

The only official and thus legally valid form of the subject-specific examination regulations in the Master's program Applied Geosciences is in German. This translation is only an aid to understanding for persons who are not proficient in the German language and has no legally binding effect.

Subject-specific examination regulations for the Master's Degree „Applied Geosciences“ at the University of Bremen

of February 3, 2021

On February 3, 2021, the Faculty Council 5 (Geosciences) in accordance with Section 87 Paragraph 1 Number 2 of the Bremen University Act (BremHG) in conjunction with Section 62 BremHG in the version of the announcement of May 9, 2007 (Brem.GBl. P. 339), amended by Article 1 of the law of February 24, 2021 (Brem.GBl. p. 216), has decided the following examination regulations:

These subject-specific examination regulations apply in conjunction with the general part of the Examination regulations for Master courses (AT MPO) at the University of Bremen from January 27, 2010 in the currently valid version.

§ 1

Scope of study and degree

(1) (1) For the successful completion of the Master's degree „Applied Geosciences“ a total of 120 credit points (CP) according to the European Credit Transfer and Accumulation System (ECTS) have to be acquired. This corresponds to a standard period of study of 4 semesters.

(2) Based on the Master's examination, the degree

Master of Science
(abbreviated M. Sc.)

will be awarded.

§ 2

Course structure, modules and credits

(1) The Master's degree course „Applied Geosciences“ is studied as a Master's degree course according to § 4 Paragraph 1 Sentence 1 AT MPO. The General Studies area according to § 4 Paragraph 4 AT MPO comprises 6 CP, which can be freely selected within the framework of a module from the complementary studies at the University of Bremen. For more details, see module description.

(2) The course is structured as follows:

- a) Master Thesis with a scale of 30 CP.
- b) Compulsory modules (without Master Thesis module) amounting to 36 CP, 6 CP in “Professionalization and Complementary Competences” and 30 CP in “Project Studies and Scientific Training” are mandatory.
- c) Compulsory elective area totalling 54 CP; divided into "Core Subjects" and "Professionalization and Complementary Competences".

- i. Core Subjects: The compulsory elective modules of "Core Subjects" are listed in Appendix 2.2. A selected "core subject" must be completed in full. At least three of the chosen core subjects with a total of 36 CP and a maximum of four with a total of 48 CP must be completed. By resolution of the examination board, the offer in "Core Subjects" can be supplemented by further core subjects from related Master's courses in Faculty 5 or from other subject-related courses at the University of Bremen, if there is a cooperation agreement. Students can replace modules in the scope of a "core subject" with offers from these other Master's programs.
- ii. Professionalization and Complementary Competences: The modules in "Professionalization and Complementary Competences" are shown in Appendix 2.4. In addition to the compulsory module (6 CP), "Professionalization and Complementary Competences" requires compulsory elective modules with a total of 6 or 18 CP, i.e. either 12 CP or 24 CP in total.

(3) Annex 1 shows the recommended course of study; Annex 2 regulates the examinations to be performed.

(4) Modules are carried out as compulsory or compulsory elective modules.

(5) The compulsory or compulsory elective modules provided in the curriculum are offered at least once a year.

(6) Compulsory modules are held in English, compulsory elective modules in English and/or German language.

(7) The courses assigned to the modules are shown in the module descriptions.

(8) Lectures are held in accordance with § 6 Paragraph 1 AT MPO. In addition, courses are held as

- Project exercises,
- Field exercises

§ 3

Examinations

(1) Examinations are carried out in accordance with §§ 8 ff. AT MPO: In addition, examinations can be carried out as listed in Appendix 3. In individual cases, the examination board can allow other modes of examination at the request of an examiner.

(2) According to § 20 Paragraph 4 AT MPO, an examination can be repeated in another mode than the one originally carried out.

(3) The students will be informed about deadlines and scopes of examinations at the beginning of the module.

(4) Examinations can be carried out as multiple choice or electronic exams. Annex 4 regulates further details.

