



Subject-Specific Study and Examination Regulations for the English-taught Master's Programme in Advanced Materials offered jointly by the Faculty of Natural Sciences, the Faculty of Engineering and Computer Science as well as the Medical Faculty at Ulm University of 10 March 2015

In accordance with § 34 (1) in conjunction with 19 (1) sentence 2 no. 9 of the Higher Education Act for Baden-Württemberg (*Landeshochschulgesetz = LHG*) in the version of 1 January 2005 (Law Gazette p. 1 ff), amended several times, most recently by article 1 of the third law on changes to regulations in higher education (*Drittes Hochschulrechtsänderungsgesetz*) of 1 April 2014 (Law Gazette no. 6 p. 99 ff), the Senate of Ulm University, in its meeting of 25 February 2015, adopted the following Subject-Specific Study and Examination Regulations for the English-taught master's programme in Advanced Materials. The President of Ulm University approved these on 10 March 2015 in accordance with § 32 (3) sentence 3 *LHG*.

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Preliminary remarks on language use

According to Article 3 (2) Basic Law men and women have equal rights; all male designations of persons and positions used in this General Framework apply equally to men and women.

I. General provisions

§ 1 Scope of application

- (1) These Subject-Specific Study and Examination Regulations contain specific regulations for the master's programme in Advanced Materials.
- (2) The Subject-Specific Study and Examination Regulations supplement the General Provisions for Study and Examination Regulations regarding Bachelor's and Master's Programmes at Ulm University (General Framework). In case of doubt, the General Framework has priority.

§ 2 Programme objectives, academic degrees (General Framework, § 2)

- (1) The master's programme in "Advanced Materials" is a research-oriented degree programme. It aims to enable graduates to independently work on problems in the field of materials science related to the fact that properties of materials can be significantly influenced by altering their structure on a nanometric scale. To do so, students are trained to apply methods from **the** natural and engineering sciences; if they select the specialisation "Biomaterials" these are **complemented** by approaches and techniques from medicine and biology. In both specialisations, i.e. "Nanomaterials" and "Biomaterials", the study objective is to acquire knowledge and skills qualifying graduates to work in research and development in the fields of natural and engineering sciences as well as in materials science of biocompatible materials, especially at universities, research institutes and those sectors of the industry that engage in research and development. Students select their specialisation, i.e. "Nanomaterials" or "Biomaterials", not later than at the start of the lecture period of their second semester in the programme.
- (2) Ulm University offers the consecutive master's programme in "Advances Materials" leading to the academic degree of "Master of Science" ("M.Sc.").

§ 3 Beginning of the programme (General Framework, § 3)

The master's programme in Advanced Materials begins in the winter semester.

§ 4 Standard period of study (General Framework, § 5)

The standard period of study of the master's programme is four semesters.

§ 5 Deadlines (General Framework, § 6 (9))

- (1) Students must have taken and passed all first-semester examinations in accordance with § 14 (2) no. 1, 2a, 3, 5 and 6 by the end of the examination period of their third semester in the programme. They must have earned a minimum of 83 ECTS credits from (partial) module examinations in compulsory and compulsory elective modules by the end of the examination period of their fifth semester in the programme.

- (2) The right to examination expires if the student does not earn the number of ECTS specified in paragraph 1 above during the period specified in paragraph 1 above unless they are not responsible for their failure to obtain the required number of ECTS within the specified deadlines.

§ 6 Types of courses and examinations

Objectives and contents of the programme are conveyed in the following types of courses:

- lectures
- classes
- tutorials
- laboratory courses
- project work
- seminars
- field trips

Examinations may be written or oral.

§ 7 Courses and examinations in English (General Framework, § 7)

The language of instruction and examinations is English.

§ 8 Subject examination board (General Framework, § 10)

- (1) A subject examination board is formed for the master's programme in "Advanced Materials".
- (2) The subject examination board has 7 members. It is composed of four full-time lecturers and full-time professors of Ulm University, one from the Faculty of Engineering and Computer Science, one from the Medical Faculty and two from the Faculty of Natural Sciences; one academic staff member from any of the faculties involved in the programme; and two students in an advisory capacity. The students are to be from different semesters in the master's programme in "Advanced Materials". The term of office of the university lecturers, the full-time professors of Ulm University and the member of the academic staff is three years; the term of office of the student members is one year. Reappointment is possible.
- (3) The subject examination board decides in cases of doubt covered by neither these examination regulations nor the General Framework.

§ 9 Organisation of module examinations (General Framework, § 13)

Written examinations held during the first examination period fall under the provisions of §13 (1) of the General Framework. Deviating from the recommendations made in § 13 (1) of the General Framework, written module examinations within the second examination period are held, as a rule, in the last week before and in the first two weeks of the following lecture period.

§ 10 Related study programmes (General Framework, § 14)

Related study programmes as defined in § 14 of the General Framework are, in particular, study programmes in materials science.

§ 11 Provisions regarding the module master's thesis (General Framework, § 16c)

- (1) The master's thesis corresponds to 30 ECTS. Students have six months to complete the master's thesis. This period may be extended by up to three months upon approval of the examination board.
- (2) The master's thesis comprises a presentation of approx. 45 minutes including a discussion of the contents and the obtained research results presented in the master's thesis.
- (3) If the master's thesis is done outside Ulm University in accordance with § 16c (5) of the General Framework, a supervision plan must be submitted outlining the planned work and showing the approval of the external advisor.
- (4) The master's thesis must be submitted to the *Studiensekretariat* (student administration and examinations office) in two bound copies and one electronic copy (pdf) in accordance with § 16c (9) sentence 2 of the General Framework.
- (5) The master's thesis must be written in English.

