**- Unofficial consolidated reading version -**

The following is the wording of the examination regulations for the Master's degree program “Materials Chemistry and Mineralogy”, as it results from

* the version of the regulations dated February 3, 2021 (Brem.OJ p. 458) and
* the regulations amending the subject-specific examination regulations for the Master's degree program “Marine Geosciences” at the University of Bremen dated October 23, 2024 (Brem.OJ p. 152)

Information on the content of the individual amendment regulations and the entry into force of the regulations contained therein cannot be presented here.

**Subject-specific examination regulations for the Master's degree course “Materials Chemistry and Mineralogy” at the University of Bremen**

From October 23, 2024

These subject-specific examination regulations apply in conjunction with the General Part of the Examination Regulations for Master's Degree Programs (AT MPO) at the University of Bremen dated January 27, 2010, as amended.

§ 1

**Scope of studies and degree**

(1) A total of 120 credit points (CP) must be earned in accordance with the European Credit Transfer and Accumulation System (ECTS) in order to successfully complete the Master's degree course in „Materials Chemistry and Mineralogy“. This corresponds to a standard period of study of 4 semesters.

(2) The degree

Master of Science (abbreviated to M.Sc.)

is awarded on successful completion of the Master's examination.

§ 2

**Course structure, modules and credit points**

(1) The Master's degree course in „Materials Chemistry and Mineralogy“ is studied as a Master's degree course in accordance with Section 4 (1) (1) AT MPO. The General Studies area in accordance with Section 4(1)(1) AT MPO comprises 3 CP, which can be freely selected from the supplementary studies at the University of Bremen, or as another course offered by Faculty 5.

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(2) The degree program is structured as shown below:

a) Master's thesis amounting to 30 CP. The Master's thesis must be completed in the chosen profile subject “Chemistry” or “Mineralogy”, see also § 6;

b) Compulsory modules (without Master's thesis modules) amounting to 39 CP;

c) Compulsory elective modules and elective modules totaling 51 CP, see letters b and c for details. In this section, students must also complete the General Studies section in accordance with paragraph 1. In the compulsory elective and elective modules. Students have two profile subjects to choose from, namely the profile subject “Chemistry” and the profile subject “Mineralogy”. Students decide to what extent they complete both profile subjects.

d) The following selection rules apply to the study of profile subjects:

i. Two compulsory elective modules of 12 CP each must be completed, which can be freely chosen across both profile subjects;

ii. A minimum of 24 CP and a maximum of 42 CP must be completed in the first profile subject: For example, if 24 CP are completed in the first profile subject, 24 CP must consequently be completed in the second profile subject; if one profile subject is completed with 42 CP, then the other profile subject must be completed with 6 CP, etc;

iii. If a profile subject is studied to a greater extent, elective modules amounting to at least 12 CP and at least one compulsory elective module amounting to 12 CP must be studied from the range of profile subjects.

(3) Appendix 1 shows the recommended course of study, Appendix 2 regulates the examinations to be taken.

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

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

(6) Compulsory and compulsory elective modules are taught in English and elective modules in German and/or English. It is guaranteed that elective modules in English amounting to at least 24 CP are offered in each profile subject.

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

(8) Courses are held in accordance with Section 6 (1) AT BPO. Other types of courses may be specified by decisions of the Rectorate.

§ 3

**Examinations**

(1) Examinations are conducted in the forms specified in §§ 8 ff. AT BPO and the University of Bremen's regulations for conducting electronic examinations (DigiPrüfO UB/Digitalprüfungsordnung) in the currently valid versions: In addition, examinations may be conducted in the forms listed in Appendix 3. In individual cases, the Examination Board may approve other forms of examination at the request of an examiner.

(2) A re-examination may be conducted in a form other than the original one in accordance with Section 20 (4) AT BPO.

(3) Students will be informed of the deadlines and scope of examinations at the beginning of the module.

(4) English is the examination language.

(5) The compensation principle in accordance with Section 5 (8) AT BPO is not applied.

§ 4

**Recognition and crediting**

The recognition or crediting of achievements is carried out in accordance with § 22 AT BPO as amended.

§ 5

**Admission requirements for modules**

There are no admission requirements for modules except in the context of § 6 paragraph 2.

§ 6

**Master's thesis module (including colloquium)**

(1) The “Master's Thesis” module (30 CP) consists of the Master's thesis amounting to 30 CP (including a colloquium). The Master's thesis must be completed in the more comprehensive profile subject “Chemistry” or “Mineralogy”. If both profile subjects have been completed to the same extent (24 CP each), the choice of Master's thesis is not tied to one profile subject, provided that at least one compulsory elective module has been completed in both profile subjects.

(2) The prerequisite for registering for the Master's thesis is proof of at least 60 CP, including at least one compulsory 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 may approve a one-off extension of a maximum of 6 weeks upon justified request.

(4) The Master's thesis is written as an individual work.

