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Special regulations of the examination rules for the Master Degree Course Materials Science and Engineering at the University of Applied Sciences
Münster dated 12th June 2018

Pursuant to § 2 Section 4 and § 64 Section 1 of the Higher Education Act, Northrhine-Westfalia (Hochschulgesetz - HG) dated 16. September 2014 (GV. NRW. pg. 547), last amended 17. Oktober 2017 (GV. NRW. pg. 805) and § 1 of the General Section of the examination rules for Bachelor- and Master degree courses of the University of Applied Sciences Münster, the Faculty of Chemical Engineering, Physical Engineering and the MCI (Münster Center for Interdisciplinarity) of the University of Applied Sciences Münster have issued the following Special Regulations of examination rules:

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§ 1
Scope

These Special regulations apply to the Master's Programme Materials Science and Engineering at the University of Applied Sciences, Münster and form the examination rules for this programme together with the General Section of the examination rules for Bachelor- and Master courses of the University of Applied Sciences Münster (AT PO).

§ 2
Course objective, Purpose of the Examination, Master Degree

(1) The Master degree examination is a degree qualifying students for a scientific career.

(2) The Master degree examination has - in consideration of general study goals (§ 58 HG) - the aim to expand on scientific knowledge in areas of Materials Science and Engineering after a first qualifying university degree. The course shall convey scientific-theoretical as well as research- and applied contents of the subject. It is intended to enable students to independently analyse processes and problems in the professional field, to develop problem- and practice-oriented solutions using engineering methods and to take account of non-subject-related aspects in the process.

(3) The Master degree examination shall ascertain whether the candidate has acquired the necessary thorough and comprehensive expertise and skills which are essential for self-contained activities and is able to apply these individually on the basis of scientific findings and methods.

(4) After passing the Master degree examination, a Master of Science degree (abbreviated M.Sc.) is awarded in accordance with § 66 HG.

§ 3
Entry requirements

(1) Proof of the following is required for admission or continuation of studies for the Master Degree Course Materials Science and Engineering at the University of Applied Sciences Münster:

- A relevant first professionally qualifying university degree with a standard study period of at least 6 semesters in a technical, engineerial or predominantly engineerial course in the fields of chemistry, physics or related fields with an overall grade of at least „good“ (2,5).
- English language skills at B2 level according to the European Reference Framework.
- For applicants who have acquired the relevant bachelor degree at the University of Applied Sciences Münster or another English-language university degree program or who can give evidence of English as their mother-tongue, proof according to bullet point 2 shall be deemed to have been provided. All other cases will be determined by the examination board on request of the applicant.

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(2) The qualified university degree referred to in paragraph 1 may exceptionally also be proven by particularly qualified performances of professional activities after a first vocationally qualifying degree, particularly qualifying performances in the second half of the first vocationally qualifying degree course or an excellent thesis in a first vocationally qualifiying degree course that is particularly relevant to the Materials Science and Engineering Master's degree programme. The necessary determinations are made by the examination board after submission of appropriate documents and possibly after a personal technical discussion.

(3) Graduates with a university degree which is not predominantly engineerial or an engineering course in a non-related field of study may exeptionally be admitted subject to conditions. The necessary assessments and conditions are made by the examination board after submission of appropriate documents and possibly after a personal technical discussion. The conclusions relevant to the decision must be recorded.

§ 4
Standard study period, Workload, Start of studies

(1) The Degree course comprises a standard study period of four semesters including all examinations.

(2) The volume of studies required for the successful completion of studies (scope of the necessary courses) is 69 semester hours per week (SHW). The study workload according to § 8 AT PO amounts to 120 credit points (CP). Please refer to the attached syllabus for further details.

(3) The first semester can be taken up on an annual basis in the winter term. Exceptions are only possible after prior consultation by the examination board.

§ 5
Forms of examination

(1) Instead of a written examination (§15 AT PO) or oral examination (§16 AT PO), a modul examination module examination can also consist of a homework, a project work or a presentation or a combination of written examination or oral examination and one of the special examination forms.

(2) The candidate shall prove by a homework, project work (project modul) or presentation that she or he recognizes connections in the respective examination subject and can independently work on special tasks in the special examination form.

(3) The examination question for a special form of examination is usually given by only one examiner. In substantiated cases, especially if the contents of the examination subject have been taught in several seminars and by several lecturers, the examination question may also be placed by several examiners. In this case, the examiner only examines his/her part of the examination task. The weighting of the shares will jointly be determined by the examiners in advance.

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(4) At the time of submission or before the presentation of the special examination paper, the candidate must give written assurance that he or she has carried out his/her work independently - in the case of group work, his/her correspondingly marked share of the work - and has not used any sources and aids other than those indicated and identified in quotations.

(5) In a project or presentation, the main subjects and results of the examination, in particular the facts relevant for the marking, shall be recorded in a written report.The result of the examination will be communicated to the candidate after the project has been completed or presented in a closed session.

(6) Additional special examination forms may be permitted by the examination board.

