

These examination regulations have been worded carefully to be up to date; however, errors cannot be completely excluded. The official German text available from L1 – Legal Affairs and Academic Quality Management is the version that is legally binding.

Note:

Students who started their studies before the latest amendment came into effect are requested to also comply with previous amendments and the respective transitory provisions.

**Degree Programme and Examination Regulations for
the Bachelor's degree programme in
Materials Science and Engineering and the
Master's degree programme in
Materials Science and Engineering
at the Faculty of Engineering at
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)
– FPOMWT –
Dated 25 September 2007**

amended by statutes of
25 July 2008
10 December 2008
7 May 2010
17 January 2011
30 July 2012
31 July 2012 (joint amendment statute)
29 July 2013
6 March 2020
29 September 2021

Based on Section 13 (1)(2), Section 43 (5), Section 58 (1) and Section 61 (2)(1) of the Bavarian Higher Education Act (Bayerisches Hochschulgesetz, **BayHSchG**), FAU enacts the following degree programme and examination regulations:

Contents:

Part I: General Provisions	2
Section 35 Scope	2
Section 36 Bachelor's Degree Programme, Related Degree Programmes	2
Section 37 Master's Degree Programme, Start of Degree Programme, Related Degree Programmes, Teaching and Examination Language	2
Part II: Special Provisions	3
1. Bachelor's Examination	3
Section 38 Scope of the Grundlagen- und Orientierungsprüfung	3
Section 39 Structure of the Bachelor's Degree Programme, Scope and Structure of the Bachelor's Examination	3
Section 40 Requirements for Admission to Bachelor's Thesis.....	3
Section 41 Bachelor's Thesis	4
Section 42 Evaluation of Achievements for the Bachelor's Degree Programme	4

2. Master's Examination	4
Section 43 Qualification for a Master's Degree, Certificates and Admission Requirements	4
Section 44 Scope and Structure of the Master's Degree Programme	5
Section 44a Core Subject Module (Foundation, Supplementary and Elective Modules M1 – M9)	6
Section 44b Elective Modules (M10–M11)	7
Section 44c Academic Project (M12).....	7
Section 44d Soft Skills (M13).....	8
Section 45 Master's Thesis, Admission Requirements	8
Section 46 Evaluation of Achievements for the Master's Degree Program; Certificate	9
Part III: Final Provisions	9
Section 47 Legal Validity and Transitory Provisions	9
Appendix 1: Structure of the Bachelor's Degree Programme in Materials Science and Engineering	11
Appendix 2: Degree programme structure for Master's degree programme in Materials Science and Engineering	14

Part I: General Provisions

Section 35 Scope

¹These degree programme and examination regulations stipulate conditions for admission to and provisions for examinations in the Bachelor's degree programme in Materials Science and Engineering and the consecutive Master's degree programme in Materials Science and Engineering, leading to Bachelor of Science and Master of Science degrees. ²They complement the current version of the General Degree Programme and Examination Regulations for Bachelor's and Master's Degree Programmes of the Faculty of Engineering at FAU – **ABMPO/TechFak** – dated 18 September 2007.

Section 36 Bachelor's Degree Programme, Related Degree Programmes

(1) ¹The Bachelor's degree programme in Materials Science and Engineering comprises modules worth 180 ECTS credits distributed over six semesters, the Grundlagen- und Orientierungsprüfung (preliminary examination) and the Bachelor's examination. ²The Bachelor's degree programme includes an industrial internship lasting a total of three months, one day for an excursion module and time for completing the Bachelor's thesis including presentation and subsequent discussion.

(2) The provisions in Section 24 (1)(2)(2) **ABMPO/TechFak** do not apply to related degree programmes.

Section 37 Master's Degree Programme, Start of Degree Programme, Related Degree Programmes, Teaching and Examination Language

(1) ¹The consecutive Master's degree programme in Materials Science and Engineering consists of modules worth 120 ECTS credits. ²These include modules in the core subjects, elective modules, the Master's thesis module including presentation and discussion and further compulsory modules.