(5) The Master's thesis is written in English.

(6) A joint module grade is calculated for the Master's thesis and colloquium. The grade for the Master's thesis accounts for 75% and the grade for the colloquium for 25% of the joint grade.

§ 7

**Overall grade of the Master's examination**

The overall grade is calculated from the grades of the modules weighted with credit points. Ungraded modules are not included in the calculation.

§ 8

**Scope and entry into force**

1. These examination regulations come into force after approval by the Rector on October 1, 2021. They will be published in the Official Gazette of the Free Hanseatic City of Bremen. They apply to students commencing their studies in the Master's degree program “Applied Geosciences” for the first time from the winter semester 2021/22.

Appendixes:

Appendix 1: Study plan for the Master's degree course in „Materials Chemistry and Mineralogy“

Appendix 2: Modules and examination requirements

Appendix 3: Other forms of examination

**Appendix 1: Study plan for the master's degree program “Materials Chemistry and Mineralogy”**

The study plan is a recommendation for the course of study. Students can take modules in a different sequence.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Compulsory Modules, 39 CP** | **Compulsory Elective and Elective modules, 51 CP****(**Profiles and General Studies Area according to § 2 paragraphs 1 and 2) | **Master Thesis, 30 CP** | **∑ 120****CP** |
| **„Profile Chemistry“ and „Profile Mineralogy“,****48 CP** | **General Studies Area, 3 CP** |
| **Compulsory Elective Modules** | **Elective Modules** |
| **1. Year** | **1. Sem.** | MCM-A1, Analytical Methods, 6 CP | MCM-MI, Mineralogy, 6 CP | MCM-CR-a Crystallography, 6 CP | MCM-CH Chemistry, 6 CP | MCM-MS, Materials Science, 6 CP |  |  | 30 |
| **2. Sem.** | MCM-A2, Analytical Methods II, 6 CP |  | see § 2 (2) and Appendices 2.3.2 and 2.3.4 |  |  |  30 |
| **2. Year** | **3.Sem,** | MCM-GS-a,Programming3 CP | see § 2 (2) and Appendices 2.3.1 and 2.3.3 |  | see § 2 (1) and Appendix 2.3.5 |  | 30 |
| **4. Sem.** |  |  | MCM-MT,Module Master Thesis (incl. Collo- quium),30 CP | 30 |

CP: Credit Points, Sem.: Semester, incl.: including

**Appendix 2: Modules and examination requirements**

**2.1: Master Thesis, 30 CP**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| K.-Ziffer | ModuleTitle | Module Type P/WP/W | CP | MP/TP/KP | Distribution of CP for TP | PL/SL(Amount) |
| MCM- MT | Module Master Thesis (including Colloquium) | P | 30 | MP |  | PL: 2SL: 0 |

K.-Ziffer: code number; P: compulsory module, WP: compulsory elective module, W: elective module; CP: Credit Points; MP: module examination, TP: partial examination, KP: combination exam; PL: examination achievement (= graded), SL: study achievement (= not graded)

**2.2: Compulsory Modules, 39 CP**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| K.-Ziffer | ModuleTitle | Module Type P/WP/W | CP | MP/TP/KP | Distribution of CP for TP | PL/SL(Amount) |
| MCM-A1 | Analytical Methods I | P | 6 | KP |  | PL: 1SL: 1 |
| MCM-MI | Mineralogy | P | 6 | MP |  | PL: 1SL: 0 |
| MCM-CR-a | Crystallography | P | 6 | TP | Introd. to Crystallography and Rietveld Lecture, 5 CP | PL: 1SL: 0 |
| Rietveld Practical, 1 CP | PL: 0SL: 1 |
| MCM-CH | Chemistry | P | 6 | MP |  | PL: 1SL: 0 |
| MCM-MS | Materials Science | P | 6 | MP |  | PL: 1SL: 0 |
| MCM-A2 | Analytical Methods II | P | 6 | KP |  | PL: 1SL: 1 |
| MCM-GS-a | Programming | P | 3 | MP |  | PL: 0SL: 1 |

K.-Ziffer: code number; P: compulsory module, WP: compulsory elective module, W: elective module; CP: Credit Points; MP: module examination, TP: partial examination, KP: combination exam; PL: examination achievement (= graded), SL: study achievement (= not graded)

**2.3. Compulsory Elective- and Elective Modules of the Profile Subjects „Mineralogy“ and „Chemistry“, 48 CP**

The rules for selection in this module area are set out in § 2 paragraph 2 letters c and d.

