

**Official Admission Regulations
for the Master's degree courses
in Biochemical Engineering and Chemical Engineering
at the Faculty of Biochemical and Chemical Engineering
of the Technische Universität Dortmund
dated of December 18th 2015**

According to § 2 paragraph 4 in connection with § 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 September 16th 2014 (GV. NRW p. 547) the Technische Universität Dortmund has issued the following regulations:

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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.

§ 2

Entry requirements

- (1) Requirements for admission to the Master's degree programmes in chemical engineering and biochemical engineering are:
 - a) the acquirement of the grade of Bachelor of Science in chemical engineering at the Technische Universität Dortmund or the grade of Bachelor of Science in biochemical engineering also at the Technische Universität Dortmund, or
 - b) the acquirement of another comparable grade in a comparable programme consisting of at least seven semesters and with at least 210 credit points (Leistungspunkte – LP) for achievements at a state or an officially recognised university which is within the area of the German Basic Law, or a university outside the area of the German Basic Law, as far as the examination board has attested that there are no considerable differences to the programme and grade mentioned in letter a), or
 - c) the acquirement of another comparable grade in a comparable programme consisting of at least six semesters and with at least 180 credit points (LP) for achievements at a state or an officially recognised university which is within the area of the German Basic Law, or a university outside the area of the German Basic Law, as far as the examination board has attested that there are no considerable differences to the programme and grade mentioned in letter a). In this case, according to § 4, requirements to the amount of at least 30 credit points will be imposed.
- (2) According to § 1, letters b) and c), the comparability to the grade of Bachelor of Science in chemical engineering is then usually given if the programme provides the following scientific topics:

- a) achievements in the field of fundamentals of mathematics and natural sciences to the amount of at least 35 credit points, inclusive of achievements in Higher Mathematics I, II and IIIa, Inorganic and Organic Chemistry, and
 - b) achievements in the field of engineering fundamentals to the amount of at least 38 credit points inclusive of achievements in Thermodynamics, Fluid Mechanics I and II, Transport Processes, Chemical Technology 1, Reaction Engineering and Material Science I and II, and
 - c) achievements in the field of Process Technology to the amount of at least 12 credit points inclusive of achievements in Fluid Separation Processes, Mechanical Process Engineering and Safety Technology, and
 - d) achievements in the field of Plant Design to the amount of at least 28,5 credit points inclusive of achievements in Group Project, Equipment Design, Plant and Process Design, Process Dynamics and Process Automation.
- (3) According to § 1, letters b) and c), the comparability to the grade of Bachelor of Science in biochemical engineering is then usually given if the programme provides the following scientific topics:
- a) achievements in the field of fundamentals of mathematics and natural sciences to the amount of at least 42 credit points, inclusive of achievements in Higher Mathematics I, II and IIIa, Inorganic and Organic Chemistry, Biochemistry and Molecular biology, and
 - b) achievements in the field of engineering fundamentals to the amount of at least 31 credit points inclusive of achievements in Thermodynamics I and II, Fluid Mechanics I, Material Science I, Biochemical Reaction Technology 1 and Transport Processes, and
 - c) achievements in the field of Process Technology to the amount of at least 12 credit points inclusive of achievements in Fluid Separation Processes, Mechanical Engineering and Safety Engineering, and
 - d) achievements in the field of systems engineering to the amount of at least 28,5 credit points inclusive of achievements in Group Project, Equipment Design, Plant and Process Design, Process Dynamics and Process Automation.

- (4) The examination board of the Faculty of chemical engineering and biochemical engineering is responsible for checking the entry requirements. The criterion for attesting whether the differences are considerable or not, is by comparing achieved grades and programmes according to their contents, scope and requirements to the grade and programme according to § 1 letter a). Depending on this evaluation, according to § 4, the examination board can admit the candidates without requirements or it can impose requirements to assure the completion of missing achievements, or it can refuse admission.
- (5) Because the Master's degree programme does not include a vocational component, an engineer-related activity shall be proven which shows no essential differences to the practical training of the Bachelor's degree programmes in chemical or biochemical engineering at the Technische Universität Dortmund.
- (6) If the academic Bachelor's grade was acquired abroad, the equivalence agreements approved by the Kultusministerkonferenz and the Hochschulrektorenkonferenz [the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder and the Association of Universities and other Higher Education Institutions in Germany], as well as the stipulations established within the university partnerships and the recommendations given by the Zentralstelle für ausländisches Bildungswesen [Central Office for Foreign Education] shall be taken into account in order to check whether the differences are considerable or not.
- (7) According to §§ 1 and 2, the average grade of the completed prerequisite studies must be 3,0 or better, or, if the academic grade was acquired abroad, the average grade must be at least equivalent to a grade, that corresponds to a 3,0 within the respective national grade systems. If this grade was not achieved there must be a special potential for the successful completion of the Master's degree programme. In connection with this, the progress of achievements in the Bachelor's degree programme shall be considered as a substantial criterion.

