Statute on the aptitude assessment
for the Bachelor's programs
Management and Technology (TUM-BWL)
and
Management and Technology
at the Technical University of Munich

dated May 15, 2019

as amended by the Articles of Amendment dated July 26, 2021

According to Article 13 subsection 1 sentence 2 in connection with Article 44 subsection 4 sentence 7 of the Bavarian university regulation (Bayerisches Hochschulgesetz), as well as § 34 s u b s e c t i o n 2 of the qualification regulation (Qualifikationsverordnung) (BayRS 2210- 1-1-3 K/WK), the Technical University of Munich releases the following statute:

§ 1
Purpose of the Statute

(1)   [1]Admission of the Bachelor's programs Management and Technology (TUM- BWL) and Management and Technology at the Technical University of Munich (hereinafter referred to as TUM-BWL degree programs) in the first or a higher subject semester requires a special set of qualifications. [2]The Bachelor's program Management and Technology (TUM-BWL) is offered both in the German Track and in the English Track. [3]The Bachelor's program Management and Technology is offered in English. [4]The aptitude assessment procedure for the Bachelor's program in Management and Technology (TUM-BWL) can be completed in German and English for the German Track and in English for the English Track. [5]The aptitude assessment procedure for the Bachelor's program Management and Technology can be completed in English. [6]The Bachelor's degree programs offer a unique program profile, which is elaborated upon in attachment 1. [7]Therefore, in addition to the requirements specified in the examination and study regulation (Fachprüfungs- und Studienordnung, FPSO) the following provisions will be considered during the admission process.

(2)   [1]The purpose of the official process is to determine whether, in addition to the qualification proven with the acquisition of the higher education entrance qualification (HZB), the aptitude for the special qualitative requirements of the Bachelor's degree programs TUM-BWL is met. [2] In addition to holding the university entrance qualifications, the following admission requirements are required:

Program specific competencies:

1. You have skills in the fields of mathematics and natural sciences.
    You have the ability to apply these skills in the field of the interface between Engineering/natural Science and economics

2. In combination, an ability to clearly and precisely argue in the German or in English language.

3. Ability to understand and process economic issues.

[3] In order to acquire scientific and mathematical learning contents in engineering and the natural sciences, students in the qualified interdisciplinary TUM-BWL programs must possess sound knowledge in the field of mathematics and the natural sciences. [4]This is particularly important because TUM-BWL students will attend undergraduate courses along with students from these related disciplines. [5]Logical and analytical skills, as well as the ability to formulate clear and precise arguments in the languages mentioned in sentence 2 no. 2 are necessary competencies, which facilitate communication with experts in the interdisciplinary fields of economics and engineering/natural sciences.

§ 2
Admission process

(1) The admission process will be carried out on a semi-annual basis during the summer semester for the subsequent winter semester, as well as during the winter semester for the subsequent summer semester, the latter of which is only available for applicants to higher semesters.

(2) Applications for admission for the subsequent winter semester can be submitted to the Technical University of Munich in the online application procedure until July 15. Applications for the following summer semester can be submitted until January 15 (exclusion periods).

(3) [1]Applications for the Bachelor's program Management and Technology (TUM-BWL) can be submitted either in the German or English language according to § 1 subsection 1 sentence 2 and 4. [2]Applications for the Bachelor's program Management and Technology can be submitted in the English language according to § 1 subsection 1 sentence 3 in 5.

(4) Please include the following attachments in your application:

1. Resume in accordance with the prescribed format,

2. Proof of university entrance qualifications,

3. Letter of motivation totaling a maximum of two pages, in which applicants elaborate on their choice for the program, as well as on their ability to understand and develop situations from an economic context. Applicants should also be able to explain which skills, talents and interests would qualify them for the program, for example through extracurricular activities; in the case of an application for both degree programs, a justification must be included for each program,

4. Documents required in accordance with § 7 subsection 3 Statutes of Technical University of Munich on enrolment, re-enrolment, leave of absence and exmatriculation (ImmatS) as amended,

5. Proof that the applicant has written the motivation letter alone, without any external help and that any external sources used, are clearly highlighted. Should we identify any indications that the motivation letter has not been written by the applicant alone, admission may be denied.