(5) Exams will be carried out in English or German language.

(6) The compensation principle according to § 5 Paragraph 8 AT MPO will not be applied.

§ 4

Recognition and crediting

The recognition or crediting of achievements takes place in accordance with § 22 AT MPO in the currently valid version.

§ 5

Admission requirements for modules

Except for the context of § 6 paragraph 2, there are no admission requirements for modules.

§ 6

Module Master Thesis (including colloquium)

(1) The module "Module Master Thesis" (30 CP) consists of the Master's thesis with a scope of 30 CP (including a colloquium).

(2) The prerequisite for registering for the Master's thesis is proof of at least 60 CP, including at least one elective module in the chosen profile subject "Chemistry" or "Mineralogy".

(3) The processing time for the Master's thesis is 24 weeks. The examination board can approve a one-time extension of a maximum of 6 weeks upon justified request.

(4) The master's thesis has to be done as an individual work.

(5) The Master's thesis has to be written in English or German.

(6) A colloquium is part of the Master Thesis module. A joint module grade is formed for the Master's thesis and the colloquium. The grade of the Master's thesis is included in the joint grade with 75%, the grade of the colloquium with 25%.

§ 7

Overall grade of the Master examination

The overall grade is formed from the grades of the modules weighted with credit points. Un-graded modules are not included in the calculation.

§ 8

Scope and coming into effect

These examination regulations come into effect on October 1, 2021 after being approved by the Rector. It is published in the official gazette of the Free Hanseatic City of Bremen. It applies to students who start their studies for the first time in the Master's degree "Applied Geosciences" from the winter semester 2021/22.

Approved, Bremen, February 22, 2021
The Rector of the University of Bremen

Annexes:

Annex 1: Course plan of the Master's degree "Applied Geosciences"

Annex 2: Modules and examination requirements

Annex 3: Further types of examinations

Annex 4: Execution of examinations as multiple-choice examinations and "e-exams" (electronic examinations)

Annex 1: Course plan of the Master's degree "Applied Geosciences"

The course plan is a recommendation for the process of the course. Students can attend modules in a different order.

		Compulsory Modules, 36 CP		Compulsory Elective Modules, 54 CP		Master's Thesis, 30 CP	Σ 120 CP
		Project Studies and Scientific Training, 30 CP	Professionalization and Complementary Competences, 12 CP or 24 CP	Core Subjects, 48 CP or 36 CP		Master Thesis, 30 CP	
1. Year	1. Sem.		MAG-PG1 Advanced Geological Mapping, 6 CP	1 or 3 modules of 6 CP according to § 2 paragraph 2, see also Annex 2.4	3 or 4 "Core Subjects" of 12 CP according to Section 2, Paragraph 2, see also Annex 2.2		60
	2. Sem.						
2. Year	3. Sem.	MAG-RS1 Research Seminar, 15 CP					30
		MAG-GP1 Geoscientific Project, 15 CP					
	4. Sem.						

CP = Credit Points, Sem. = Semester

Annex 2: Modules and examination requirements

2.1: Master's Thesis, 30 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-MT1	Module Master Thesis (including Colloquium)	P	30	MP		PL: 2 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2: Core Subjects, Compulsory Elective Modules, 36 or 48 CP

At least three of the chosen core subjects with a scope of 36 CP and a maximum of four with a scope of 48 CP must be completed in full. A chosen core subject must be completed in full, so with the choice of the first module in a core subject, the second module becomes a compulsory module. Change a core subject that has already been selected can only upon application to the examination board. The examination board decides on the recognition of examination results based on individual circumstances.