(7) Besides, the provisions on written and oral examinations shall apply accordingly.

§ 6
Module examinations of the course, Admission requirements

(1) A total of 120 credit points must be earned within the framework of the Master's programme Materials Science and Engineering. Included therein are three compulsory modules with 8 credit points (CP) each and 24 credit points (CP) overall. Modules of at least 42 credit points must be completed from the elective module catalogue I. As a rule, these modules have 6 credit points. some modules of this catalogue may also have 3 credit points. In the elective module catalogue II, modules of at least 3 credit points must be completed. The modules of the elective module catalogue II which have to be completed are determined by the examination board on the basis of previous knowledge, with the following condition: if proof of sufficient knowledge of German is not given, the module "German as a foreign language" has to be completed, if sufficient knowledge of German exists, the module "Intercultural Communication and Competence" has to be completed. In the project module, 3 part performances with a total of 12 credit points must be completed. The marking is done by the supervisors.

Compulsory modules	**Credit points**	**Customary completion by**	**Admission requirements**
Solid State Physics and Semiconductors	8	Written or oral examination	Active participation
Dielectrics and Ceramics	8	Written or oral examination	Regular participation in practical trainings and recognition of the associated coursework.
Macromolecular Chemistry and Polymer Application	8	Written or oral examination	Regular participation in practical trainings and recognition of the associated coursework.

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(2) The elective module catalogues (see Annex) are based on the current offer of the faculties at the university location Steinfurt of the University of Applied Sciences, Münster. The faculties/MCI may, by decision of the faculty councils/the institute council, admit further elective modules than those listed. The announcement is made on the website of the degree programme.

(3) Lectures for the elective models are subject to permanent update and extension. The lectures offered at a time will be updated at the beginning of a term and announced on the website of the degree programme.

(4) The retake of module examinations is governed by § 10 AT PO. The additional examination attempt provided for in section 2 clause 2 may solely be used for compulsory modules.

§ 7
Project module

(1) Within the framework of the Master's programme Materials Science and Engineering at Münster University of Applied Sciences, three project works have to be completed. The first project work shall be a literature work. The project works will be aggregated in one project module (12 CP's) that can be completed over three semesters.

(2) In the project work, the candidate should prove that he or she is capable of successfully completing a science- or practice-oriented task within a given period of time using cross-module solution approaches in a methodologically consistent and scientific manner and presenting the results clearly, comprehensibly and plausibly not only in written but also in oral form and successfully presenting themselves in a discussion to an expert audience.

(3) Admission for the project work is given to those who have fulfilled the admission requirements according to § 13 section 1 AT PO. The examination board decides upon admission to the Master Degree Programme Materials Science and Engineering.

(4) A project work can be issued and supervised by any full-time lecturer who is authorised to conduct examinations in accordance with §5 paragraph 1 AT PO. Once a suitable topic is available for a project work, the examination board may, at the request of the candidate, also appoint an honorary professor or a lecturer entrusted with corresponding tasks in accordance with §5 paragraph 1 AT PO for supervision.

(5) The project work will usually be carried out at the University of Applied Sciences. Students are entitled to make suggestions for the topic of their project work.

(6) Time to finish (period from assignment to submission of the project work) is usually not more than five months.

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(7) Evaluation of the project work as a module part examination is based on the written elaboration, the presentation and the questioning / discussion. Besides, the regulations for written and oral examinations apply. The overall grade of the module is calculated from the grade average of the three module part examinations (project works).

(8) The project work may be retaken twice.

(9) Upon passing all three module part examinations, the candidate will be assigned 12 credit points.

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§ 8
Master thesis

(1) Guideline for the scope of the written part of the Master thesis is approx. 60 pages DIN A 4 (with approx. 2.000 characters per page).

(2) Time to finish (period from assignment to submission) the Master thesis is up to five months. An extension is possible according to § 19 section 3 AT PO upon request.

(3) Admission for the Master thesis is given to those who

1. are registered for the Master degree programme Materials Science and Engineering at the University of Applied Sciences Münster or admitted as visiting student,
2. have passed all module examinations according to § 6 except from one module examination with 8 or 6 credit points each or 2 module examinations with 3 credit points each and
3. have successfully finished the project module according to § 7.

(4) The application for admission shall be addressed to the examination board in writing. The following documents have to be enclosed, unless they have already been submitted:

1. evidence of the conditions referred to in paragraph 3,
2. an explanation of previous attempts to work on a master's thesis and to take the master's examination in the chosen course of study or in a course of study with considerable proximity in content.

The application shall include a declaration stating which authorized person is prepared to supervise the Master's thesis.

(5) The application for admission to the Master's thesis can be withdrawn in writing until the decision on the application has been announced, without taking into account the number of possible examination attempts.

