Annex to the General Study and Examination Regulations for Bachelor's and Master's Programs at the University of Applied Sciences Saarbrücken

Master’s Program
Neural Engineering (M.Sc.)

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# Annex to the General Study and Examination Regulations for the Master’s Program Neural Engineering (M.Sc.)

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1 Program-Specific Provisions

1.1 Faculty Affiliation
The English-language Master's program Neural Engineering is supported by the Faculty of Engineering at the University of Applied Sciences Saarbrücken in conjunction with the Fraunhofer-Institut für Biomedizinische Technik in St. Ingbert (IBMT) and the Universitätsklinikum des Saarlandes in Homburg (UKH).

1.2 Admission Requirements
1. A Bachelor's degree or diploma (FH or university) in Biomedical Engineering, Medical Engineering, Electrical Engineering, Computer Science, Technical Biology, Physics or Physical Engineering or Neurosciences, Medicine, Psychology or Physiology with sufficient additional (technical) qualifications amounting to a minimum of 210 ECTS credits which corresponds to a standard program duration of 7 semesters.

If, however, the standard program duration is only 6 semesters (corresponding to 180 ECTS credits) then the applicant must, in consultation with the head of studies, first complete individually selected modules from the Bachelor's program in Biomedical Engineering (amounting to at least 30 ECTS credits) within the framework of an additional semester. Foreign students (students with higher education entrance qualifications from outside Germany) are required to present proof of the German language skills required for admission to the above Bachelor's program in Biomedical Engineering, in addition to the English skills required in Paragraph 3.

2. For all applicants who do not yet have a Bachelor's degree, it will be assumed that they have registered their Bachelor's thesis, that the processing period ends within the current semester, and that no more than 45 ECTS credits are lacking by the end of the Bachelor's program.

3. Sufficient English-language proficiency at least at level C1 ("Effective Operational Proficiency") of the European Framework of Reference for Languages, documented by an internationally recognized certificate.

4. The admission application must be accompanied by the customary documents (application form, certificates), a written curriculum vitae in tabular form and a description of the applicant’s motivation for taking part in the program.

5. The overall grade used as a basis for the admission decision improves on the grade shown in the final transcript for the qualifying study program in accordance with paragraph (1):
   - by 0.3 if at least 45 ECTS credits in the field of Biomedical Engineering were earned during this course of study,
   - by 0.1 if the thesis received a grade of "very good" (1.5 or better).

Admission is granted only if the grade thus obtained is "good" (2.5 or better).

6. If there are less admission slots than there are admissible applications (according to Paragraph 5), then applications will be ranked according to grade as stipulated in Paragraph 5 and slots will be allocated in the order of ascending grades. In the case of identical grades, the decision will be made by lot.

1.3 Admissions Committee
1. The decision as to whether the qualification requirements set out in Section 1.2 are met will be made by the Admissions Committee.

2. The following people belong to the Admissions Committee:
   - 3 professors from the htw saar
   - a representative from the foreign language training team.

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1 as defined by the the Deutschen Gesellschaft für Biomedizinische Technik (DGBMT) im VDE (German Society for Biomedical Engineering)
One substitute shall be elected for each member of the Admissions Committee. A professor from the Admissions Committee must act as deputy chairperson. The term of office is two years.

1.4 Duration, Program Structure and Modules
(1) The standard program duration is 3 semesters including project work, the examination periods and the Master's thesis.

(3) The program begins in the summer semester.

(3) Modules are either mandatory modules or compulsory electives. A detailed description of each module can be found in the module guide.

(4) The individual modules and module components, their allocation to the respective semesters, the number of weekly semester hours and ECTS credits, as well as the type of courses and examinations per semester can be found in the curriculum in Section 2.

(5) Students must achieve a total of 90 ECTS credits to successfully complete the program.

(6) One ECTS credit corresponds to a workload of 30 hours.

1.5 Degree, Final Grade and Final Record
(1) After successful completion of the program, students will be awarded the “Master of Science” degree (abbreviated to M. Sc.).

(2) The final grade is calculated using the grades from the successfully completed modules with their respective ECTS credits.