2.3.1 „Profile Mineralogy”, Compulsory Elective Modules

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| K.-Ziffer | ModuleTitle | Module Type P/WP/W | CP | MP/TP/KP | Distribution of CP for TP | PL/SL(Amount) |
| MCM-MR1 | Research Module Mineralogy I | WP | 12 | MP |  | PL: 1SL: 0 |
| MCM-MR2 | Research Module Mineralogy II | WP | 12 | MP |  | PL: 1SL: 0 |

K.-Ziffer: code number; P: compulsory module, WP: compulsory elective module, W: elective module; CP: Credit Points; MP: module examination, TP: partial examination, KP: combination exam; PL: examination achievement (= graded), SL: study achievement (= not graded)

2.3.2 „Profile Mineralogy“, Elective Modules

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| K.-Ziffer | ModuleTitle | Module Type P/WP/W | CP | MP/TP/KP | Distribution of CP for TP | PL/SL(Amount) |
| MCM-CS | Crystal Structure Analysis | W | 6 | MP |  | PL: 1SL: 0 |
| MCM-MM | Minerals and Materials | W | 6 | KP |  | PL: 2SL: 0 |
| MCM-PP-a | Physical Properties of Crystals | W | 6 | TP | Introd. To Crystal Physics, 3 CP | PL: 1SL: 0 |
| Electron Microscopy, 3 CP | PL: 1SL: 0 |
| MCM-ST-a | Special Topics in Mineralogy and Materials Science  | W | 6 | TP | Special Topics Lecture, 3 CP | PL: 1SL: 0 |
| Lab Course, 3 CP | PL: 0SL: 1 |
| MAG-AP2 | Petrological Methods in Ore Geology | W | 6 | MP |  | PL: 1SL: 0 |
| MCM-FC | Functional Ceramics | W | 6 | MP |  | PL: 1SL: 0 |
| MCM-TC | Technical Ceramics | W | 6 | MP |  | PL: 1SL: 0 |
| MCM-NM | Nanomaterials | W | 6 | KP |  | PL: 1SL: 1 |

K.-Ziffer: code number; P: compulsory module, WP: compulsory elective module, W: elective module; CP: Credit Points; MP: module examination, TP: partial examination, KP: combination exam; PL: examination achievement (= graded), SL: study achievement (= not graded)

2.3.3 „Profile Chemistry”, Compulsory Elective Modules

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| K.-Ziffer | ModuleTitle | Module Type P/WP/W | CP | MP/TP/KP | Distribution of CP for TP | PL/SL(Amount) |
| MCM-CR1 | Research Module Chemistry I | WP | 12 | KP |  | PL: 1SL: 1 |
| MCM-CR2 | Research Module Chemistry II | WP | 12 | KP |  | PL: 1SL: 1 |

K.-Ziffer: code number; P: compulsory module, WP: compulsory elective module, W: elective module; CP: Credit Points; MP: module examination, TP: partial examination, KP: combination exam; PL: examination achievement (= graded), SL: study achievement (= not graded)

2.3.4 „Profile Chemistry“, Elective Modules

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| K.-Ziffer | ModuleTitle | Module Type P/WP/W | CP | MP/TP/KP | Distribution of CP for TP | PL/SL(Amount) |
| W02 | Solid State Synthesis and Characterization | W | 6 | MP |  | PL: 1SL: 0 |
| W03 | Structure Property Relationships | W | 6 | TP | Lecture exam, 3 CP | PL: 1SL: 0 |
| Seminar Assignment, 3 CP | PL: 1SL: 0 |
| MCM-DA-a | Multiple (Large) Dataset Analysis | W | 6 | KP |  | PL: 1SL: 1 |
| MCM-CM-a | Computational Materials Science  | W | 6 | TP | Introduction to Comp. Mater. Science, 4 CP | PL: 1SL: 0 |
| Practical Course, 2 CP | PL: 1SL: 0 |
| W11 | Surface Chemistry and Catalysis | W | 6 | KP |  | PL: 2SL: 0 |
| MCM-SO | Solid State Spectroscopy | W | 6 | KP |  | PL: 2SL: 0 |

K.-Ziffer: code number; P: compulsory module, WP: compulsory elective module, W: elective module; CP: Credit Points; MP: module examination, TP: partial examination, KP: combination exam; PL: examination achievement (= graded), SL: study achievement (= not graded)

2.3.5 General Studies Area, 3 CP

Students can complete courses from the University of Bremen's supplementary studies as well as courses from Faculty 5 as part of the module listed below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| K.-Ziffer | ModuleTitle | Module Type P/WP/W | CP | MP/TP/KP | Distribution of CP for TP | PL/SL(Amount) |
| MCM- GS-b | General Studies-Offers | WP | 3 | MP |  | PL: 0SL: 1 |

K.-Ziffer: code number; P: compulsory module, WP: compulsory elective module, W: elective module; CP: Credit Points; MP: module examination, TP: partial examination, KP: combination exam; PL: examination achievement (= graded), SL: study achievement (= not graded)

**Appendix 3: Further forms of examination**

a) Bonus examinations: voluntary coursework that can only have a positive effect on the grade of the module examination. Bonus examinations not taken have no negative effect on the module grade.