(2) It is possible to start the Master's degree programme in either the winter or summer semester.

(3) The provisions in Section 30 (3)(2) **ABMPO/TechFak** do not apply to related degree programmes.

(4) ¹In deviation from Section 4 (5) **ABMPO/TechFak**, the teaching and examination language in the Master's degree programme is English. ²Individual teaching units and examinations in (compulsory) elective modules may be held in German. ³This shall not affect the rest of Section 4 (5) **ABMPO/TechFak**.

Part II: Special Provisions

1. Bachelor's Examination

Section 38 Scope of the Grundlagen- und Orientierungsprüfung

(1) The Grundlagen und Orientierungsprüfung, GOP, shall consist of the following modules set forth in Appendix 1.

1. B1: Mathematics for MWT 1
2. B2: Mathematics for MWT 2
3. B11: Foundations of materials
4. B12: Materials: Mechanical properties and processing.

(2) The type and scope of the examinations and the ECTS credits allocated to the modules are set forth in **Appendix 1**.

(3) The Grundlagen und Orientierungsprüfung shall have been passed if the modules listed in (1) worth 35 ECTS credits have been passed.

Section 39 Structure of the Bachelor's Degree Programme, Scope and Structure of the Bachelor's Examination

(1) ¹All modules in the Bachelor's degree programme are compulsory. ²The distribution across the semesters and the required number of ECTS credits to be obtained in each of the modules are set forth in **Appendix 1**.

(2) The Bachelor's examination shall consist of:

1. The examinations of the preliminary examination according to Section 38 (1)
2. The examinations in modules B3–B10 and B13–B20
3. Bachelor's thesis (module B21).

(3) The type and scope of the examination and course achievements for the modules are set forth in **Appendix 1**.

(4) ¹In modules B15 and B16 (Materials 1 and 2), students choose four lectures from the compulsory elective modules on offer. These topics are tested in the written examination. ²The laboratory courses Materials 1 and Materials 2 are compulsory. ³If **Appendix 1** does not state any specific options, students shall choose modules from the module handbook.

Section 40 Requirements for Admission to Bachelor's Thesis

¹The sixth semester is recommended for completing the Bachelor's thesis. ²Admission to the Bachelor's thesis shall be governed by Section 27 (3)(2) **ABMPO/TechFak**.

Section 41 Bachelor's Thesis

(1) ¹The Bachelor's thesis is intended to enable students to learn to solve problems relating to materials science and engineering independently. ²Requirements for the thesis shall be such that it can be completed with a workload of approximately 300 hours. ³The results of the Bachelor's thesis shall be presented in a presentation with a maximum length of 30 minutes followed by a discussion. ⁴The date of the presentation shall be determined by the supervising lecturer at the latest when the student submits their Bachelor's thesis and the student shall be informed of the date in good time. ⁵A total of 12.5 ECTS credits shall be awarded for the Bachelor's thesis including the presentation.

(2) The topic of the Bachelor's thesis shall be allocated by a full-time university lecturer or Privatdozent from the Department of Materials Science and Engineering at FAU.

Section 42 Evaluation of Achievements for the Bachelor's Degree Programme

¹The Bachelor's degree programme shall have been passed once the student has passed all modules pursuant to **Appendix 1** and has acquired 180 ECTS credits. ²Proof of having completed three months industrial internship approved by a study advisor as part of module B20 (industrial internship) shall be governed by the internship guidelines stipulated in the module handbook.

2. Master's Examination

Section 43 Qualification for a Master's Degree, Certificates and Admission Requirements

(1) ¹A subject-specific degree pursuant to Section 29 (1)(1) alt. 1 **ABMPO/TechFak** is a Bachelor's degree in Materials Science and Engineering pursuant to these degree programme and examination regulations or in Nanotechnology pursuant to **FPONT**, or an equivalent degree from an institute of higher education in Germany or abroad from one of the relevant areas (Materials Science, Materials Science and Engineering, Nanomaterials and Nanotechnology). ² Subject-related degrees that show no considerable differences in terms of qualification pursuant to Section 29 (1)(1) alt. 2 **ABMPO/TechFak** shall be Bachelor's or Diplom degrees in Chemistry, Physics, Mechanical Engineering, Process Engineering and degree programmes with a broad focus on topics related to materials science and engineering, provided the following minimum content was covered:

1. at least 10 ECTS credits in mathematics
2. at least 20 ECTS credits in physics and chemistry
3. at least 10 ECTS credits in practical courses and IT
4. at least 20 ECTS credits in the foundations of materials science.

