Study Regulations for the Consecutive Master Program

Organic and Molecular Electronics

As of #Date of issue#
(Enacted by the Faculty Council on June 13th, 2012)

Pursuant to § 36 of the Law Governing the Universities in the Free State of Saxony (Sächsisches Hochschulgesetz – SächsHSG) of 10 December 2008 (SächsGVBl. p. 900), last amended by article 5 of the Act of 4 October 2011 (SächsGVBl. pp. 380, 391), the Technische Universität Dresden enacts the following Study Regulations as a statute.

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Please note: This is an English translation of the German original. Only the German version is legally binding
§ 1

Area of applicability

These Study Regulations define the objective, the contents, the structure and the order of events during studies for the consecutive Master program „Organic and Molecular Electronics“ at the Technische Universität Dresden on the basis of the provisions of the applicable Law on Higher Education in the Free State of Saxony and the Examination Regulations.

§ 2

Aims of the program

(1) On the basis of the discussed methods and different scientific approaches the students are able to conduct independent scientific research. The students can work on complex problems and solve them with scientific methods that may even lie beyond their current state of knowledge. The students have gained a subject-related expertise that is based on current research questions, methodological and analytical skills enabling them to independently broaden their scientific knowledge. In this, research methods and strategies play a central role. The students are able to think across scientific boundaries, communicate scientifically on a multidisciplinary level and solve economic problems.

(2) The graduates of the Master program Organic and Molecular Electronics acquire methods, techniques and tools for the manufacture of organic electronics and also for the application of these systems in selected applications areas and can reliably deploy this knowledge. Students will be enabled to analyse tasks in these areas and thence to develop effective solutions. They identify the interactions and interdependencies between these key issues and can take account of them when finding solutions. Graduates are familiar with the latest research and developments in these areas and are positively involved in the process.

(3) Thanks to their broad technical knowledge and their familiarity with the international research communities in the areas design, manufacture, application and integration of organic electronics, which they acquired in the modules with an international orientation, graduates are fit to solve a variety of complex tasks in the design, manufacture, application and integration of organic electronics in accordance with the chosen specialization and after an adequate settling-in period in the industry.

§ 3

Admission requirements

(1) To be admitted to the program, students must have earned a first job-qualifying university degree in a field of natural sciences or engineering or related with a prior knowledge in particular of higher mathematics; it is mandatory that the degree is acknowledged in Germany.

(2) Fluency in English at the level C1 of the Common European Framework of Reference for Languages (CEFR) is a further prerequisite. In case English is not the applicant’s native language, an internationally acknowledged certificate confirming the English language proficiency (preferably IELTS or TOEFL at the minimal score of 6.5 and 550 points respectively) has to be demonstrated.
(3) Moreover, students are expected to have sound knowledge in the field of classical physics - including mechanics, electrodynamics, optics, thermodynamics and quantum theory as well as structure of matter.

The fulfillment of these requirements is verified pursuant to the Regulations governing aptitude assessment.

§ 4

Beginning and duration of studies

(1) Students can commence studies in the winter semester.

(2) The standard period of study is 4 semesters during which students are required to accomplish face-to-face studies, supervised practical terms, self-study and the Master examination.

§ 5

Types of teaching and learning

(1) The academic material is organized in a modular structure. In the individual modules, the academic contents is communicated, consolidated and deepened in lectures, exercises, tutorials, lab courses, language classes, projects and also in self-study.

(2) Lectures provide introduction to the subject area of the module, where students normally attend as recipients. Therefore, lectures are supplemented by exercises, as a rule. Exercises provide opportunities for students to practice what they learned in lectures in selected sub-areas.

(3) Seminars allow students to gather information about a chosen topic under supervision on the basis of technical literature or other material, to present and discuss in a group what they worked out and to present it also in writing.

(4) Lab courses serve to apply theoretical knowledge and to acquire practical skills in potential professional fields. They serve to illustrate in experimentation the facts students have learned theoretically thus allowing them to make their own experience and practice their skills when handling devices, facilities and measuring instruments.