§ 3

Aptitude for the studies

- (1) If the applicant is not an academic national 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 German language test for foreign

applicants to be admitted to a university (DSH [Deutsche Sprachprüfung für den Hochschulzugang ausländischer Studienbewerber] or an equivalent certified language course).

- (2) The branch of study 'Process Systems Engineering' in the Master's degree programme in chemical engineering is entirely completed in English. Knowledge of the English language shall be proven and must correspond to the Reference Level B2 of the Common European Framework of References for Languages (GeR [in German] [or CEFR in English]). Satisfactory knowledge of the English language for this field of study shall be asserted through language examinations, and if necessary, in a GRE test, or it must be proven by corresponding achievements.

§ 4

Requirements

- (1) 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. These requirements may include the participation in a pre-semester or a successful completion of other courses at the university. The marks of these courses however, achieved on the bases of the requirements, do not count for the Master's studies overall mark if the candidate has already completed a seven-semester Bachelor's degree programme.
- (2) These requirements must not exceed a total of 30 credit points. The maximum limit of requirements can be exceeded however, if more requirements are necessary to compensate the standard period of studies of earlier studies. In such a case, requirements may be determined to the amount of a maximum of 60 credit points. Requirements are strictly inadmissible when satisfactory competences can't be proven after having acquired the grade of Bachelor of Science. This is the case when in more than two areas, as defined by §§ 2 and 3, achievements can't be provided. The examination board shall decide in a given case on exceptions from this.
- (3) The examination requirements which have to be provided within the framework of the requirements can be repeated twice, if they are not passed or are not considered as passed. If an individual requirement is not passed, only this has to be repeated. Passed examinations cannot be repeated.

- (4) 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, are obliged to fulfil the following requirements unless they have already completed them within the framework of additional qualifications in the Bachelor's degree programme:

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| Individual requirement Microbiology 1 | 3 credit points |
| Module Biochemistry/Molecular Biology | 7 credit points |
| Module Microbiology and Genetic Engineering | 9 credit points |
| Individual requirement Biochemical Reaction Engineering | 3 credit points |
| Individual requirement Cell Biological Systems | 4 credit points |

The completion of these requirements must be proven prior to the registration for the Master's thesis.

- (5) 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, are obliged to fulfil the following requirements unless they have already completed them within the framework of additional qualifications in the Bachelor's degree programme:

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| Individual requirement Fluid Mechanics 2 | 3 credit points |
| Individual requirement Material Science 2 | 3 credit points |
| Individual requirement Reaction Engineering 1 b | 2 credit points |
| Individual requirement Chemical Technology 1 | 5 credit points |

The completion of these requirements must be proven prior to the registration for the Master's thesis.

- (6) For students who have successfully accomplished a six-semester Bachelor's degree programme at another university according to the ECTS regulations of the European Union, the Master's degree programme additionally includes a pre-semester. For the field of study that the student has chosen the examination board of the Faculty of chemical engineering and biochemical engineering determines requirements to

the amount of at least 30 credit points depending on the given case. The completion of these requirements must be proven prior to the registration for the Master's thesis. The achievements to the amount of 30 credit points shall be calculated within the overall grade of the Master's degree programme.

- (7) For students who have successfully accomplished a seven-semester Bachelor's degree programme at another university according to the ECTS regulations of the European Union, requirements to the amount of a maximum of 30 credit points may be determined depending on the given case.
- (8) For 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, requirements may be determined depending on the given case. If they have successfully accomplished a seven-semester Bachelor's degree programme, requirements to the amount of a maximum of 20 credit points may be determined, and if they have accomplished a six-semester Bachelor's degree programme, requirements to the amount of a maximum of 60 credit points may be determined.
- (9) Students of the branch of study 'Process Systems Engineering' in chemical engineering have to fulfil requirements of at least 30 credit points. The following modules shall be completed in the framework of a pre-semester:
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| 1. Introduction to Process Dynamics and Control | 5 credit points |
| 2. Introduction to Process Balancing | 5 credit points |
| 3. Fundamentals of Chemical Engineering | 8 credit points |
| 4. Industrial Chemistry | 4 credit points |
| 5. Laboratory Course | 4 credit points |
| 6. Language Course German or English | 4 credit points |

From the modules n° 1 to 4, at least two must be successfully completed by the end of the pre-semester. Otherwise admission to other module examinations is refused. In a given case the examination board may propose different regulations.

§ 5

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, 2015.

Issued on the basis of the decision of the Faculty Council of the Faculty of Biochemical and Chemical Engineering from December 16th 2015 and the Rectorate of the Technische Universität Dortmund from December 15th 2015.

Dortmund, dated of December 18th 2015

The Rector
of the Technische Universität Dortmund

University Professor
Dr. Dr. h. c. Ursula Gather