(6) The examination board will decide about admission. Admission may be declined, if

1. conditions according to section 3 are not fulfilled or
2. documents are incomplete or
3. if the candidate in a Master's programme in Materials Science and Engineering at a university within the scope of the Basic Law or in a Master's programme, which shows a considerable proximity in content to the aforementioned programme, has lost the examination claim due to final non-existence or due to the failure to meet a retake deadline.

(8) The candidate will be assigned 27 credit points for a passed Master thesis.

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§ 9
Colloquium

(1) The colloquium completes the Master's thesis and is to be evaluated independently.

(2) The candidate will be admitted to the colloquium if

1. the conditions according to § 8 section 3 about admission to the Master's thesis have been proven and
2. the Master's thesis has a grading of at least „adequate" (4,0).

(3) The colloquium is held as a presentation followed by an oral examination and will take approximately 30-60 minutes notwithstanding § 21 section 4 sentence 3 AT PO.

(4) The candidate will be assigned 3 credit points for a passed colloquium.

§ 10
Entry into force

The special regulations of the examination rules for the Master Degree Programme Materials Science and Engineering at the University of Applied Sciences Münster will become effective the day after their publication. They will be published in the official announcements of the University of Applied Sciences Münster.

Issued on the basis of the resolutions of the councils of the faculties of Chemical Engineering and Physical Engineering of 23 March 2018 and 4 April 2018 and of the institute council of the MCI of 18 April 2018

Münster, 12th June 2018

Annex 1: Syllabus for the Master Degree Course

Syllabus for the Master Degree Course: Materials Science and Engineering

Datum: 21.03.2018

Version: 10.0

Abbreviations:

SHW = Semester hours per week

CP = Credit points

L = Lecture

ST = Seminaristic teaching

T = Tutorial

S = Seminar

P = Practical training

EE = Exam element

ME = Module exam

PE 1 = Partial exam 1 of ME

PE 2 = Partial exam 2 of ME

	1. Semester							2. Semester							3. Semester							4. Semester							Sum	
	SHW					CP	EE	SHW					CP	EE	SHW					CP	EE	SHW					CP	EE		
Type of lecture	L	S	P	T	ST			L	S	P	T	ST			L	S	P	T	ST			L	S	P	T	ST			**SHW**	**CP**
Modul																													
Compulsory module 1	4	2		1		8	ME																					**7**	**8**
Elective module 1	3		1	1		6	ME																					**5**	**6**
Elective module 1	3		1	1		6	ME																					**5**	**6**
Elective module 2	3		1	1		6	ME																					**5**	**6**
Project work		1				4	PE1																					**1**	**4**
Compulsory module 2								3		3	1		8	ME														**7**	**8**
Elective module 1								3		1	1		6	ME														**5**	**6**
Elective module 1								3		1	1		6	ME														**5**	**6**
Elective module 2								3		1	1		6	ME														**5**	**6**
Project work									1				4	PE2														**1**	**4**
Compulsory module 3															3		3	1		8	ME							**7**	**8**
Elective module 1															3		1	1		6	ME							**5**	**6**
Elective module 1															3		1	1		6	ME							**5**	**6**
Elective module 1															3		1	1		6	ME							**5**	**6**
Project work																1				4	PE3							**1**	**4**
Master thesis																										27		**0**	**27**
Colloquium																										3		**0**	**3**
SUM	*13*	*3*	*3*	*4*	*0*	*30*	*0*	*12*	*1*	*6*	*4*	*0*	*30*	*0*	*12*	*1*	*6*	*4*	*0*	*30*	*0*	*0*	*0*	*0*	*0*	*0*	*30*	*0*	***69***	***120***
	23							*23*							*23*							*0*								

Enclosure 2: Elective module catalogue I and II

Lectures for the elective modules are subject to constant up-date and enhancement. Lectures offered will be up-dated at the beginning of each semester and published via notice or internet.
The below mentioned modules (given as examples) are currently offered.

Compulsory modules:	**CP**
Solid State Physics and Semiconductors	**8**
Dielectrics and Ceramics	**8**
Macromolecular Chemistry and Polymer Application	**8**
Project Work (1-3)	**4**
Elective module catalogue I:	**6**
Chemical Nanotechnology	**6**
Technology of Coatings	**6**
Incoherent Light Sources	**6**
Statistical Physics	**6**
Life-Cycle Assessment	**6**
Biomedical Materials	**6**
Advanced Physical Chemistry	**6**
Membrane Separations	**6**
Advanced Inorganic Chemistry	**6**
Chemical Technology of Materials	**6**
Microscopy/Surface Science	**6**
Analytics of Materials	**6**
Modern Crystallographic Methods	**3**
Semiconductor Tech. u. Dev. of MOEMS with FEM (two sem.)	**9**
Project Management	**6**
Business Simulation	**6**
Elective module catalogue II:	
*German as a foreign language or	**3**
Intercultural Communication and Competence	**3**
Bridging courses from Physics / Chemistry B.Sc. prog.	**3**
Photovoltaic systems	**6**

*Modules which have to be completed from the elective module catalogue II will be determined by the examination board taking previous knowledge into account (see § 6 section 1).