2.2.1 Applied Geophysics, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-AG1	Applied Geophysics – Methods	WP (P as Core Subject)	6	KP		PL: 3 SL: 0
MAG-AG2	Applied Geophysics – Projects	WP (P as Core Subject)	6	KP		PL: 3 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2.2 Applied Petrology, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-AP1	Crystal Dynamics and Reservoir Formation	WP (P as Core Subject)	6	MP		PL: 1 SL: 0
MAG-AP2	Petrological Methods in Ore Geology	WP (P as Core Subject)	6	MP		PL: 1 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2.3 Applied Sedimentology, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-AS1	Applied Sedimentology Fundamentals	WP (P as Core Subject)	6	MP		PL: 1 SL: 0
MAG-AS2	Applied Sedimentology Projects	WP (P as Core Subject)	6	KP		PL: 2 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2.4 Geohazards, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-GH1	Hazard – Risk Assessment	WP (P as Core Subject)	6	MP		PL: 1 SL: 0
MAG-GH2	Environmental Hazards	WP (P as Core Subject)	6	MP		PL: 1 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2.5 Glaciology, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-GL1	Glaciology I	WP (P as Core Subject)	6	MP		PL: 1 SL: 0
MAG-GL2	Glaciology II	WP (P as Core Subject)	6	KP		PL: 2 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2.6 Hydrogeology, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-HG1	Groundwater Characteristics	WP (P as Core Subject)	6	KP		PL: 2 SL: 0
MAG-HG2	Groundwater Analysis and Hydraulic Modelling	WP (P as Core Subject)	6	KP		PL: 2 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2.7 Engineering Geology, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-IG1	Engineering Geology – Advanced Methods	WP (P as Core Subject)	6	KP		PL: 3 SL: 0
MAG-IG2	Engineering Geology/Geotechnics – Scientific Fields and Technical Engineering Calculation	WP (P as Core Subject)	6	KP		PL: 2 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.2.8 Renewable Energy Resources, 12 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-RE1	Renewable Energy Resources I – Renewable Energy in the Earth System	WP (P as Core Subject)	6	KP		PL: 2 SL: 0
MAG-RE2	Renewable Energy Resources II – Offshore Wind Energy	WP (P as Core Subject)	6	MP		PL: 1 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.3: Project Studies and Scientific Training, Compulsory Modules, 30 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MAG-GP1	Geoscientific Project	P	15	KP		PL: 2 SL: 0
MAG-RS1	Research Seminar	P	15	KP		PL: 3 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

2.4: Professionalization and Complementary Competences, Compulsory Modules and Compulsory Elective Modules, 6 or 18 CP

Ref.-No.	Title of Module	Type of Module P/WP/W	CP	MP/TP/KP	Distribution of CP for TP	PL/SL (Amount)
MMG-PD1	Advanced Digital Competences	WP	6	KP		PL: 2 SL: 0
MAG-PD2	Complementary Competences	WP	6	KP		PL: 0 SL: usually 2
MAG-PG1	Advanced Geological Mapping	P	6	MP		PL: 1 SL: 0
MAG-PG2	Field and Lab Practice	WP	6	KP		PL: 2 SL: 0

Ref.-No. = Reference Number; P: Compulsory Module, WP: Compulsory Elective Module, W: Elective Module; CP = Credit Points; MP = Module Exam, TP = Partial Exam, KP = Combined Exam; PL = Exam Achievement (= graded), SL = Course Achievement (= not graded)

Annex 3: Further types of examinations

- a) Exposé: the presentation of the state of knowledge, scientific motivation, hypotheses and goals of a research project in connection with its implementation (strategy, methodology, schedule).
- b) Portfolio in the form of working on exercises: written processing of several exercises that were given out during the course. Most of the exercises have to be passed in order to pass the exam. The performance is summarized in accordance with Section 8 (8) AT MPO.
- c) Excursion report: detailed written record of one or parts of a field exercise or excursion. There is a deadline for submission. An excursion report can be prepared as a group work.
- d) Bonus examinations: Voluntary efforts accompanying the course, which can only have a positive effect on the grade of the module examination. Bonus exams that are not taken have no negative impact on the module grade.
- e) Mapping report: detailed written report on geoscientific mapping with a self-created geological map and, if necessary, several geological profile sections through the mapping area. A mapping report can be prepared as a group work. There is a deadline for submission.

