

**Official Admission
Regulations**
for the

Master's degree courses
in
Chemical Engineering
and
Biochemical Engineering

dated of December, 21, 2007 – including modification October 2010



technische universität

dortmund

According to § 64 paragraph 1 and § 49 of the law of institutions of higher education in the federal state of North Rhine-Westphalia [HG - Hochschulgesetz NRW - Higher Education Act] dated of October 31st 2006 (GV. NRW P. 474) the Technische Universität Dortmund has issued the following admission regulations as a regulation of the university.

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§ 1 Validity of the Regulations

These admission regulations shall determine the admission to the Master's degree programmes in chemical engineering and biochemical engineering at the Technische Universität Dortmund on the basis of the corresponding Master's degree examination regulations (MPO).

§ 2 Entry Requirements

Only candidates who have acquired the grade of Bachelor of Science or Bachelor of Engineering with at least 210 credits in a respective programme shall be admitted to the Master's degree programme in chemical engineering and biochemical engineering. Candidates who have acquired the grade of Bachelor of Science or Bachelor of Engineering with at least 180 credits in a respective programme shall also be admitted to the Master's degree programme if the requirements according to § 4 are fulfilled.

If, at the time of the application or the enrolment for the Master's degree programme, the Bachelor's thesis has not yet been completed or the Bachelor's diploma is not yet available, an admission to the Master's degree programme is possible if the requirements are fulfilled. Evidence must be provided, at the latest, two months after the beginning of the Master's degree programme, that the Bachelor's studies have been successfully completed and the requirements for admission have been fulfilled according to the admission regulations. If these requirements are not fulfilled and evidence is not provided, the previously awarded admission shall become void with the legal consequence that the registration will be officially cancelled by the end of the semester.

The following programmes shall be considered as relevant without any further examination:

- (a) For the Master's degree programme in chemical engineering:
 - Process Engineering
 - Chemical Engineering
- (b) For the Master's degree programme in biochemical engineering:
 - Biotechnology
 - Biochemical Engineering:
 - Biochemical Process Engineering

The examination board established according to the MPO [Master's degree examination regulations] § 10 shall decide in a given case on the relevancy of other programmes with a considerable proportion of study requirements in chemical engineering, process engineering or biotechnology. Credits that the candidates have acquired in compulsory electives or free electives shall also be taken into account.

If the academic Bachelor's grade was acquired abroad, a list, established by the Kultusministerkonferenz [Standing Conference of the Ministers of Education and Cultural Affairs of the Länder] shall be taken into account to determine the equivalence with the corresponding German grades: "Foreign Bachelor's grades and corresponding first university graduations as an entry requirement for scientific engineer postgraduate studies at German technical universities".

The Bachelor's studies must be completed with an ECTS grade of A or B or there must be a special potential for the successful completion of the Master's degree programme. This has to be determined by the examination board. The examination board shall consider the progress of achievements in the Bachelor's degree programme as a substantial criterion.

§ 3 Aptitude for the Studies

If the native language of the applicant is not German and if the academic Bachelor's grade was not acquired in a German-speaking programme, a satisfactory knowledge of the German language must be asserted via the DSH [Deutsche Sprachprüfung für den Hochschulzugang ausländischer Studienbewerber – German language test for foreign applicants to be admitted to a university]. The branch of study 'Process Systems Engineering' in chemical engineering is an exception; this programme must be completed in English.

Satisfactory knowledge of the English language is a prerequisite for the Master's degree programme to work on scientific papers, understand scientific presentations and participate in discussions on scientific research. The language knowledge shall be considered as certified if the candidate:

- (a) has successfully passed a language assessment test which corresponds to a number of points according to TOEFL (Test of English as a Foreign Language) of at least 550 points in the written test or of at least 220 points in the computer-based test or
- (b) has gone at least one year to an English-speaking school or
- (c) has participated during her or his Bachelor's studies in a compulsory course, a compulsory elective or a free elective corresponding to the module Specific Technical English and has successfully completed it with an examination.

Because the Master's degree programme does not include a vocational component, an engineer-related activity of at least 14 weeks which is equal to the practical training of the Bachelor's degree programmes in chemical or biochemical engineering at the Technische Universität Dortmund shall be proven. The internship office of the Faculty Biochemical und Chemical Engineering shall decide on the equivalence.

