, as a rule a maximum of seven partial examinations per semester	yes	Min. 30, max. 54
							Lectures	L						1 CP per SWS
							Exercises	E						2 CP per SWS
							Any other possible course type according to § 5 PO							
<p>Learning outcomes: Students have in-depth knowledge of the scientific state of the art in research as well as an in-depth understanding of selected problems, methods and results in topics from the research areas of geophysics. They are able to use advanced scientific methods and techniques that are applied in the research areas. They develop the ability to carry out independent scientific work in the fields and have insight into and practice in dealing with specialist literature.</p>														

Specialisation phase	1, 2	every winter and summer term	2	CE	IS	none	Interdisciplinary Studies			According to the respective course(s)			Min. 0, max. 15; of which max. 6 may be from B.Sc. courses	
								Courses from the Departments of Earth Sciences (including ICSS), Mathematics, Physics, Informatics				As a rule, a maximum of four partial examinations per semester		
Learning outcomes: The students have specifically broadened the knowledge acquired in the subject of geophysics by acquiring knowledge from subjects complementary to geophysics.														
Specialisation phase	1, 2	every winter and summer term	2	C	SEM	none	Seminar			Successful (criteria will be announced at the beginning of the respective course) and regular participation		Presentation and, if applicable, written paper	no	Min. 6, max. 30
								Seminar	S			As a rule, a maximum of two partial examinations per semester		3 CP per 2 SWS
Learning outcomes: Students are able to work independently on an advanced geophysical topic. They can present their results in a lecture and conduct professional discussions.														
Specialisation phase	1, 2	every winter and summer term	2	E	ES	none	Elective Studies			According to the respective course(s)			Min. 0, max. 6	
								Courses ¹ from the University of Hamburg ¹ on M.Sc. level				As a rule, a maximum of two partial examinations per semester		
Learning outcomes: Students have acquired basic knowledge in a subject area of free choice.														

Research phase	3	every winter and summer term	1	C	OP	none	Orientation Project			no	15
							Orientation Project	Course type according to § 5 PO	Preliminary examinations to be taken will be announced at the beginning of the respective course.	Project completion or presentation	
Learning outcomes: The students have familiarised themselves with the current state of scientific literature through in-depth study of a modern research topic from which the Master's thesis is to originate. They have learned how to independently acquire necessary information and background knowledge and how to familiarise themselves with a special topic.											
Research phase	3	every winter and summer term	1	C	PP	OP	Preparatory Project			no	15
							Preparatory Project	Course type according to § 5 PO	Preliminary examinations to be taken will be announced at the beginning of the respective course.	Project completion or presentation	
Learning outcomes: The students have acquired knowledge of the field and the special methods to such an extent that they can successfully apply them to work on questions from which the topic of the master's thesis is to originate. They can plan and structure the intended research project.											

Research phase	4	every winter and summer term	6 months	C	MT	AS	Master's Thesis				Master's Thesis	yes	30
							Written thesis					80 %	
							Oral presentation					20 %	
	<p>Learning outcomes: The students are able to familiarise themselves with a problem of current geophysical research within the given time limit. They can apply suitable scientific methods with an increasing level of independence and present the results in a scientifically appropriate form.</p> <p>Part of the examination type Master's Thesis is a lecture in the context of a scientific seminar, which has the content of the written thesis as its topic. The presentation is included in the assessment of the Master's thesis to the extent of 1/5. The presentation should be given shortly after the submission of the written thesis.</p>												