



# Study and Examination Regulations

Master of Science  
Chemical Engineering

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Please note that this is an **unofficial translation** of the Study and Examination Regulations.  
In case of inconsistency between the German and the English version, the German version of the agreement prevails.

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AMBI.

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In case of inconsistency between the German and the English version the German version of the agreement prevails.

## **Study and Examination Regulations for the Consecutive Master's Program in Chemical Engineering at Faculties II and III of Technische Universität Berlin**

**of 15 January 2014**

On 15 January 2014, the Joint Committee for Chemical Engineering of Faculty II – Mathematics and Natural Sciences – and Faculty III – Process Sciences – of Technische Universität Berlin adopted the following Study and Examination Regulations for the Consecutive Master's Program in Chemical Engineering, in accordance with Section 18 (1) no. 1 of the Constitution of Technische Universität Berlin and Section 71 (1) no. 1 of the Berlin State Higher Education Act (*Berliner Hochschulgesetz – BerlHG*), in the version of 26 July 2011 (Berlin Gazette of Laws and Ordinances [GVBl.], page 378).

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#### **I. General regulations**

##### **Section 1 – Scope of application**

These Study and Examination Regulations govern both the objectives and organization of studies, and the requirements and conduct of examinations in the master's program in Chemical Engineering. The program-specific provisions included herein supplement the current version of the Regulations Governing General Study and Examination Procedures (*AllgStuPO*) of Technische Universität Berlin with stipulations relating specifically to this study program.

##### **Section 2 – Entry into force / expiry**

These Regulations shall enter into force on the day after their publication.

#### **II. Objectives and organization of studies**

##### **Section 3 – Learning outcomes, program content, and professional fields**

(1) Students shall acquire the ability to carry out independent scientific work, to think critically, and to act responsibly with the goal of becoming qualified to fill a professional position in the field of Chemical Engineering. Furthermore, they shall be introduced to methods that enable them to acquire scientific knowledge and to address and solve problems that arise within the broad field of knowledge encompassed by Chemical Engineering. To this end, the Master's Program in Chemical Engineering imparts in-depth knowledge.

(2) Building on the skills and knowledge acquired during the Bachelor's Program in Chemical Engineering, the Master's Program aims to deepen knowledge of, and to lead to specialization in, the experimental and theoretical aspects of issues within the field of Chemical Engineering, and to train students to be able to conduct independent scientific work. Based on the comprehensive scientific training they will acquire in this study program, graduates will be able to address and solve problems that arise within the most diverse fields of Chemical Engineering, and related areas, in a successful and independent manner. Master's graduates will be able to work in a broad professional field that ranges from fundamental and industrial research, application-related development, and technical sales and distribution, to functions that involve planning, review and management in industry and administration.

##### **Section 4 – Program start, standard period of study, and required coursework**

(1) In principle, students may start the program in the winter or summer semester.

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

(3) The Master's Program is worth 120 credits.

(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) The program may be studied part-time. In such cases the standard period of study is eight semesters.

##### **Section 4a – Admission requirements**

The prerequisite for admission to the Master's Program in Chemical Engineering is a Bachelor's or equivalent university degree in the subject area of Chemical Engineering or in a related study program. The relevant examination board shall decide on whether the technical and content-related requirements are fulfilled.

##### **Section 5 – Program structure**

(1) Students have the right to individually determine the order of progression of their own course of study. However, they are obliged to comply with the provisions of 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 shall not apply to obligations arising from the definition of subject-specific admission requirements for modules.

(2) Students must achieve a total of 120 credits, 48 of which must be earned in compulsory modules; at least 16 credits must also be earned in compulsory electives and a further minimum of 16 credits in elective modules, whereby the compulsory electives and elective modules taken together

must generate a total of 36 credits; furthermore, 6 credits must be earned in an industrial internship and 30 credits from the master's thesis.

(3) A total of 48 credits must be earned in compulsory modules.

(4) A total of at least 16 credits must be earned in compulsory elective modules in the areas of Chemical Engineering, Process and Safety Engineering, and Material Science and Engineering. A minimum of one module must be completed from each area.

(5) Further elective modules worth at least 16 credits must be completed in order to reach a total of 120 credits. Elective modules shall enable students to acquire additional specialized and interdisciplinary skills, as well as skills qualifying them for entry to a profession, and may be selected from the entire range of subjects offered at Technische Universität Berlin, other universities and equivalent institutions of higher education within the scope of application of the Framework Act for Higher Education (*HRG*), and foreign universities and institutions of higher education that have been accredited as equivalent. Students are recommended to choose interdisciplinary modules. The range of selectable modules also includes modules for learning foreign languages.