³In accordance with (5)(4) of the **Appendix to ABMPO/TechFak**, applicants with a subject-related degree or an equivalent degree as defined in sentence 2 shall only be admitted to the Master's degree programme after passing an oral admission examination according to (3).

(2) ¹As stipulated in subsection (2)(4) of the **Appendix to ABMPO/TechFak**, applicants are required to provide additional proof of English language skills equivalent to at least Level B2 of the Common European Framework of Reference (CEFR) by submitting either relevant school reports or certificates issued by a language school or university.

²The following are considered suitable proof of language skills:

1. A school leaving certificate or another certificate issued by the school providing evidence that English courses have been taken at school up until a level equivalent to B2 CEFR
2. A certificate indicating that the applicant has successfully passed the Test of English as a Foreign Language (TOEFL), attaining at least 85 points in the iBT test
3. A certificate from the International English Language Testing System (IELTS) with a grade of 5.0 or above;

other possible alternatives for proving evidence of language proficiency are listed in the table of equivalence published by the FAU Language Centre. ³Proof of language proficiency does not need to be submitted if the applicant acquired their university entrance qualification or relevant undergraduate degree in English.

(3) Applicants shall be deemed as qualified for the Master's degree programme in Materials Science and Engineering according to paragraph 5 (2)(2) of the **Appendix to ABMPO/TechFak** if they have passed the compulsory subject-related or degree-programme specific modules B11, B12 and B13 from the Bachelor's degree programme in Materials Science and Engineering according to these examination regulations with an average module grade of 3.0 or better.

(4)¹ In the oral admission examination according to (5)(3) et seq. of the **Appendix to ABMPO/TechFak**, applicants shall be evaluated according to the following criteria and weighting:

1. Subject-specific basic knowledge in materials science and materials processing (in particular material structures, mechanical, optical, electronic and magnetic properties of materials and characterisation methods) (50 percent) and
2. Good knowledge of a field of specialisation corresponding to the core subjects available in the Master's degree programme; the applicant shall choose the core subjects to be discussed during the interview (50 percent).

²The choice of core subjects in the Master's degree programme is not dependent on the choice made for the admission examination pursuant to no.2.

Section 44 Scope and Structure of the Master's Degree Programme

¹As stipulated in **Appendix 2**, the Master's degree programme shall consist of.

1. Core subject 1 modules, consisting of one foundation module, one supplementary module and two elective modules (M1 to M4)
2. Core subject 2 modules, consisting of one foundation module and one supplementary module (M6, M7)
3. Core subject 3 modules, consisting of one foundation module in minor subject and one supplementary module in minor subject (M8, M9)
4. Core subject elective module (M5), that must be chosen from one of the three core subject areas
5. Elective modules (M10, M11)
6. as well as the academic project (M12), soft skills (M13) and Master's thesis with presentation (M14) modules.

²Modules M12 and M14 shall be taken in a core subject in which at least 25 ECTS credits have been achieved; the core subject elective module (M5) and modules M10 or M11 should be chosen accordingly. ³Module M13 shall be taken in one of the three core subjects.

Section 44a Core Subject Module (Foundation, Supplementary and Elective Modules M1 – M9)

(1) ¹The learning outcome of the core subject modules M1 to M9 is for students to expand their subject-related skills in three core specialisation areas in materials science and engineering by using scientific methods in theory and in laboratory practice. ²This should allow them to acquire skills of relevance to research. ³The choice of three core subjects ensures that students acquire a broad and well-founded subject knowledge. ⁴The learning outcome for the core subject modules is to give students the opportunity to choose their individual focus and tailor their profile in view of their future career and/or personal development. ⁵The laboratory courses allow students to put the theory they have covered into practice.