§ 3
Committee

[1]The admission process for the TUM-BWL programs is carried out by a committee which is selected by the dean. [2]The committee is composed of 47 university professors as defined by article 2 subsection 3 sentence 1 of the Bavarian university regulation (BayHSchPG), as well as 46 research associates. [3]A student representative will provide consultative guidance to the committee. [4]The role of the chairman will be assumed by the dean. [5] The committee shall ensure an appropriate distribution of business. [6]For all further matters, procedural rules under article 41 of the Bavarian university regulation (BayHSchG) shall apply. [7]Committee members will be elected for two years with the possibility of extending their tenure.

[8] The TUM Center for Study and Teaching- Application and Matriculation and the Office of Student Affairs will support the Qualification Committee; the Qualification Committee can assign the TUM Center for Study and Teaching - Application and Matriculation and the Office of Student Affairs the task of the formal admission examination according to § 4, as well as the allocation of points for individual criteria and the overall result, on the basis of previously defined parameters for which there is no leeway for evaluation, in particular the conversion of the average grade of the HZB, calculation of the subject-specific individual grades, as well as the determination of the overall score achieved. [9] The examination of the second stage of the process will be delegated by the Committee to two members of the Committee, at least one of whom must be a university professor; different members of the Committee may be appointed in the second stage.

§ 4
Admission requirements

[1]Admission guidelines require submission of all documents listed in § 2 subsection 4 by the stated deadline in due form and in their entirety to the Technical University of Munich. [2]If this is not the case, admission to the aptitude assessment procedure will not be granted.

§ 5
Admission process: First stage

(1)   During the first stage of the admission process, applicants will be assessed on the basis of the following criteria:

1. Grade point average (GPA) of the university entrance qualification and
2. Subject-specific grades;

    The weighting of the subject specific grades includes the subjects

    - Mathematics (weighted double)

    - The best science-related subject (weighted double)

    - In the case of an application in accordance with § 1 subsection 1 sentence

      1 and 2: German or English language (weighted single)

    - in the case of an application according to § 1
      subsection 1 sentences 3 and 5 English language
      (weighted single)

    The grades listed in the HZB which were acquired in the last four semi-annual grade certificates, up to and including the grade certificates acquired upon graduation will be counted in the evaluation. The grades for the relevant subjects will be summarized according to their weight and divided by the total number of weighted grades. Research papers or other graded performances will not be considered.

Should more than one science-related subject be listed in the final grade certificate, the applicant may choose which subject shall be considered for their evaluation. In the case that the grade certificates were not issued on a semi-annual basis, only subject-specific grades issued with the university entrance qualification will be evaluated. Should the grade certificate not include all relevant subjects listed under point 2, the weighted grade point average will only consider the other relevant grades available; for the missing subject(s), the applicant will be invited to stage two of the admission process to demonstrate possession of the relevant knowledge according to § 5 subsection 2 sentence 3 and 4.

3. In deviation from point 1 and 2, all graduates of advanced professional trainings provided by a chamber of commerce (Meisterprüfung) will be evaluated based on their grade point average achieved upon completing professional training, as well as on their grade specific grade point average comprising the subjects of mathematics (weighted double), German or English (weighted normally) and a science-related subject (weighted double). In a similar way, graduates of vocational schools or professional academies will be evaluated based on their grade point average achieved upon graduation or, should no grade point average is indicated, based on the weighted average of individual subject grades (excluding optional subjects), as well as on the subject specific grade point average for the subjects mathematics (weighted double), German or English (weighted normally) and a science-related subject (weighted double). Should the grade certificate not include all relevant subjects listed under point 2, the weighted grade point average will only reflect the other relevant grades available. For the missing subject(s), the applicant must prove he or she possesses the relevant knowledge by participating in the second stage of the admissions procedure.

(2) For the assessment procedure the following applies:

1. [1]The grade point average of the university entrance qualification will be converted into points from 0-100, with 0 being the lowest and 100 being the highest possible outcome. [2]The scale is constructed such as that a barely passed graduation will be awarded 40 points (see conversion formula in attn. 2). [3]For applicants who can prove that they were factors in their persona which were outside of their control, which negatively influenced the outcome of their university entrance qualification may participate in the admission upon presenting a school assessment confirming these disadvantages.

2. [1]The result of the assessment of the subject-specific grades according to subsection 1 point 2 will be converted into points on a 100- point scale (see conversion formula in attn. 2). [2]The resulting value will be rounded up to the next larger number.