(6) Students must complete an ungraded industrial internship worth 6 credits. Further details are regulated by the Internship Guidelines.

(7) In the event that students have achieved comparable learning outcomes in their previous studies to those foreseen for the compulsory modules and that this academic performance has been recognized in the awarding of the preceding degree, the examination board shall decide, upon consultation with the student, on the modules that need to be taken to replace these.

### III. Requirements and conduct of examinations

#### Section 6 – Purpose of the Master's examination

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

#### Section 7 – Master's degree

On behalf of Faculty II, Technische Universität Berlin awards the academic degree of Master of Science (M.Sc.) in Chemical Engineering to students who have passed the Master's examination.

#### Section 8 – Scope of the Master's examination

The Master's examination comprises the module examinations listed in the module list (Annex 1) and the Master's thesis according to Section 9.

#### Section 9 – Master's thesis

(1) The Master's thesis is usually completed in the fourth course semester. It amounts to 30 credits and is to be produced within no more than six months. The period for completing the thesis shall be determined by the date on which the topic is issued. The deadline is kept by submitting the Master's thesis to the responsible department of the Central University Administration. 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 present proof of successfully completed module exami-

nations in no fewer than four compulsory modules to the responsible department in the Central University Administration.

(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 in 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*).

#### Section 10 – Calculation of the overall grade

Notwithstanding Section 47 (6) of the Regulations Governing General Study and Examination Procedures (*AllgStuPO*), the Internship in Chemical Engineering module, the industrial internship and elective modules according to Section 5 (5) are not considered in the calculation of the overall grade for the master's examination.

### IV. Annexes

Annex 1:	Module list – Overview of course modules attributed to the program, examinations and coursework including status (compulsory, compulsory elective, elective) and credits
Annex 2:	Proposed course schedules including credits per semester

**Annex 1: Module list**

Module	Credits	Type of examination	graded (g) / ungraded (u)
<b>Compulsory modules</b>			
Reaction Kinetics	12	oral	g
Industrial Processes and Technical Catalysis	6	portfolio evaluation	g
Multicomponent -Thermodynamics	6	oral	g
Materials and Materials Analytic	6	written	g
Process Engineering II (Multi Phase Systems and Instrumental Implementations)	8	oral	g
Project Lab Chemical Engineering	10	portfolio evaluation	g
<b>Compulsory elective modules</b>	16 minimum of		
<b>Elective Modules I – Chemical Engineering</b>			
Recent Topics of Colloid- und Interface Chemistry	3	oral	g
Anorganic Solid State and Functional Materials	4	written	g
Electro Catalysis und Electrochemical Energy Transformation	3	oral	g
Fuel Cell and Hydrogen Technology	3	written	g
Mechanisms of Heterogeneous-Catalytic Reactions	3	portfolio evaluation	g
Multi Phase Reactions	3	written	g
<b>Compulsory Elective Modules II – Process and Safety Technology</b>			
Safety and Reliability of Technical Facilities	6	portfolio evaluation	g
Safety Technology	4	oral	g
Process and Facility Dynamics	6	portfolio evaluation	g
Mechanical Process Engineering I (Particle Technology)	6	written	g
Mechanical Process Engineering II (Separation Processes)	6	written	g
Thermic Basic Operations	6	oral	g
Operation of Process Engineering machines and devices	4	portfolio evaluation	g
Process Engineering Devices	6	written	g
<b>Compulsory Elective Modules III – Material Science and Engineering</b>			
Process Engineering for Material Sciences	7	portfolio evaluation	g
Process Engineering of Polymers	6	oral	g
Biomaterials I	3	portfolio evaluation	g
Biomaterials II	3	portfolio evaluation	g
Production, Processing, Application and Technology of Ceramics	9	portfolio evaluation	g
Production, Processing, Application and Technology of Metals	9	oral	g
Production, Processing, Application and Technology of Polymers	9	oral	g
Project Management, Upscaling of Lab Projects, Product development	6	portfolio evaluation	g
Industrial Design Engineering with New Materials	6	portfolio evaluation	g
<b>Elective modules</b>	16 minimum of	according to the requirements of the module supervisor	g/u
<b>Industrial Internship</b>	6		u
<b>Master's thesis</b>	30		g
<b>Total:</b>	<b>120</b>		