(2) ¹Each Chair in the Department of Materials Science and Engineering offers one core subject. ²Students must choose three core subjects. ³The first core subject shall comprise at least modules M1 to M4 (25 ECTS credits) chosen from the modules offered by one chair. ⁴For the second core subject, students shall select modules M6 and M7 (15 ECTS credits) from the modules offered by a second chair. ⁵For the third core subject, students shall select modules M8 and M9 (15 ECTS credits) from the modules offered by a third chair. ⁶Due to the requirement to acquire specific subject knowledge pursuant to Section 4 (3) **ABMPO/TechFak**, modules may not overlap or be taken more than once. ⁷Module M5 (5 ECTS credits) is chosen from the modules offered by the three chairs in the core subjects and allows students to specialise further in a particular subject.

(3) ¹By choosing core subjects, students define the subject-specific profile of their degree programme. ²The core subjects depend on the key research priorities of the chairs at the Department of Materials Science and are listed in the study guide to Materials Science and Engineering. ³The choice of core subjects becomes binding at the latest once students are admitted for the first time to the examinations.

(4) ¹The core subject foundation modules M1, M6 and M8 generally consist of lectures (4 SWS), tutorials (2 SWS) and a laboratory course (2 SWS), or lectures (4 SWS), tutorials (2 SWS) and a seminar (2 SWS), or a combination of lectures, tutorials, laboratory courses and a seminar coming to a total of 8 SWS. ²The core subject supplementary modules M2, M7 and M9 generally consist of one lecture (2 SWS) and one tutorial (2 SWS), or one lecture (1 SWS), one laboratory course (2 SWS) and one seminar (1 SWS), or one laboratory course (4 SWS). ³The elective modules M3, M4 and M5 generally consist of one lecture (2 SWS) and one laboratory course (2 SWS) or one lecture (1 SWS), one tutorial (1 SWS) and one practical course (2 SWS). ⁴Any deviations and the exact structure of the modules are stipulated in the module handbook.

(5) ¹The type and scope of the examination and/or course achievements depend on the skills taught in the respective modules pursuant to (1). Details and the recommended distribution of modules across the standard duration of study are stated in **Appendix 2** and the module handbook. ²Examinations in the modules shall take one of the following forms: written examination (90 or 45 min), oral examination (30 or 15 min), seminar achievement or practical achievement pursuant to Section 6 (3) **ABMPO/TechFak**. ³Section 6 (2)(3) **ABMPO/TechFak** stipulates that in justified exceptional circumstances, combinations of the individual achievements stated in sentence 2 may also be possible. ⁴Other examination forms are possible if so decided by the

Degree Programme Committee. ⁵The module handbook is published before the beginning of the semester in accordance with local practice.

Section 44b Elective Modules (M10–M11)

(1) ¹The learning outcome of the compulsory elective modules M10 to M11 is for students to gain more advanced knowledge and expand their subject-related skills relevant to research in the area of materials science and engineering with specific reference to their chosen areas of specialisation. ²The choice of compulsory elective modules, in particular in combination with the choice of core subject modules M1 to M9, gives students the opportunity to tailor their profile in view of their future careers.

(2) ¹The elective modules worth 5 ECTS credits each may be chosen from those modules offered by the Department of Materials Science and from modules offered by different departments at the Faculty of Engineering. ²No more than 40 ECTS credits may be attained in modules from any one chair. ³No modules may be taken twice, see Section 4 (3) **ABMPO/TechFak**. ⁴Foundation and supplementary modules in the core subjects may not be submitted as elective modules.

(3) ¹The elective modules M10 and M11 generally consist of one lecture (1 SWS), one tutorial (1 SWS) and one laboratory course (2 SWS), one lecture (1SWS), one tutorial (1 SWS) and one seminar (2 SWS), or one laboratory course (4 SWS). ²Any deviations and the exact structure of the modules are stipulated in the module handbook.

