

# **First Amendment to the 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**

## **14 September 2022**

On 14 September 2022, the Faculty Board of Faculty V - Mechanical Engineering and Transport Systems of Technische Universität Berlin, pursuant to Section 18 (1) no. 1 of the Constitution of Technische Universität Berlin, Section 71 (1) no. 1 of the Berlin State Higher Education Act (*Berliner Hochschulgesetz - BerlHG*) in the version of 26 July 2011 (Gazette of Laws and Ordinances, p. 378), last amended by Article 1 of the Act of 5 July 2022 (Gazette of Laws and Ordinances, p. 450) adopted the following amendment to the Study and Examination Regulations of the Master's Degree Program in Space Engineering of 6 November 2019 (TU Berlin Official Gazette 19/2020 of 30 September 2020).

### Article I

1. Sentence 3 has been reformulated as follows: In particular, students acquire space-related systems expertise over and beyond technical specialization.
2. Section 10 (1) sentence 3 of the Study and Examination Regulations is amended as follows:  
If there are significant reasons beyond the student's control preventing them from completing the thesis within this time frame, the examination board shall grant an extension of the deadline for so long as the reasons in question continue to exist. The total possible extension may not exceed three months. In the event that the combined extensions exceed the stipulated maximum period of extension, the student may withdraw from the examination.
3. The module "Satellite Geodesy: Geodetic Space Procedures in Earth System Research" has been removed from the Space Operations compulsory elective component. Additionally, the annex "Module list" has been amended as attached.
4. The following footnote has been added to the course schedule: As a rule, it is possible for students to complete a stay at another university (mobility window); the degree program coordinator is available to advise.

### Article II - Entry into force

This amendment takes effect on the day after its publication in the TU Berlin Official Gazette. Already completed and commenced module exams will be recognized and completed according to the study and examination regulations of 6 November 2019.

### Annexes

Module list

## Annex: Module Catalog<sup>1</sup>

Module	Course	CP	Compulsory/Compulsory elective module	Type of examination	Graded	Weighting in overall grade <sup>2</sup>
<b>A Space Technology</b>		<b>At least 27</b>				
Fundamentals of Space Technology	Fundamentals of Space Technology 1	9	Compulsory module	Portfolio assessment	Yes	1
	Fundamentals of Space Technology 2					
Satellite Technology	Satellite Technology	6	Compulsory module	Written examination	Yes	1
Space Electronics	Space Electronics 1	6	Compulsory module	Portfolio assessment	Yes	1
	Space Electronics 2					
Radiation Workshop	Radiation Workshop	3	Compulsory elective module	Written examination	Yes	1
Spacecraft Dynamics and Control	Spacecraft Dynamics and Control 1	9	Compulsory elective module	Written examination	Yes	1
	Spacecraft Dynamics and Control 2					
Spacecraft Propulsion Systems	Spacecraft Propulsion Systems	6	Compulsory elective module	Oral examination	Yes	1
Space Sensors and Instruments	Space Sensors and Instruments	6	Compulsory elective module	Portfolio assessment	Yes	1
<b>B Space System Design</b>		<b>At least 15</b>				
Space System Design Project	Space System Design Project	9	Compulsory module	Portfolio assessment	Yes	1
Space Technology Project	Space Technology Project	9	Compulsory elective module	Portfolio assessment	Yes	1
Planetary Exploration and Space Robotics 1	Planetary Exploration and Space Robotics 1	6	Compulsory elective module	Portfolio assessment	Yes	1
Planetary Exploration and Space Robotics 2	Planetary Exploration and Space Robotics 2	6	Compulsory elective module	Portfolio assessment	Yes	1
<b>C Space Operations</b>		<b>At least 12</b>				
Space Mission Planning and Operations	Space Mission Planning and Operations	6	Compulsory module	Portfolio assessment	Yes	1
Human Spaceflight	Technical Aspects of Human Spaceflight	6	Compulsory elective module	Portfolio assessment	Yes	1
	Space Psychology					

<sup>1</sup> The module descriptions are published in the Official Gazette of TU Berlin at the beginning of the winter semester in October and at the beginning of the summer semester in April. The version published therein is then valid. (See Section 45 (7) of the General Study and Examination Regulations (AllgStuPO))

<sup>2</sup>A weighting of 1 means that the grade is weighted according to the number of credits (Section 68 (7) AllgStuPo); "-" means the grade is not weighted. See Section 8 for further regulations about calculating the overall grade.

Space Flight Mechanics	Space Flight Mechanics	6	Compulsory elective module	Written examination	Yes	1
Introduction to Satellite Geodesy	Introduction to Satellite Geodesy	6	Compulsory elective module	Portfolio assessment	Yes	1
<b>D Interdisciplinary Courses</b>		<b>At least 6</b>				
Project Management	Project Management	6	Compulsory elective module	Portfolio assessment	Yes	1
Innovation Management and Entrepreneurship	Innovation Management and Entrepreneurship	6	Compulsory elective module	Portfolio assessment	Yes	1
Soft Skills	Soft Skills	3	Compulsory elective module	Portfolio assessment	Yes	1
German for Engineers A1.1	German for Engineers A1.1	3	Compulsory elective module	Written examination	No	-
German for Engineers A1.2	German for Engineers A1.2	3	Compulsory elective module	Written examination	No	-
German for Engineers A2.1	German for Engineers A2.1	3	Compulsory elective module	Written examination	No	-
German for Engineers A2.2	German for Engineers A2.2	3	Compulsory elective module	Written examination	No	-
German for Engineers B1.1	German for Engineers B1.1	3	Compulsory elective module	Written examination	No	-
German for Engineers B1.2	German for Engineers B1.2	3	Compulsory elective module	Written examination	No	-
<b>Elective subjects</b>		<b>Maximum 18</b>				
Elective		Maximum 18	Elective	See module description		1
<b>Total (modules)</b>		<b>90</b>				
<b>Master's thesis</b>		<b>30</b>				
<b>Total</b>		<b>120</b>				

The **compulsory component** is worth 36 credits and is structured as follows:

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

The **compulsory elective component** 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