**Study and Examination Regulations for the international continuing education Master's Degree Program in Space Engineering at Faculty V - Mechanical Engineering and Transport Systems at Technische Universität Berlin**

**of 6 November 2019**

On 6 November 2019, the Faculty Board of Faculty V - Mechanical Engineering and Transport Systems of Technische Universität Berlin adopted the following second amendment to the Study and Examination Regulations for the international continuing education master's program in Space Engineering of 9 July 2015 (Berlin Gazette of Laws and Ordinances [GVBl.]12/2015) and amended on 30 November 2016 (GVBl.19/2017), in accordance with § 18 (1) no. 1 of the Constitution of Technische Universität Berlin and § 71 (1) no. 1 of the Berlin State Higher Education Act (Berliner Hochschulgesetz – BerlHG), in the version of 26 July 2011, last amended by Article 6 of the Act of 2 February 2018 (GVBl, p. 160).[*])

**Contents**


**I. General regulations**

§ 1 – Scope of application

§ 2 – Entry into force/expiration

**II. Program objectives and structure**

§ 3 – Learning outcomes, program content and professional fields

§ 4 – Program start, standard period of study, and required coursework

§ 5 – Program structure

**III. Examination requirements and conduct of examinations**

§ 6 - Purpose of the master's examination

§ 7 – Master's degree

§ 8 – Scope of the master's examination, calculation of the overall grade

§ 9 – Types of examination and registration for examinations

§ 10 – Master's thesis

**IV. Annexes**


## I. General regulations

### § 1 – Scope of application

These Study and Examination Regulations govern both the objectives and organization of studies, and the requirements and conducting of examinations in the continuing education master's program in Space Engineering. The program-specific provisions included herein supplement the Regulations Governing General Study and Examination Procedures of Technische Universität Berlin (*Ordnung zur Regelung des allgemeinen Studien- und Prüfungsverfahrens* - AllgStuPO).

### § 2 – Entry into force/expiration

(1) This amendment enters into force on the day after its publication in TU Berlin's Official Gazette and applies to students enrolled in the Space Engineering master's program from the 2020 summer semester onwards.

(2) Students enrolled in the master's program in Space Engineering at Technische Universität Berlin prior to the entry into force of these Regulations shall decide as to whether they wish to continue their studies in accordance with this second amendment or the study and examination regulations for the Space Engineering master's program of 9 July 2014, last amended on 30 November 2016 (TU Official Gazette 19/2017). Students must give their decision in writing to the relevant office of the university administration by 31 March 2021, and have it officially recorded there. This decision is irrevocable.

(3) The previous version of the study and examination regulations for the Space Engineering master's program of 9 July 2014 and last amended 30 November 2016 (Official Gazette 19/2017) valid until now expires on 30 September 2022. Students who have not completed their studies at the time of expiry in accordance with Sentence 1 shall continue their studies in line with the present regulations.

## II. Program objectives and structure

### § 3 – Learning outcomes, program content and professional fields

Building on the qualifications required for admission, the degree program prepares students for qualified professional work in the field of space technology. The study of complex systems and technologies in astronautics is a central focus of the curriculum. In particular, students acquire space-related systems expertise over and beyond technical specialization. Thus, students will acquire:

- Professional expertise in the field of space technology
- Methodological skills required by engineering-oriented approaches
- Social skills in the areas of intercultural and interdisciplinary communication
- Skills required to solve complex technical problems

Students in the program receive training preparing them for a career with international companies and organizations in the space industry. Through the program's focus on methods and analysis, students are also well trained for work in related industries such as mechanical engineering, electrical engineering or vehicle construction.

Technological advances and a high level of work in small satellite research are increasing the use of space. This gives rise to a growing risk of space debris at critical levels. In view of these developments, it is of particular importance that engineers in the space industry possess a heightened awareness of socially responsible work and sustainable development. Therefore, topics in the context of space debris prevention, especially under the keywords "space debris mitigation" and "clean space", are of central importance within the program, Collaboration with experts from research organizations working on these issues as well as course-related projects on space debris prevention technologies raise students' awareness of this problem.

[*] Approved by the TU Berlin Executive Board on 30. January 2020.