(4) ¹The type and scope of the examination and/or course achievements depend on the skills taught in the respective modules pursuant to (1). Details and the recommended distribution of modules across the standard duration of study are stated in **Appendix 2** and the module handbook. ²Examinations in the modules shall take one of the following forms: written examination, oral examination, seminar achievement or practical achievement pursuant to Section 6(3) **ABMPO/TechFak**. ³ Section 6 (2)(3) **ABMPO/TechFak** stipulates that in justified exceptional circumstances, combinations of the individual achievements stated in sentence 2 may also be possible. ⁴Other examination forms are possible if so decided by the Degree Programme Committee. ⁵The module handbook is published before the beginning of the semester in accordance with local practice.

(5) Notwithstanding (3) and (4), details of the type and scope of examinations and teaching units in modules imported from other degree programmes shall be stipulated in the relevant **(degree programme) and examination regulations** and the module handbook.

Section 44c Academic Project (M12)

(1) ¹The learning outcome of the Academic project module (M12) is for students to independently gather, assess, interpret and provide a clear and concise summary of scientifically and technologically relevant information on a research area of relevance for their Master's thesis. ²The aim of the practical work is to enable students to put the knowledge they have gained from literature into practice. ³The choice of the topic for the academic project therefore determines the topic of the Master's thesis.

(2) ¹The Academic project module usually consists of an advanced seminar (4 SWS) and self-study (8 SWS). ²Any deviations and the exact structure of the modules are stipulated in the module handbook.

(3) ¹The type and scope of the examination and/or course achievements depend on the skills taught in the respective modules pursuant to (1). Details and the recommended distribution of modules across the standard duration of study are stated in **Appendix 2** and the module handbook. ²The module handbook is published before the beginning of the semester in accordance with local practice.

Section 44d Soft Skills (M13)

(1) ¹The first learning outcome of the module “soft skills” is to allow students to acquire relevant skills that will enable them to present and discuss scientific results and findings independently in a topic covered in the Master’s degree programme. ²A second learning outcome is aimed at promoting personal and social skills through preparing, reporting on and presenting a topic relating to the subject for a specialist audience at a Master’s level and in a manner tailored to suit the target group, as well as working under supervision in a group to develop and test subject-related applications and possibilities for implementation with respect to the chosen subject. ³Thirdly, the choice of excursions allows students to tailor their profile in view of their career plans and/or their own personality. ⁴Section 44 (3) applies.

(2) ¹The type and scope of the examination are dependent on the skills for the relevant module according to paragraph (1) and the module handbook. ² Students have to complete one ungraded seminar achievement for each module pursuant to Section 6 (3) **ABMPO/TechFak**, depending on the specific manner in which the module is taught. ³In addition, students must show that they have taken part in at least two excursions. ⁴The module handbook is published before the beginning of the semester in accordance with local practice.

(3) ¹The module generally consists of one seminar in presentation skills (4 SWS) and two excursions. ²Any exceptions are detailed in the module handbook.

Section 45 Master’s Thesis, Admission Requirements

(1) ¹In order to qualify for admission to the Master’s thesis (Module M14 in **Appendix 2**), students shall be required to successfully complete modules pursuant to **Appendix 2** worth at least 60 ECTS credits. ² The topic of the Master’s thesis shall be allocated by a full-time university lecturer or Privatdozent from the Department of Materials Science and Engineering at FAU.

(2) ¹30 ECTS credits shall be awarded for the Master’s thesis including the presentation. ²The Master’s thesis module consists of the Master’s thesis (27.5 ECTS credits) and a presentation followed by a discussion (2.5 ECTS credits). ³The two graded parts of the examination shall be weighted as follows when determining the total grade for the module: Master’s thesis (90%) and presentation with discussion 10%.

(3) ¹The Master’s thesis is intended to demonstrate students’ ability to solve scientific problems in the field of materials science and engineering independently. It shall usually deal with a scientific subject from one of the three core subjects. ²Requirements for the thesis shall be such that it can be completed with a workload of approximately 825 hours. ³The Master’s thesis shall be written in English.