Annex 4: Execution of examinations as multiple-choice examinations and "e-exams" (electronic examinations)

§ 1

Execution of examinations as multiple-choice examinations

(1) A multiple-choice examination exists if the candidate's minimum performance required to pass the examination can only be achieved by marking or assigning the correct or incorrect answers. Multiple-choice exams are only permitted if they are suitable to provide evidence

that the candidate has mastered the content and methods of the module in the essential contexts and can apply the knowledge and skills acquired. A multiple-choice exam must be prepared by an examiner in accordance with Section 27 AT BPO. The examiner selects the examination material, the questions and determines the possible answers. Furthermore, he or she creates the evaluation scheme according to paragraph 4 and applies it after the examination. The deduction of points within an examination task in the multiple-answer voting procedure is permitted.

(2) The questions must be clearly understandable, clearly answerable and suitable for determining the knowledge of the candidates to be tested in accordance with paragraph 1, sentence 2. The examiner can also create a pool of equivalent questions. In the exam, students from this pool receive different exam questions to answer. The assignment is done by random selection. The equivalence of the questions must be ensured. The prerequisites for passing the exam must be specified in advance. For each exam

- the selected questions,
- the sample solution and
- the evaluation scheme according to paragraph 4

have to be determined.

(3) The examination is passed if the candidate has achieved at least 50 percent of the total achievable points. If the total average of all candidates of the points achieved in an examination is lower than 50 percent of the total achievable points, the examination is also passed if the number of points achieved by the candidate is not more than 15 Percent below this average. An evaluation scheme that only defines an absolute pass limit is not permitted.

(4) The achievements are to be valued as follows: If the minimum number of achievable points required to pass the examination according to paragraph 3 has been achieved, the grade will be

„Very good“,	if at least 75 percent,
„Good“,	if at least 50 but less than 75 percent,
„Satisfactory“,	if at least 25 but less than 50 percent,
„Sufficient“,	if none or less than 25 percent

of the achievable points beyond that were achieved.

(5) If the valuation of multiple-choice examinations reveals a conspicuous accumulation of errors in answering individual examination questions, the examiner will this immediately and before the announcement of the examination results, whether they are defective in terms of the requirements according to paragraph 2 sentence 1.

If the review reveals that individual examination questions are incorrect, these examination questions must be reassessed or not taken into account when determining the examination result. The number of questions to be taken into account for the determination of the result is reduced accordingly. The reduction in the number of examination tasks must not be detrimental to the students. If the number of points attributable to the examination tasks to be eliminated exceeds 20 percent of the total achievable points, the examination must be repeated in total; this also applies to an examination which is only partly offered as a multiple-choice exam.

(6) If only part of a written exam consists of multiple-choice questions, this annex applies, with the exception of paragraph 5, sentence 5, 2nd half-sentence, only to the multiple-choice answer.

§ 2

Execution of examinations as „E-Exams“

(1) An “e-exam” is an examination that is created, carried out and evaluated (with the exception of the open questions) with the help of a computer. An “e-exam” is permitted if it is capable of proving that the candidate has mastered the content and methods of the module in the essential contexts and can apply the knowledge and skills acquired; if necessary, it can be supplemented by other forms of examination.

(2) The "e-exam" must be carried out in the presence of a professionally competent person (keeper of the minutes). Minutes must be made of the course of the examination, in which at least the names of the person taking the minutes and the examination candidates, the beginning and end of the examination and any special occurrences must be recorded. It must be ensured that the electronic data can be clearly and permanently assigned to the candidates. In accordance with the provisions of § 24 Paragraph 6 AT BPO, the candidates must be given the opportunity to inspect the computer-aided examination and the result they have achieved. The task including the sample solution, the assessment scheme, the individual test results and the minutes must be archived in accordance with the statutory provisions.