3. [1]The overall assessment of the first stage is compromised of the sum of the grade point average under point 1 multiplied by 0,65 and the subject specific grade point average under point 2 multiplied by 0.35. [2] The resulting value will be rounded up to the next larger number.

(3) [1]If 88 points and more have been achieved in the first stage, the subject-specific aptitude for the study programs TUM-BWL is determined. [2] All subject-specific grades, however have to be listed on the final grade certificate that has been received upon graduation; even if the number of points required according to sentence 1 are achieved, the applicants must demonstrate during the second stage of the admission process that they possess the necessary skillset relevant for the program.

(4)   [1]All remaining applicants will be transferred to the second stage of the admission process. [2]Within the scope of the second stage applicants will invited for an interview. [3]The appointment date for the interview will be announced at least one week prior to the interview date.

§ 6
Admission Process: Second stage

(1)   Within the second stage of the admission process, the applicant's grade point average, as well as the result of the interview will be equally weighted and evaluated.

(2)   [1]The selection interview will be held in a private environment and is offered in the German and English language as specified in § 1 subsection 1 sentences 2 and 4 and in the English language as specified in § 1 subsection 1 sentences 3 and 5. [2] The interview will be held as a group conversation with two committee members, of which one participating member has to be presented by a professor, as specified in article 2 subsection 3 sentence 1 of the Bavarian university regulation (BayHSchPG). [3]Individual video conference can be held in case such a request was confirmed by the committee. [4]The applicant carries the risk for technical difficulties in which case, the Technical University of Munich cannot be held responsible. [5]With the consent of the applicant, a student representative may join the conversation. [6]Interviews will be held for approximately ten minutes per applicant. [7]The interview helps determine whether the applicant is capable in reaching the goals of the study program independently and on a scientific basis. [8]Questions will not relate to knowledge offered through the TUM-BWL degree programs. [9]The interview may include questions relating to the documents submitted under § 2 subsection 4. [10]The appointment is to be attended at the date provided. [11]The content of the conversation covers the following topics, which are weighted in the assessment as indicated in the brackets:

    1. Mathematical knowledge:

        The applicant is able to formulate conclusions, analyze problems verbally and in writing (particularly within the interdisciplinary fields of economics and engineering or the natural sciences), perform relevant calculations, apply mathematical laws and concepts and produce viable results within an appropriate time horizon (1/5).

    2. Knowledge in the natural sciences:

        The applicant is able to elaborate concepts in the field of the natural sciences and apply concepts to current issues (particularly in the interdisciplinary field of economics and natural sciences), compare alternatives and propose possible solutions (1/5).

    3. The ability to combine and apply methods from the interdisciplinary field between economics and engineering or the natural sciences to current issues:

        The applicant is able to elaborate on current developments in the field of economics and engineering or the natural sciences. The applicant is further able to formulate precise arguments utilizing relevant terms and argumentative concepts in the German or English language (3/5).

[12]On the basis of the weighting defined in sentence 11, every committee member assesses interviews on a standardized evaluation sheet according to the following scale:

Grade	Points
Excellent	91-100
God	75-90
Satisfactory	60-74
Sufficient	40-59
Poor	20-39
Not sufficient	0-19

[13]The overall evaluation of the interview is calculated as an arithmetic average of the individual evaluations of committee members which are rounded up to the next larger number, in the case that the resulting numbers are decimal.

(3)   [1]The overall evaluation of the second stage is the sum of the university entrance qualification (see § 5 subsection 2 point 1) multiplied by 0.5, as well as the individual evaluations of the committee members from the interview multiplied by 0,5 (see para. 2). [2] Decimal values will be rounded up to the next larger number.

(4)   If the total score formed according to Paragraph 3 is 70 or higher, the aptitude for the programs TUM-BWL is determined on the basis of the result of the second stage of the aptitude assessment procedure.

(5)   Applicants with an evaluation result of or 69 or less points are not deemed fit for the TUM-BWL study programs.

§ 7
Notifications

[1]The result of the aptitude assessment procedure will be disclosed through a written notification. [2]In case of an application for both degree programs, a decision is issued for each degree program. [3]If there is no leeway in the assessment of the individual criteria and in the determination of the overall results of the first and second stage, a decision by the commission is not necessary. [4]Rejection notifications shall include an explanation for the cause of rejection, as well as information about legal remedies.