(4) ¹In addition to the Master’s thesis, students shall hold a presentation lasting approximately 30 minutes presenting the Master’s thesis and its results, followed by a

discussion. ²The date of the presentation shall be determined by the supervisor at the latest by the date the Master's thesis is due, and the student shall be informed of the date in good time.

Section 46 Evaluation of Achievements for the Master's Degree Program; Certificate

The Master's degree programme shall have been passed once the student has passed all modules pursuant to **Appendix 2** and has acquired 120 ECTS credits.

Part III: Final Provisions

Section 47 Legal Validity and Transitory Provisions

(1) ¹These degree programme and examination regulations shall come into effect on 1 October 2007. ²They shall apply to all students who start the Bachelor's degree programme in Materials Science and Engineering in winter semester 2007/2008 or later.

(2) ¹All students who are already studying a Diploma, Bachelor's or Master's degree programme in Materials Science and Engineering at FAU or who start a Master's degree programme before winter semester 2010/11 shall complete their studies on the basis of the degree programme and examination regulations for the Diplom, Bachelor's and Master's degree programmes in Materials Science and Engineering at FAU (FPOWW) dated

- 1) 20 August 2004,
- 2) 13 December 2000, last amended by statute of 10 April 2003
- 3) 29 September 1977, last amended by statute of 9 October 1996

²The examinations according to sentence 1 shall be conducted for the last time in the following examination periods:

- 1) Preliminary (Vordiplom) examination after summer semester 2009,
- 2) Diplom examination after summer semester 2013,
- 3) Bachelor's examination after winter semester 2010/2011,
- 4) Master's examination after summer semester 2013.

³The Examinations Committee may grant exceptions in individual cases if application of this provision would lead to unintended cases of hardship.

(3) At the same time as these degree programme and examination regulations come into effect, the degree programme and examination regulations mentioned in (2)(1) for the Diplom, Bachelor's and Master's degree programmes in Materials Science and Engineering at FAU shall become invalid, subject to the provisions in (2).

(4) ¹The seventh amendment statute shall come into effect on the day after its publication. ²It shall apply to all students starting a degree programme from winter semester 2020/2021 onwards. ³Examinations in accordance with previous versions of these degree programme and examination regulations will be offered for the last time in summer semester 2025 for the Bachelor's degree programme and in winter semester 2023/2024 for the Master's degree programme. ⁴From the date stated in sentence 3, those students who are affected by the examination regulations becoming invalid shall take their examinations in accordance with the version of the degree programme and examination regulations valid from this date on.

(5) ¹The eighth amendment statute shall come into effect on 1 October 2021. ²It shall apply to all students studying in accordance with **FPOMWT** dated 6 March 2020 at the time the amendment statute comes into effect or those who intend to start the Master's degree programme in the future. ³Notwithstanding sentence 2, the amendments concerning the change to the name of the Master's degree programme and those stipulated in Sections 37(4), 43 and 45 (3)(3) shall apply to all students intending to start the Master's degree programme as of winter semester 2022/2023.

Appendix 1: Structure of the Bachelor's Degree Programme in Materials Science and Engineering