**§ 4 - Program start date, standard duration, and number of credits**

(1) The program starts in the summer semester.

(2) The standard period of study, including completing the master's thesis, is four semesters.

(3) The program encompasses 120 credit points (CP).

(4) The teaching curriculum and the entire examination procedure are structured and organized in such a way as to enable students to complete the program within the standard period of study.

**§ 5 – Program structure**

(1) Students have the right to individually determine the order of their own course of study. They are, however, obliged to comply with the provisions laid out in these Study and Examination Regulations. Students are recommended to follow the chronology of modules set down in the proposed course schedule in the Annex to these Regulations. This does not affect any possible constraints resulting from subject-specific admission requirements for modules.

(2) Students must earn a total of 120 credits, of which 90 credits are awarded for modules and 30 credits for the master's thesis.

(3) The compulsory part of the program is worth 36 credits and is structured as follows:

| | |
|---|---|
| A - Space Technology | 21 credits |
| B - Space System Design | 9 credits |
| C - Space Management and Operation | 6 credits |

(4) The compulsory elective part of the program is worth at least 36 credits and is structured as follows:

| | |
|---|---|
| A - Space Technology | at least 6 credits |
| B - Space System Design | at least 6 credits |
| C - Space Management and Operation | at least 6 credits |
| D - Interdisciplinary courses | at least 6 credits |

(5) The elective component of the program is worth max. 18 credit points. The modules within the elective component can be selected from the course offerings of universities under the jurisdiction of the Framework Act for Higher Education. The modules assigned to each category can be found in the module list (Annex 1).

## III. Examination requirements and conduct of examinations

**§ 6 – Purpose of the master's examination**

The master's examination determines whether a candidate has achieved the learning outcomes according to § 3 of these Regulations.

**§ 7 – Master's degree**

On behalf of Faculty V - Mechanical Engineering and Transport Systems, Technische Universität Berlin awards the academic degree Master of Science (M.Sc.) to students who have passed the master's examination.

**§ 8 - Scope of the master's examination, calculation of the overall grade**

(1) According to the principles stipulated in § 47 AllgStuPO, the overall grade is to be determined by combining the grades achieved for those examinations arising from modules taken from the module catalog that are marked both as graded and for inclusion in the overall grade together with the grade achieved for the master's thesis. Modules where the student achieved their lowest grades amounting to no more than 18 credit points are not included.

(2) Of these, at least 6 credit points must belong to the areas A, B and C and at least 6 credit points must belong to area D and the elective component. Only fully completed modules are included in the calculation of the grade. In the event that a student receives the same grade in different modules, the most recently completed module is not considered. Modules that are ungraded or have been recognized as ungraded will be the first to be included in these credit points. All module grades appear on the final transcript.

(3) Grades excluded from the calculation of the overall grade are identified accordingly on the final certificate. The grade of the master's thesis is included in the calculation of the overall grade.

**§ 9 – Types of examination and examination registration**

(1) The types of examination and the registration procedure for module examinations are regulated by the current version of the Regulations Governing General Study and Examination Procedures (AllgStuPO). Modules offered by other faculties may be taken and recognized regardless of their examination format.

(2) The language of instruction is English. Examinations are also conducted in English. Classes can be offered and assessed in German if assurances can be made that alternative courses are offered to enable the program to be completed fully in English. At the request of the student to be examined, English shall be provided as the language of examination.

**§ 10 – Master's thesis**

(1) As a rule, the master's thesis is completed in the fourth semester of study. It equals 30 credits and is to be assigned a writing period of 24 weeks. If important grounds exist, the chair of the examination board may extend the deadline by up to one month or, in case of illness, up to three months. The examination board shall decide on further exceptions.

(2) To apply for admission to the master's thesis, students must submit evidence of having successfully completed module examinations worth at least 60 credit points to the responsible office.

(3) The topic of the master's thesis may be rejected once, however only within the first eight weeks of being issued by the responsible department of the Central University Administration.

(4) The procedures for applying for admission to and assessment of a final thesis are regulated in the current version of the Regulations Governing General Study and Examination Procedures (*AllgStuPO*).