The Master's degree programme builds upon the Bachelor's degree programme in chemical or biochemical engineering (consecutive degree programme). That is why the knowledge acquired in the compulsory courses of the Bachelor's degree programme is assumed. The knowledge is considered as available once the candidate has successfully completed a corresponding degree programme according to § 2 paragraph 2, which requires the acquisition of at least 210 credits. If this is not the case or if the candidate has completed a Bachelor's degree programme with no research oriented curriculum, requirements according to § 4 will be imposed to provide evidence of the required technical knowledge through corresponding examinations. The examination board established according to the MPO § 10 shall decide in a given case on the manner and extent of the requirements. In addition to that, the examination board may ask that the candidate takes an assessment test given by a university professor of the Faculty of Biochemical and Chemical Engineering.

§ 4 Requirements

If the candidates do not fulfil all the requirements according to §§ 2 and 3, the examination board may grant admission to the Master's degree programmes in chemical or biochemical engineering with restrictions or make the definitive admission dependent on the fulfilment of requirements during the first semester of the programme. These requirements may include the participation in special bridging courses or other courses at the university. The successful completion of these courses however, does not create credit points if the candidate has already completed a seven-semester Bachelor's degree programme. These requirements must not exceed a total of 30 credits.

The examination office may ask that candidates who, according to § 3 paragraph 2, cannot prove the necessary knowledge of the English language, acquire credits during the first semester of the programme in English-speaking modules that will be determined by the examination office.

Students of the Technische Universität Dortmund who have acquired the Bachelor of Science in chemical engineering and who want to change to the Master's degree programme in biochemical engineering must provide evidence of successfully passed examinations in the following modules prior to the preparation of the Master's thesis:

Introduction into biotechnology (Biochemical Engineering)	7 credits
Molecular biology (Chemical Engineering)	4 credits
Biotechnology / Genetic engineering	4 credits
Microbiology 2	5 credits
Bio reaction technology (Chemical Engineering)	7 credits

Students of the Technische Universität Dortmund who have acquired the Bachelor of Science in biochemical engineering and who want to change to the Master's degree programme in chemical engineering must provide evidence of successfully passed examinations in the following modules prior to the preparation of the Master's thesis:

Fluid mechanics 2	3 credits
Materials 2	3 credits
Numerical mathematics	4 credits
Technical chemistry	8 credits

The corresponding credits may have been acquired during the Bachelor's degree programme.

Students who have successfully accomplished a six-semester Bachelor's degree programme at another university according to the ECTS regulations of the European Union must complete a four-semester Master's degree programme.

For the field of study in chemical engineering or biochemical engineering that the student has chosen an extent of studies of 30 credits will be determined, which must be completed prior to the assignment of the subject of the Master's thesis in addition to the 60 credits of the two first semesters of the Master's degree programme.

The contents of the individual assignments also depend on whether a research oriented or an application oriented Bachelor's degree programme was completed. As a rule, for an application oriented programme the pre-semester will include modules that are offered in the winter semester. That is why in these cases enrolment is preferable for the winter semester. In the chemical engineering programme, for example, the pre-semester (zeroth semester) will include the following courses:

Reaction technology 1	4 credits
Mechanical and thermic process engineering	10 credits
Process dynamics and operation	5 credits
Thermodynamics 2	5 credits
Higher mathematics 3a	5 credits

For the biochemical engineering programme after the completion of an application oriented Bachelor's degree programme, as a rule, the winter semester will include the following courses:

Bio reaction technology	4 credits
Chemical engineering	10 credits
Process dynamics and operation	5 credits
Thermodynamics 2	5 credits
Higher mathematics 3a	5 credits

For students who have successfully completed a seven-semester Bachelor's degree programme at another university according to the ECTS regulations of the European Union, possible additional requirements shall be determined in a given case.

Foreign students who have not completed their Bachelor's degree programme according to the ECTS regulations but whose studies, however, will be recognised according to §§ 2 and 3, as a rule, must complete a four-semester Master's degree programme.

Prior to the beginning of studies in the chemical engineering programme, in the winter semester a pre-semester (zeroth semester) consisting of 30 credits must be completed which will include the following courses :

Introduction to Process Systems Engineering	6 Credits
Industrial chemistry (English)	4 credits
Group project	10 credits
Term assignment	2 credits
Laboratory course	4 credits
Language course German or English	4 credits

In the courses "Core areas in chemical engineering" and "Industrial chemistry" after half of the semester, e. g. at the beginning of a year, an examination must be taken. Only after the successfully passed examination the studies can continue with the group projects. The written examination can be repeated after the lecture period of the same winter semester. The second repetition shall be an oral examination prior to the beginning of the corresponding summer semester. If the second repetition was failed, admission to further Master's studies is not granted. The examination board may take variant decisions in each individual case.

For the Master's degree programme in biochemical engineering there shall be analogous regulations where an extent of studies of 30 credits will be determined depending on the given case.