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination	
			L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	5th sem.	6th sem.		
B1	Mathematics for MWT 1 (GOP)	Mathematics for MWT 1	4	2			7.5	7.5							EA (written examination, 90 min) + CA (TA)
B2	Mathematics for MWT 2 (GOP)	Mathematics for MWT 2	4	2			7.5		7.5						EA (written examination, 90 min) + CA (TA)
B3	Mathematics for MWT 3	Mathematics for MWT 3	4	2			7.5			7.5					EA (written examination, 90 min) + CA (TA)
B4	Experimental physics I	Experimental physics I	3	1			5	5							EA (written examination, 90 min)
B5	Experimental physics II	Experimental physics II	3	1	2		7.5		7.5						EA (written examination, 90 min) + CA (LA)
B6	Structural physics/crystallography	Structural physics/crystallography for materials science and engineering	3	1			5			2.5	2.5				EA (written examination, 90 min) + CA (LA)
		Laboratory course: Physics II (Structural physics)			2										
B7	Inorganic chemistry	General and inorganic chemistry	4				12.5	7.5	5						EA (written examination, 45 min) + CA (LA)
		Laboratory: Inorganic chemistry for minor subject students			8										
B8	Physical chemistry	Physical chemistry for materials science and engineering and nanotechnology	2	2			5				5				EA (written examination, 90 min)
B9	Applied mechanics: Statics and mechanics of materials	Applied mechanics I+II (Statics and strength of materials)	3	4			7.5			7.5					EA (written examination, 90 min)
B10	Foundations of product development	Foundations of product development	4	2			7.5			7.5					EA (written examination, 120 min)
B11	Foundations of materials (GOP)	Materials structure/Metallic materials	3	1			10	4.5							EA (written examination, 90 min)
		Non-metallic inorganic materials	2					2.5							
		Organic materials	2	1				3							
B12	Materials: Mechanical properties and processing (GOP)	Mechanical properties	1.5	0.5			10		2.5					EA (written examination, 90 min) + CA (LA)	
		Further processing of materials	2						2.5						

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination
			L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	5th sem.	6th sem.	
		Introductory laboratory course GP 1			5			5						
B13	Materials: Physical properties and characterisation	Characterisation and inspection of materials	2				10				2.5			EA (written examination, 90 min) + CA (LA)
		Electric, magnetic, and optic properties	2							2.5				
		Introductory laboratory course in Materials Science and Engineering GP 2			5									
B14	Physical chemistry of materials	Solid state thermodynamics	1	1			5				2.5			EA (written examination, 90 min)
		Solid-state kinetics	1	1						2.5				
B15	Materials 1, see Section 39 (4)	General material properties	2				15					3		EA (written examination, 150 min) + CA (LA)
		Materials simulation	2								3			
		Materials science and engineering for metals	2								3			
		Corrosion and surface technology	2								3			
		Micro and nanostructure research	2								3			
		Laboratory: Materials 1			3						3			
B16	Materials 2, see Section 39 (4)	Glass and ceramics	2				15					3		EA (written examination, 150 min) + CA (LA)
		Biomaterials	2								3			
		Polymer materials	2								3			
		Materials in electrical engineering	2								3			
		Further lecture on chosen option, see Section 39 (4)	2								3			
		Laboratory: Materials 2			3						3			

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination
			L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	5th sem.	6th sem.	
B17	Literature research and presentation techniques	Advanced seminar in English				3	5					3.5		EA (seminar presentation 20 min) + SA ¹
		English for Engineers		2							1.5			
B18	Foundations of Computer Application in MWT	Foundations of Computer Application in MWT	2	2			5				5			EA (written examination, 60 min)
B19	Business administration for engineers	Business administration for engineers I and II	3	1			5					2.5	2.5	EA (written examination, 60 min)
B20	Professional environment	Industrial internship ²					15						14	CA (LA) + Excursion achievement 1 day
		excursion											1	
B21	Bachelor's thesis	Bachelor's thesis					12.5						10	EA (Bachelor's thesis, 80%) + EA (presentation, 30 min and discussion, 20%)
		Advanced seminar Bachelor's thesis											2.5	
Total SWS and ECTS credits:			71.5	26.5	28	3	180	30	30	30	30	30	30	
Total SWS:														

¹ The type and scope of the examination depend on the specific manner in which the module is taught; see module handbook for details. As a rule, the course achievement shall consist of homework exercises taking the form of online exercises or a short presentation.

²See Section 42 (2).

Key:

GOP Grundlagen- und Orientierungsprüfung; Preliminary examination

EA = graded examination achievement, see Section 6 (3)(7) **ABMPO/TechFak**.

CA = ungraded course achievement, see Section 6 (3) sentence 8 **ABMPO/TechFak**.