(3) Additional ECTS credits can be documented on the Master's degree certificate, if desired. However, they will not be taken into account when calculating the overall grade.

(4) The name of the degree program is included in the certificate in accordance with the provisions of the General Study and Examination Regulations for Bachelor's and Master's degree programs at the htw saar.

1.6 Compulsory Electives
Students must successfully complete compulsory electives totaling 10 ECTS credits.

1.7 Practical Training Phase
— not applicable —

1.8 Project Work
(1) The goal of the project work is for students to apply and deepen the knowledge they acquired during their studies in a practical work environment similar to that which they will experience later in their careers.

(2) The project work phase spans 6 weeks and is worth 9 ECTS credits. As a rule, it takes place during the 2nd semester.

(3) Project work can be completed in the form of project-centered learning at the htw saar, IBMT or UKH or within the framework of an “internship” at a company or other institution. The selection is made in consultation with the head of studies.

1.9 Semester Abroad
— not applicable —

1.10 Master's Thesis
(1) Students are given 6 months to write their Master's thesis.

(2) The content of the final thesis should be related to the content of the study program.

(3) The results of the thesis will be presented in a colloquium.
(4) As a rule, the thesis must be evaluated by two examiners. At least one of the examiners must be a full-time university lecturer. An examiner’s report must be drawn up on the evaluation.

1.11 Examination Registration and Evaluation

(1) Registration for examinations is regulated in the General Study and Examination Regulations. Details on registration can be found in Section 2 of the degree program plan.

(2) If you fail an examination, you will automatically be registered for the next possible examination date.

1.12 Part-Time Study

(1) The program can be completed part-time, as long as the requirements of the currently valid regulations for matriculation (ImO) at the htw saar are fulfilled.

(2) The standard program period is, in this case, 6 semesters.

(3) An individual study plan must be agreed upon with the examination board before enrolling or re-registering for part-time studies.

1.13 Continuing Education
— not applicable —

1.14 Module Code Assignment

All modules are provided with module codes according to the following system:

<table>
<thead>
<tr>
<th>Module code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE2snn.XXX</td>
<td>Modules from the Master’s program “Neural Engineering”</td>
</tr>
</tbody>
</table>

- The first digit (2) stands for the reaccreditation generation (it increases by one with each reaccreditation).
- The second digit (s) stands for the semester.
- The last two (nn) digits are incremented consecutively.
- In addition, an abbreviation for the module name, comprised of up to 3 letters, is appended.

2 Degree Plan

Courses and examinations take place in English.

Explanations of the tables:

<table>
<thead>
<tr>
<th>SWS: hours per semester week</th>
<th>Total number and distribution of hours per semester week with regard to lectures, exercises and lab classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECTS credits</td>
<td>Credit points according to the European Credit Transfer System (ECTS)</td>
</tr>
<tr>
<td>V, Ü, P, PJ, S</td>
<td>Type of course: V = Vorlesung (lecture), Ü = Übung (tutorial), P = Laborpraktikum (lab course), PJ = Projekt (project), S = Seminar (seminar)</td>
</tr>
<tr>
<td>PL: Prüfungsleistungen</td>
<td>K = Klausur (written exam), M = mündliche Prüfung (oral exam), P = Projektarbeit (project work), A = Ausarbeitung (composition), PA = praktische Prüfung mit Ausarbeitung (practical exam with a composition), S = Seminarvortrag (seminar presentation) (Weighting in percent, where applicable)</td>
</tr>
<tr>
<td>SL: Studienleistungen</td>
<td>Ü = studienbegleitende Übungsarbeit (study-related tutorial work), L = studienbegleitender Laborversuch (study-related lab experiments)</td>
</tr>
<tr>
<td>x/y</td>
<td>x: Semester in which the first possible examination can be taken; y: Last possible semester in which the examination can be taken</td>
</tr>
<tr>
<td>WH: Wiederholungstermin</td>
<td>Repeat date for examinations S = per semester, J = per study year</td>
</tr>
<tr>
<td>BW: Assessment</td>
<td>Type of assessment N = Note (grade), B = bestanden, ohne Note (passed, without grade) (not included in the cumulative grade), Nb = zu bestehende, benotete Teilleistung (graded sub-tasks that must be completed successfully)</td>
</tr>
</tbody>
</table>
The modules, sub-modules, their number of hours, as well as the ECTS credits are defined in the following tables.