§ 5 Choice of Applicants

If the number of applicants fulfilling the admission requirements exceeds the number of available university places, the examination board determined according to MPO § 10, shall make a choice among all the candidates fulfilling the admission requirements, depending on the study results acquired so far.

The assessment of study results for universities in the scope of the Basic Law [Grundgesetz] shall principally be made by calculating the average grade, which is weighted with the acquired corresponding credits for all the relevant subjects of the Master's degree programmes in chemical and biochemical engineering. Every compulsory subject or compulsory elective of the Bachelor's programmes in chemical or biochemical engineering belongs to these relevant subjects. The examination board shall decide on the relevancy of other subjects in a given case considering the respective study contents.

In the assessment of studies completed especially outside of the scope of the Basic Law Grundgesetz (wording according to § 63 paragraph 2 of the HG – Higher Education Law) the examination board may, in addition to the evaluation according to paragraph 2, take into consideration the following criteria:

- (a) Expertise by university professors on the candidate
- (b) Consultation with the candidate by telephone
- (c) Evaluation of the university where the candidate has been awarded the Bachelor's grade
- (d) External assessment tests

§ 6 Starting Date and Publication of the New Regulations

These admission regulations shall be published in 'Amtliche Mitteilungen' of the Technische Universität Dortmund and go into effect on October 1st, 2007.

Issued on the basis of the decisions of the Faculty Council of the Faculty of Biochemical and Chemical Engineering from ... and the Rectorate of the Technische Universität Dortmund from ...

Dortmund, dated ...

Technische Universität Dortmund

The Rector

University Professor

Dr. Eberhard Becker



Amendment to the admission regulations for the Master's degree programmes biochemical and chemical engineering at the Technische Universität Dortmund dated XX.XX.2010

The Technische Universität Dortmund issues the following regulations on the basis of § 64 paragraph 1 and § 49 of the law of institutions of higher education in the federal state of North Rhine-Westphalia [HG - Hochschulgesetz NRW - Higher Education Act] of October 31st, 2006 (G.V. NRW, p. 474).

Article I

In the admission regulations for Master's degree programme in chemical and biochemical engineering at the Department of Biochemical and Chemical Engineering of the Technische Universität Dortmund dated 14.12.2007 ("Amtliche Mitteilungen" of Technische Universität Dortmund 21/2007, p. 5-10 of XX.XX.2007), the following changes shall be made:

1. § 4 paragraph 6 shall be changed as follows:

- (6) Foreign students who have not completed their Bachelor's degree programme according to the ECTS regulations but whose studies, however, will be recognised according to §§ 2 and 3, as a rule, must complete a four-semester Master's degree programme.

Prior to the beginning of studies in the chemical engineering programme, in the winter semester a pre-semester (zeroth semester) consisting of 30 credits must be completed which will, for students who have selected the area of studies "Process systems engineering", include the following courses:

Introduction to process dynamics and control	5 Credits
Introduction to process balancing	5 credits
Fundamentals of chemical engineering	8 credits
Industrial chemistry	4 credits
Laboratory course	4 credits
Language course German or English	4 credits

In the courses "Introduction to process dynamics and control", "Introduction to process balancing", "Fundamentals of chemical engineering" and "Industrial chemistry", after the end of lecture period, an examination must be taken. The written examination can be repeated prior to the lecture period of the following summer semester. If more than two of these modules are failed prior to the corresponding summer semester, admission to the examinations of further courses is not granted. The second and last repetition shall be taken in the course of the corresponding summer semester. If the second repetition was failed, the student shall be exmatriculated at the end of the summer semester. The



examination board may take variant decisions in each individual case.

For the Master's degree programme in biochemical engineering and the Master's degree programme in chemical engineering excluding "Process systems engineering", there shall be analogous regulations where an extent of studies of 30 credits will be determined depending on the given case.

Article II

This Amendment shall go into effect as of 01.10.2010 and is valid for those students who enroll as of 01.10.2010 for the first time as students of the Master's degree programme biochemical and chemical engineering at the Technische Universitaet Dortmund.

This Amendment shall be published in 'Amtliche Mitteilungen' of the Technische Universitaet Dortmund.

Article III

The Rector of the Technische Universitaet Dortmund is authorised to publish the new edition of the Examination Regulations of the Master's Degree programme in biochemical and chemical engineering at the Technische Universitaet Dortmund with its new date.

Issued on the basis of the decisions of the Faculty Council of the Department of Biochemical and Chemical Engineering of the Technische Universitaet Dortmund of 16.06.2010 and of the Rectorate of the Technische Universitaet Dortmund of XX.XX.2010

Dortmund, XX.XX.2010

Technische Universitaet Dortmund

The Rector

University Professor Dr. Ursula Gather