WE = written examination

O = oral examination

TA = tutorial achievement, see Section 6 (3) sentence 3 and 5 **ABMPO/TechFak** and module handbook

LA = laboratory achievement, see Section 6 (3) sentences 3 and 5 **ABMPO/TechFak** and module handbook

SA = seminar achievement, see Section 6 (3) sentence 4 and 5 **ABMPO/TechFak** and module handbook

BA: Bachelor's thesis

Appendix 2: Degree programme structure for Master's degree programme in Materials Science and Engineering

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits				Type and scope of the examination
			L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	
M1	Core subject 1 – Foundation module (compulsory) ¹		4	(0-4)	(0-4)	(0-2)	10	5	5			EA (written examination, 90 min or oral, 30 min or seminar achievement, or laboratory achievement) ¹
M2	Core subject 1 – Supplementary module (compulsory) ¹		(0-2)	(0-2)	(0-4)	(0-2)	5	2	3			EA (written examination, 45 min or oral, 15 min or seminar achievement, or laboratory achievement) ¹
M3	1. Elective module in materials science and engineering from core subject 1 ¹		(0-2)	(0-2)	(0-4)	(0-2)	5	5				EA (written examination, 45 min or oral, 15 min or seminar achievement, or laboratory achievement) ¹
M4	2. Elective module in materials science and engineering from core subject 1 ¹		(0-2)	(0-2)	(0-4)	(0-2)	5		5			EA (written examination, 45 min or oral, 15 min or seminar achievement, or laboratory achievement) ¹
M5	Elective module in materials science and engineering from one of the three core subjects ¹		(0-2)	(0-2)	(0-4)	(0-2)	5	5				EA (written examination, 45 min or oral, 15 min or seminar achievement, or laboratory achievement) ¹
M6	Core subject 2 – Foundation module (compulsory) ¹		4	(0-4)	(0-4)	(0-2)	10	5	5			EA (written examination, 90 min or oral, 30 min or seminar achievement, or laboratory achievement) ¹
M7	Core subject 2 – Supplementary module (compulsory) ¹		(0-2)	(0-2)	(0-4)	(0-2)	5	2	3			EA (written examination, 45 min or oral, 15 min or seminar achievement, or laboratory achievement) ¹
M8	Core subject 3 / Foundational module in minor subject (compulsory) ¹		4	(0-4)	(0-4)	(0-2)	10	5	5			EA (written examination, 90 min or oral, 30 min or seminar achievement, or laboratory achievement) ¹
M9	Core subject 3 / Supplementary module in minor subject (compulsory) ¹		(0-2)	(0-2)	(0-4)	(0-2)	5	2	3			EA (written examination, 45 min or oral, 15 min or seminar achievement, or laboratory achievement) ¹
M10	1. Elective subject (from Faculty of Engineering incl. Materials Science and Engineering) ²		(0-2)	(0-2)	(0-4)	(0-2)	5			5		EA ²
M11	2. Elective subject (from Faculty of Engineering incl. Materials Science and Engineering) ²		(0-2)	(0-2)	(0-4)	(0-2)	5			5		EA ²

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits				Type and scope of the examination
			L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	
M12	Academic project ³	Literature research and methods				8	15			10		SA ⁶⁾
		Advanced seminar				4				5		
M13	Soft skills ⁴	Presentation techniques				4	5			4		CA ⁴
		2 excursions								1		
M14	Master's thesis	Master's thesis									27.5	EA (MT) + EA (presentation, 30 min and discussion) (90 % + 10 %)
		Presentation									2.5	
Total SWS and ETCS credits:			12-28	0-28	0-44	12-34	120	31	29	30	30	
Total SWS:												

¹ cf. Section 44a

² cf. Section 44b.

³ cf. Section 44c.

⁴ cf. Section 44d.

Key:

EA = graded examination achievement, see Section 6 (3)(7) **ABMPO/TechFak**.

CA = ungraded course achievement, see Section 6 (3) sentence 8 **ABMPO/TechFak**.

WE = written examination

O = oral examination

LA = laboratory achievement, see Section 6 (3) sentences 3 and 5 **AMBPO/TechFak** and module handbook

SA = seminar achievement, see Section 6 (3) sentence 4 and 5 **ABMPO/TechFak** and module handbook

MT = Master's thesis