### 1st Semester

<table>
<thead>
<tr>
<th>Module code</th>
<th>Module description</th>
<th>SWS</th>
<th>V</th>
<th>Ü</th>
<th>P</th>
<th>PJ</th>
<th>S</th>
<th>ECTS credits</th>
<th>A</th>
<th>PL</th>
<th>WH:</th>
<th>BW:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE2101.MAI</td>
<td>Manufacture of Active Implants</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>1/3</td>
<td>M</td>
<td>S</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>NE2102.SIP</td>
<td>Biomedical Signal &amp; Image Processing</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td>6</td>
<td>1/3</td>
<td>M</td>
<td>S</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>NE2103.MST</td>
<td>Microsystems Technologies</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td>4</td>
<td>1/3</td>
<td>K</td>
<td>S</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>NE2104.NCS</td>
<td>Neural and Cognitive Systems</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td>6</td>
<td>1/3</td>
<td>M(50)+P(50)</td>
<td>S/S</td>
<td>Nb/Nb</td>
<td></td>
</tr>
<tr>
<td>NE2105.APP</td>
<td>Auditory Processing and Perception</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>6</td>
<td>1/3</td>
<td>P(50)+K(50)</td>
<td>S/S</td>
<td>Nb/Nb</td>
<td></td>
</tr>
<tr>
<td>NE210E</td>
<td>Elective Module</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>1/3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Total

24 29

### 2nd Semester

<table>
<thead>
<tr>
<th>Module code</th>
<th>Module description</th>
<th>SWS</th>
<th>V</th>
<th>Ü</th>
<th>P</th>
<th>PJ</th>
<th>S</th>
<th>ECTS credits</th>
<th>A</th>
<th>PL</th>
<th>WH:</th>
<th>BW:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE2201.PW</td>
<td>Project Work</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>2</td>
<td></td>
<td>3</td>
<td>2/4</td>
<td>P</td>
<td>S</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>NE2202.SAM</td>
<td>Neural Signal Analysis and Modeling</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td>6</td>
<td>2/4</td>
<td>M(50)+P(50)</td>
<td>S/S</td>
<td>Nb/Nb</td>
<td></td>
</tr>
<tr>
<td>NE2203.CNP</td>
<td>Clinical Neurophysiology</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>5</td>
<td>2/4</td>
<td>M(50)+PA(50)</td>
<td>S/S</td>
<td>Nb/Nb</td>
<td></td>
</tr>
<tr>
<td>NE2204.NPP</td>
<td>Neuroprostheses</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>5</td>
<td>2/4</td>
<td>M(50)+PA(50)</td>
<td>S/S</td>
<td>Nb/Nb</td>
<td></td>
</tr>
<tr>
<td>NE220E</td>
<td>Elective Module</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>2/4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Total

28 31

### 3rd Semester

<table>
<thead>
<tr>
<th>Module code</th>
<th>Module description</th>
<th>SWS</th>
<th>V</th>
<th>Ü</th>
<th>P</th>
<th>PJ</th>
<th>S</th>
<th>ECTS credits</th>
<th>A</th>
<th>PL</th>
<th>WH:</th>
<th>BW:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE2301.THS</td>
<td>Master’s Thesis</td>
<td>30</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>3/5</td>
<td>P</td>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Total

30

### 3 Final Provisions

#### 3.1 Legal Validity

This Annex to the General Study and Examination Regulations for Bachelor's and Master's Programs enters into force on October 1st, 2019.

#### 3.2 Interim Regulations

Students who start their studies in the summer semester of 2019 are subject to the conditions of this Annex from the day of its entry into force.

Saarbrücken, xx.xx.2019

Prof. Dr.-Ing. Dieter Leonhard
President