§ 12 Assessment of module examinations (General Framework, § 17)

- (1) The modules counting towards the overall grade of the master's examination are the modules marked as such in § 14 and the master's thesis.
- (2) The calculation of the overall grade of the master's examination is based on the module results in accordance with § 17 (3) of the General Framework. The grade of the master's thesis is considered in double weighting.

§ 13 Retake of module examinations (General Framework, § 20)

- (1) (Partial) module examinations can be retaken twice.

II. Master's examination

§ 14 Study contents, admission to (partial) module examinations

(1) All modules conclude with a module examination or several partial module examinations.

(2) The following modules must be completed:

No.	Modules	C/ CE	ECTS	Type of exam*1	Semester	Counting towards final grade
A Compulsory modules						
1	Mathematics	C	5	written/oral	1	yes
2	Physics I	C	10		1/2	yes
2a	<i>Physics I Lecture</i>	C	5	<i>written/oral</i>	1	
2b	<i>Physics Lab</i>	C	5	<i>written/oral/ ungraded</i>	2	
3	Chemistry	C	4	written/oral	1	yes
4	Materials Chemistry	C	4	written/oral	2	yes
5	Materials and Engineering Science	C	9		1	yes
5a	<i>Materials Science I</i>	C	5	<i>written/oral</i>	1	
5b	<i>Electrical Engineering</i>	C	4	<i>written/oral</i>	1	
6	Biology	C	4	written/oral	1	yes
7	Scientific Method Training	C	3	written/oral	2	yes
B1 Specialisation Nanomaterials						
8	Materials Science Lab	CE	5	written/oral	2	yes
9	Physics II	CE	5	written/oral	2	yes
	Compulsory elective module 10 or 11					
10	Advanced Materials Science	CE	5	written/oral	2	yes
11	Compound Semiconductors	CE	5	written/oral	2	yes
	Two out of the three compulsory elective modules 12 to 14					
12	Compulsory elective module Physics	CE	14	written/oral	3	yes
13	Compulsory elective module Chemistry	CE	14	written/oral	3	yes
14	Compulsory elective module Materials and Engineering Science	CE	14	written/oral	3	yes

No.	Modules	C/CE	ECTS	Type of exam	Semester	Counting towards final grade
B2 Specialisation Biomaterials						
15	Biomaterials in Medicine	CE	5	written/oral	2	yes
16	Advanced Biology	CE	10		2	yes
16a	<i>Biology II Lecture</i>	CE	5	<i>written/oral</i>	2	
16b	<i>Biology Lab</i>	CE	5	<i>written/oral/ungraded</i>	2	
	Two out of the three compulsory elective modules 17 to 19					
17	Compulsory elective module Soft Matter/Biophysics	CE	14	written/oral	3	yes
18	Compulsory elective module Chemistry	CE	14	written/oral	3	yes
19	Compulsory elective module Biomaterials in medicine	CE	14	written/oral	3	yes
C Transferable Skills						
20	Transferable skills	CE	8	written/oral	1,2,3	no
D Master's Thesis						
21	Master's thesis	C	30	written	4	yes (x2)

C = compulsory, CE = compulsory elective

- (3) Regarding the choice of compulsory elective modules under paragraph 2 no. 12 to 14 and no. 17 to 19, the teaching staff responsible for the laboratory course makes a recommendation as to which lecture or lectures should be attended parallel to the laboratory course.
- (4) Students who are native speakers of German as well as foreign nationals with an excellent command of German (corresponding to DHS-1) must take a course from the Transferable Skills offer ("ASQ") of Ulm University within the module Transferable Skills. These courses must be approved by the examination board and must be notified to the *Studiensekretariat* (student administration and examinations office). Students who do not fall under sentence 1 above must earn a total of 8 ECTS from the courses "German I – III" to meet the requirements of the module Transferable Skills. "German I-III" courses require 85 % attendance to be admitted to the examination. In exceptional cases, the examination board decides what type of achievement is acceptable.

§ 15 Subject-specific requirements for admission to the master's thesis

Students may only be admitted to the master's thesis after having earned a minimum of 83 ECTS from modules completed as part of the master's programme.

III. Final provisions

§ 16 Effective date

- (1) These Study and Examination Regulations take effect from the winter semester 2015/16. They are published in the Official Bulletin (“Amtliche Bekanntmachungen”) of Ulm University. The Subject-Specific Study and Examination Regulations for the English-taught master’s programme in “Advanced Materials” offered by the Faculties of Natural Sciences and Engineering and Computer Science as well as the Medical Faculty at Ulm University of 8 March 2012, published in the Official Bulletin (“Amtliche Bekanntmachungen”) of Ulm University, No. 12 of 12 March 2012, pages 121-126, cease to have effect.
- (2) Paragraph 1 does not apply to students enrolled in a higher semester of the master’s programme in Advanced Materials at Ulm University in the winter semester 2014/15. Such students complete their studies under the Subject-Specific Study and Examination Regulations for the English-taught master’s programme in “Advanced Materials” offered by the Faculties of Natural Sciences and Engineering and Computer Science as well as the Medical Faculty at Ulm University of 8 March 2012.

Ulm, 10 March 2015

signed

Prof. Dr. Karl Joachim Ebeling

- President -