§ 8
Documentation

[1]The process of the aptitude assessment procedure must be documented; in particular, the assessment of the selection interview by the commission members as well as the result of the evaluation. [2]A transcript of the selection interview shall be prepared, in which the day, duration and venue of the evaluation, the names of the committee members involved, the names of the applicants as well as the essential topics of the interview shall be presented in key points.

§ 9
Resubmission

Those who have not provided proof of suitability for the degree programs may resubmit their application one more time in the aptitude test procedure.

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Instatement*)

[1]This Statute has been put into effect as of 1.April 2019. 1.[2] It applies the first time to the aptitude assessment procedures for the winter semester of 2019/2020.[3] At the same time, the statute dated 4 May 2017 is consequently ineffective.

*) This provision concerns the entry into force of the Articles of Association in the original version of 15 May 2019. The date of entry into force of the subsequent amendments shall be determined by the respective amending Articles of Association.

Attachment 1

Profile of the Bachelor Studies Technology and Management Oriented Business Administration and Management and Technology at the Technical University of Munich

The Bachelor programs Technology and Management-Oriented Business Administration or Management and Technology deal with the fundamentals of business administration and its interfaces with various engineering and natural science fields and have a fundamentally quantitative orientation. The diverse interdependencies between the individual organizational areas as well as the progressive dissolution of traditional departmental boundaries are changing the nature of the qualifications required and demand qualified interdisciplinary thinking and action from its actors. Particularly at the interface between the economic and the engineering or natural science divisions of a company, communication and know- how barriers repeatedly arise in practice, which result from a lack of knowledge of the respective other discipline and a lack of understanding for the respective other subject culture.

These Bachelor programs provide future graduates with the best prerequisites for mastering these new challenges at the interface between business administration and engineering/natural sciences. The interlocking of business education with an engineering or natural science subject enables students to understand better the differing worlds of thought in both scientific fields and to apply successfully this knowledge to later professional practice.

These Bachelors programs are fundamentally interdisciplinary. Although the focus is on business education, the bridge to technology is built both in the actual business modules and in the engineering or natural science area through the integration of a major focus. Due to this interdisciplinary orientation, the degree programs require qualified interdisciplinary competence in the sense of specific preliminary skills to be combined from methodologically fundamentally different subject cultures.

These Bachelors programs are therefore aimed at school leavers with a university entrance qualification as well as those with vocational qualifications who think logically, have a high affinity for mathematical and quantitative approaches, communicate complex chains of reasoning in a clear and comprehensible manner and show an interest in engineering or natural science issues. The simultaneous development of these skills is crucial in order to be able to implement the business side of the study program on a quantitative and qualitative level on the one hand, and at the same time to muster the enthusiasm and motivation to deal with an engineering or natural science subject.

The subject of engineering and natural science will be attended by the students, as well as the students of the respective undergraduate program, so that interest and skills must be pronounced in order to be able to keep up successfully.

<u>Attachment 2</u>

Conversion formula

The conversion of different grading scales into points on a scale from Zero to 100 is done according to the regulations 1 to 3. 100 points correspond to the best possible evaluation and 40 points to a performance just rated as passed in the respective initial grading system.

1.   **German grading system**
      With 1 as best and 6 as worst grade

Points = 120-20* Grade.

The marks and1, 2... 56 consequently correspond to and 100, 80,..., 20 and 0 points. Grade 4 corresponds to 40 points. Since German grades in university entrance qualification are given up to one decimal place, no rounding to whole numbers is necessary when applying the formula of No. 1.

2.   **German point system (e.g. college level)**
      With 15 as best and 0 as worst
      score

Points = 10+6 * Point value.

3.   **Any numeric grade system**
      With grade N, where N_{opt} is the best grade and grade N_{best} is just enough to pass.

Points = 100-60* (N_{opt} - N) / (N_{opt} - N_{best}).

If the score calculated according to the formula given is not an integer, will it be rounded up to the next whole number.

E.g.: In the Bulgarian grading system applies: N_{opt} = 6, N_{best}= 3 and 1 is the worst possible grade. The formula given simplifies to: Points = 100 – 20* (6 - N).