Subject-Specific Study and Examination Regulations for the English Language Master Programme “Advanced Materials“ offered by the Faculties of Natural Sciences, Engineering and Computer Science as well as Medicine of Ulm University of 8 March 2012

At the proposal of the Faculties of Natural Sciences, Engineering and Computer Science as well as Medicine, the Senate of Ulm University, in its meeting of 16 February 2012, adopted the following regulations pursuant to section 19 (1) clause 2 no. 9 in conjunction with section 34 of the Law on Higher Education of the Land of Baden-Württemberg (LHG=“Landeshochschulgesetz”) (Law Gazette of 27 December 2005 p. 794ff), amended several times, last amended by article 5 of the Law on the Abolition of and Compensation for Tuition Fees and the Change of other Laws (“Studiengebührenabschaffungsgesetz - StuGebAbschG”) of 21 December 2011, Baden-Württemberg Law Gazette no. 22 p. 565ff). The President of Ulm University approved these on 8 March 2012 pursuant to section 34 (1) clause 3 LHG.

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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

Section 1 Scope of application

(1) These Subject-Specific Study and Examination Regulations contain specific regulations for the master programme “Advanced Materials”.

(2) The Subject-Specific Study and Examination Regulations supplement the General Provisions for Study and Examination Regulations regarding Bachelor and Master Programmes at Ulm University (General Framework). In case of doubt, the General Framework has priority.

Section 2 Study objectives, academic degrees (General Framework, section 2)

(1) The master programme “Advanced Materials” is a research-oriented study course. 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 significantly be influenced by altering their structure on a nanometric scale. To do so, students are trained to apply methods from natural and engineering sciences; if they select the specialty area “Biomaterials” these are supplemented by approaches and techniques from medicine and biology. In both specialty areas, i.e. “Nanomaterials” and “Biomaterials”, the study objective is to acquire knowledge and skills qualifying graduates to work in research and development in the areas 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 indicate their selection of specialty area, i.e. “Nanomaterials” or “Biomaterials”, when registering for their first examination in the master programme.

(2) Ulm University offers the consecutive master programme “Advanced Materials” leading to the academic degree of “Master of Science” (“M.Sc.”).

Section 3 Beginning of the programme (General Framework, section 3)

The master programme “Advanced Materials” begins in the winter semester.

Section 4 Standard period of study (General Framework, section 5)

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

Section 5 Deadlines (General Framework, section 6(9))

(1) By the end of the examination period of the fourth subject-specific semester in the master programme “Advanced Materials”, students must have completed (partial) module examinations pursuant to section 13 in compulsory and compulsory elective modules corresponding to a minimum of 83 credit points (CP). By the end of the examination period of the sixth subject-specific semester, students must have completed (partial) module examinations pursuant to
Section 7 Courses and examinations in English (General Framework, section 7)

The language of courses and examinations is English.

Section 8 Subject-specific board of examiners (General Framework, section 10)

(1) A subject-specific board of examiners is formed for the master programme “Advanced Materials”.

(2) The subject-specific board of examiners consists of 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 Faculty of Medicine and two from the Faculty of Natural Sciences; one scientific staff member from any of the faculties involved in the programme; and two students in an advisory capacity. The students shall be from different semesters in the master programme “Advanced Materials”. The term of office of the university lecturers, the full-time professors of Ulm University and the member of the scientific staff is three years; the term of office of the student members is one year. Reappointment is possible.

(3) The subject-specific board of examiners decides in cases of doubt covered by neither these examination regulations nor the General Framework.

Section 9 Organisation of module examinations (General Framework, section 13)

Deviating from the recommendations made in section 13(1) of the General Framework, written module examinations in the master programmes are held, as a rule, in the three weeks following the end of the lecture period of each semester; examination retakes are held in the two weeks after the beginning of the following lecture period.
**Section 10 Related study courses (General Framework, section 14)**

Related study courses as defined in section 14 of the General Framework are, in particular, physics and chemistry. The subject-specific board of examiners decides on the eligibility of study courses not mentioned in sentence 1.

**Section 11 Provisions regarding the module master thesis (General Framework, section 16c)**

(1) The master thesis corresponds to 30 CP. Students have six months to complete the master thesis. This period may be extended by up to three months after approval by the board of examiners.

(2) The master thesis comprises a presentation of approx. 45 minutes including a discussion of the contents and the obtained research results presented in the master thesis.

(3) If the master thesis is done outside Ulm University in accordance with section 16c(5) of the General Framework, a supervision plan must be submitted summarising the planned work and showing the approval by the external advisor.

(4) The master thesis must be submitted to the Student Administration Office (“Studiensekretariat”) in three bound copies and one electronic copy (pdf) in accordance with section 16c(9) sentence 2 of the General Framework.

(5) The master thesis must be written in English.

**Section 12 Assessment of module examinations (General Framework, section 17)**

(1) The modules counting towards the aggregate mark of the master examination are the modules marked as such in section 14 and the “Master thesis”.

(2) The calculation of the aggregate mark of the master examination is based on the module results in accordance with section 17(3) of the General Framework. The mark of the master thesis is considered in double weighting.

**Section 13 Retake of module examinations (General Framework, section 20)**

(1) Up to 4 failed (partial) module examinations may be retaken twice each after a failed attempt but only in the study year following the failed attempt. Where a student fails to take a (partial) module examination in the period specified in sentence 1, they lose the right to be examined unless they are not responsible for exceeding the deadline.