(5) Language courses provide theoretical and practical knowledge and skills in one or more foreign languages. They develop communication skills and intercultural competence in an academic and professional context also in everyday situations.

(6) Students work on research projects in which they develop the capacity to work in a team and to work out their own solutions and implement them within a given time frame. Students also develop and exercise the ability to document the results obtained in an adequate form and to present them correctly using appropriate language.

(7) Through self-study, students can work on, repeat and deepen the subject matter as they see it.

§ 6

Structure and organization of the program

(1) The program has a modular structure. The courses are offered in three semesters. During the fourth semester, students work on their Master thesis. Part-time studies are possible in accordance with the Technische Universität Dresden’s Part-Time Studies Regulations.
(2) The program comprises 11 required modules. The module „Specialization Module“ allows students focusing on areas of particular interest.

(3) The module descriptions contain contents and objectives, the types of teaching and learning used, pre-exam achievements, usability, frequency, amount of work involved and duration of the various modules (Appendix 1).

(4) Classes are held in English.

(5) The appropriate distribution of the modules across the semesters, which allows the completion of studies within the standard period of study, the types and numbers of hours of the courses and also the number and fixed times of assessments and examinations are listed in the curriculum plan attached (Appendix 2). They can also be specified in an individual study plan, approved by the faculty.

(6) The curriculum plan can be modified by the Faculty Council on suggestion of the Academic Committee. The modified curriculum plan is binding on those students to whom the faculty communicates it in the own manner as soon as studies begin. On application, the Examination Committee may decide on exceptions to sentence 2.

§ 7

Course contents

(1) The major focus of the Master program „Organic and Molecular Electronics“ is on research.

(2) The program comprises required modules on semiconductor technology, molecular electronics, organic semiconductors, analytics and measuring technology as well as processing technology.

(3) The topics covered by the modules with elective contents are extended basics of chemistry and physics (according to the student’s background), materials and materials processing (e.g. fabrication, structuring, characterization and surface chemistry), optoelectronics as well as applications of organic and molecular electronics (e.g. devices, circuit integration, memory technology and microsystems technology).

§ 8

Credit points

(1) ECTS credits document the average student work load and individual progress. One credit is equivalent to a work load of 30 hours. As a rule, students can earn 60 credit points per academic year, i.e. 30 credits per semester. The total work load of the program is 120 credits and comprises the types of teaching and learning, the academic achievements and assessments and also the Master thesis and the defence the type and scope of which are all defined in the module descriptions (Appendix 1).

(2) The module descriptions (Appendix 1) indicate how many credits students can earn in one module. Students can earn credit points after having passed the module exam. § 28 of the examination regulations remains unaffected.

§ 9

Student advisory service
The general student advisory service is the responsibility of the central student advisory service of TU Dresden and answers all questions regarding programs offered, terms of enrolment and general student affairs. The subject-related advisory service throughout studies is the responsibility of the Faculty Mathematics and Natural Sciences. This subject-related advisory service helps students. In particular, tailor and plan their studies.

As the third semester starts, students who have not yet earned an attestation by that time are obliged to seek advisory service.

§ 10

Adaptation of module descriptions

A simplified procedure is used to adapt module descriptions to changed conditions to ensure the organizational conditions for the program. The fields “module name”, “Contents and objectives”, “types of teaching”, “requirements” and also “credit points and grades” cannot be modified.

In the simplified procedure, the Faculty Council of the Faculty Mathematics and Natural Sciences on suggestion of the Academic Committee decides upon the modification of the module description. The modifications shall be communicated in the known manner.

§ 11

Coming into force and public notice

These study regulations become effective as of October 1st, 2012 and are publicly announced in the Official Notices of Technische Universität Dresden.

Issued on the basis of the decision of the Faculty Council of the Faculty Mathematics and Natural Sciences made on June 13th, 2012 and the approval of the rectorial board of #date#.

Dresden, #date of issue#

The Rector
of Technische Universität Dresden