(2) If a student fails to pass a retake in a compulsory elective module, he or she may, after undergoing course guidance, change to another compulsory elective module. Such a change is possible only once.
II. Master examination

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

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

(2) The following modules must be completed:

a) Specialty area Nanomaterials:

<table>
<thead>
<tr>
<th>No.</th>
<th>Module</th>
<th>C/CE</th>
<th>CP</th>
<th>Course type*</th>
<th>Type of exam*</th>
<th>Semester</th>
<th>Counts towards final mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Materials Science I</td>
<td>C</td>
<td>10</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>2</td>
<td>Materials Science II</td>
<td>C</td>
<td>10</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>2</td>
<td>yes</td>
</tr>
<tr>
<td>3</td>
<td>Chemistry</td>
<td>C</td>
<td>11</td>
<td>L, S</td>
<td>wr or o</td>
<td>1,2</td>
<td>yes</td>
</tr>
<tr>
<td>4</td>
<td>Physics</td>
<td>C</td>
<td>9</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>1,2</td>
<td>yes</td>
</tr>
<tr>
<td>5</td>
<td>Engineering</td>
<td>C</td>
<td>5</td>
<td>L, S</td>
<td>wr or o</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>6</td>
<td>Nanomaterials I</td>
<td>C</td>
<td>8</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>2,3</td>
<td>yes</td>
</tr>
<tr>
<td>7</td>
<td>Nanomaterials II</td>
<td>C</td>
<td>13</td>
<td>L, S</td>
<td>wr or o</td>
<td>3</td>
<td>yes</td>
</tr>
<tr>
<td>8</td>
<td>Additional Key Skills</td>
<td>CE</td>
<td>8</td>
<td>L, S</td>
<td>wr or o</td>
<td>1,2,3</td>
<td>no</td>
</tr>
<tr>
<td>9</td>
<td>Master’s Thesis</td>
<td>C</td>
<td>30</td>
<td>M</td>
<td>wr</td>
<td>4</td>
<td>yes (x2)</td>
</tr>
<tr>
<td>10</td>
<td>Electives</td>
<td>CE</td>
<td>16</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>1,2,3</td>
<td>yes</td>
</tr>
</tbody>
</table>

C = compulsory, CE = compulsory elective, V = lecture, S = seminar, LC = laboratory course, M = master thesis, wr = written, o = oral

b) Specialty area Biomaterials:

<table>
<thead>
<tr>
<th>No.</th>
<th>Module</th>
<th>C/CE</th>
<th>CP</th>
<th>Course type*</th>
<th>Type of exam*</th>
<th>Semester</th>
<th>Counts towards final mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Materials Science I</td>
<td>C</td>
<td>10</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>2</td>
<td>Materials Science II</td>
<td>C</td>
<td>10</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>2</td>
<td>yes</td>
</tr>
<tr>
<td>3</td>
<td>Chemistry</td>
<td>C</td>
<td>11</td>
<td>L, S</td>
<td>wr or o</td>
<td>1,2</td>
<td>yes</td>
</tr>
<tr>
<td>4</td>
<td>Physics</td>
<td>C</td>
<td>9</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>1,2</td>
<td>yes</td>
</tr>
<tr>
<td>5</td>
<td>Biology and Cell Biology</td>
<td>C</td>
<td>5</td>
<td>L, S</td>
<td>wr or o</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>6</td>
<td>Biomaterials I</td>
<td>C</td>
<td>5</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>2</td>
<td>yes</td>
</tr>
<tr>
<td>7</td>
<td>Biomaterials II</td>
<td>C</td>
<td>8</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>2,3</td>
<td>yes</td>
</tr>
<tr>
<td>8</td>
<td>Additional Key Skills</td>
<td>CE</td>
<td>8</td>
<td>L, S</td>
<td>wr or o</td>
<td>1,2,3</td>
<td>no</td>
</tr>
<tr>
<td>9</td>
<td>Master’s Thesis</td>
<td>C</td>
<td>30</td>
<td>M</td>
<td>wr</td>
<td>4</td>
<td>yes (x2)</td>
</tr>
<tr>
<td>10</td>
<td>Electives</td>
<td>CE</td>
<td>24</td>
<td>L, S, LC</td>
<td>wr or o</td>
<td>1,2,3</td>
<td>yes</td>
</tr>
</tbody>
</table>

C = compulsory, CE = compulsory elective, V = lecture, S = seminar, LC = laboratory course, M = master thesis, wr = written, o = oral
The module handbook specifies which examinations and courses may be selected as electives.

Students who are native speakers of German as well as foreign nationals with a German university entrance qualification (“Bildungsinländer”) and students with an excellent knowledge of German (corresponding to DSH-1) must complete courses within the module “Additional Key Skills” (“ASQ”) offered by Ulm University. These courses must be approved by the board of examiners and must be notified to the Student Administration Office (“Studiensekretariat”). Students not covered by sentence 1 must obtain a total of 8 CP from the courses “German language I – III” to meet the requirements of the module “Additional Key Skills”. In exceptional cases, the board of examiners decides what type of achievement is acceptable.

Section 15 Subject-specific requirements for admission to the master thesis

Students may only be admitted to the master thesis after having gained a minimum of 83 CP from modules completed as part of the master programme.

II. Final provisions

Section 16 Effective date

These Study and Examination Regulations take effect in the summer semester 2012. They are published in the Official Bulletin (“Amtliche Bekanntmachungen”) of Ulm University. The Subject-Specific Study and Examination Regulations for the English language master programme “Advanced Materials” offered by the Faculties of Natural Sciences, Engineering and Computer Science and Medicine of Ulm University of 8 July 2010, published in the Official Bulletin (“Amtliche Bekanntmachungen”) of Ulm University, no. 16 of 19 July 2010, pages 266-271, cease to have effect.

Ulm, 8 March 2012

Prof. Dr. Karl Joachim Ebeling
President