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Examination and Academic Regulations for the Master's Program Management and Digital Technology at the Technical University of Munich

Dated 30. October 2023

In accordance with Art. 9 sentence 1 and 2 in conjunction with Art. 80 (1) sentence 1, Art. 84 (2) sentence 1 and Art. 90 (1) sentence 2 of the Bavarian Higher Education Innovation Act (BayHIGAct), the Technical University of Munich issues the following statutes:

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§ 34

Applicability, Academic Titles and related degrees

- (1) ¹These Examination and Academic Regulations for the Master's program in Management and Digital Technology (FPSO) complement the General Academic and Examination Regulations for Bachelor's and Master's programs at the Technical University of Munich (APSO) dated 18. March. 2011 as amended. ²The APSO shall have precedence.
- (2) ¹Upon successful completion of the Master's examination the degree „Master of Science" („M.Sc.“) is awarded. ²The academic title may also be used with the name of the university „(TUM)“.
- (3) ¹The master degree „Technologie- und Managementorientierte Betriebswirtschaftslehre“, „Wirtschaft mit Technologie“, Management and Technology und Sustainable Management and Technology of the Technical University of Munich are related degrees. ²Where a student transfers from another university to the Technical University of Munich, the examination board in charge will decide on the basis of the examination/general academic regulations of that other university if the programs are related.

§ 35

Commencement of Studies, Standard Duration of Studies, ECTS

- (1) The Master's program in Management and Digital Technology at the Technical University of Munich commences in both, the winter and the summer semester.
- (2) ¹The number of credits in the elective area required to obtain the Master's degree is 90 credits (60 weekly hours per semester) spread over three semesters. ²Additionally, 30 credits (max. six months) have to be achieved for the completion of the Master's thesis pursuant to § 46. (Optional: The number of examinations in the required, elective (optional: subjects to be completed in the Management and Digital Technology Master's program according to Appendix 1 (II) is a minimum of 120 credits. The standard duration of study for the Master's program will be a total of four semesters

§ 36

Eligibility Requirements

- (1) Eligibility for the Master's program in Management and Digital Technology is demonstrated by.
 1. a qualified Bachelor's degree obtained after a program of at least six semesters from a domestic or foreign institution of higher education or at least an equivalent degree in management and technology, „Technologie- und Managementorientierte Betriebswirtschaftslehre“, management, economics, or comparable programs.

2. an adequate knowledge of the English language; students whose native language or language of instruction is not English must demonstrate proficiency through an acknowledged language test such as "Test of English as a Foreign Language" (TOEFL) (minimum of 88 points), the "International English Language Testing System" (IELTS) (at least 6.5 points) or the "Cambridge Main Suite of English Examinations"; if the undergraduate program includes exams worth 12 credits in English-language modules or a thesis written in English worth 12 credits, or a GMAT score of at least 600 points, this is also proof of sufficient knowledge of the English language,
3. proof of specialist knowledge in the form of a "Graduate Management Admission Test (GMAT)" with at least 640 points mandatory for applicants who have completed their first degree in the following countries: China, Bangladesh, India, Egypt, Pakistan; other applicants with a first degree that was not completed in a signatory country of the Convention on the Recognition of Qualifications concerning Higher Education in the European Region of April 11, 1997 (hereinafter: Lisbon Convention) are recommended to submit the test
4. passing of the Aptitude Test pursuant to Appendix 2.

(2) A qualified university degree within the meaning of para. 1 exists if there are no significant differences with regard to the competencies (learning outcomes) acquired in the aforementioned bachelor's degree programs.

(3) ¹For the purpose of determining in accordance with subsection (2), the compulsory modules of the Bachelor's degree program in Management and Technology shall be taken into account. ²If there are no examinations for this determination, the selection committee may, in accordance with Appendix 2 No. 3, require that, in order to prove the qualification referred to in paragraph 1, these examinations are to be taken as additional basic examinations in accordance with Annex 2, No. 5.1.3.³Applicants must be informed of this after reviewing the documents as part of the first stage of the aptitude test.

§ 37

Modular Structure, Module Examination, Courses Fields of Study, Language of instruction

(1) ¹General regulations for modules and courses are laid down in §§ 6 and 8 APSO. ²In the event of deviations from the module regulations, § 12 (8) APSO shall apply.

(2) ¹The curriculum listing the required and elective courses is included in Appendix 1 (II).

(3) ¹The language of instruction in the Master's program in Management and Digital Technology is generally English. ²If students have not provided proof of German language skills at the time of application, admission will be granted subject to the successful completion of at least one module in which German language skills are acquired by the end of the second semester. ³The examination board will announce the offer in the usual way. ⁴Voluntary extracurricular German courses, such as those offered by the TUM Language Center, are also recognized.

§ 37 a
Project Study (Advanced Project Studies in Management and Digital Technology)

- (1) ¹In the Master's degree course in Management and Digital Technology, students can complete an Advanced Project Studies course. ²The project studies course consists of project work that involves active participation in a practical or research project related to the content of the degree program. ³It comprises 12 credits and 360 hours of work. ⁴The project studies are completed with a written report and an oral presentation. ⁵It should be completed by a group consisting of at least two students. ⁶The project should be completed by the end of the third semester. ⁷The project studies can also be completed abroad in a group consisting of at least two students. ⁸This is intended to demonstrate that tasks can be solved in a team. ⁹The contribution to be assessed as an examination achievement must be clearly recognizable and assessable on an individual basis. ¹⁰This also applies to the individual contribution to the group result. ¹¹For the assessment, § 17 APSO applies.
- (2) ¹The module Advanced Project Studies in Management and Technology has to be supervised by a professor of the TUM School of Management. ²Furthermore, academic employees can also be appointed as examiners if the respectively applicable requirements of the University Examination Regulations [Hochschulprüfungsverordnung] are met.

§ 38
Examination Deadlines, Progress Monitoring, Failure to Meet Deadlines

- (1) Examination deadlines, progress monitoring, and failure to meet deadlines are governed by § 10 APSO.

§ 39
Examination Board

Pursuant to § 29 of the APSO the board responsible for all decisions concerning examination matters shall be the Master's Examination Board of the TUM School of Management.

§ 40
Recognition of Periods of Study, Coursework, and Examination Results

The recognition of periods of study, coursework and examination results is governed by the provision of §16 of the APSO.

§ 41 Continuous Assessment Procedure

- (1) ¹In addition to written and oral examinations, possible forms of examination in accordance with §§ 12 and 13 APSO in this degree program are, in particular, written examinations [Klausuren], laboratory work, exercises (possibly tests), reports, project work, presentations, learning portfolios, scientific papers and the examination course [Prüfungsparcour]. ²The specific components of the respective module examination and the competencies to be tested are listed in the module description. ³The examination can be carried out as an individual or group examination if the topic is suitable; §18 (2) sentences 2 and 3 APSO apply accordingly.
- a) ¹A “**Klausur**” is a supervised written examination. In these written examinations, students are expected to demonstrate, within a limited amount of time and using predefined methods and resources, their ability to identify problems, find solution strategies and, if required, implement them. ²The duration of written examinations [Klausuren] is provided for in §12 (7) of the APSO.
- b) ¹A **laboratory assignment** includes, depending on the discipline, experiments, measurements, work in the field, field exercises etc. with the aim of carrying out, evaluating and gaining knowledge. ²Components can be, for example: the description of the processes and the respective theoretical foundations including literature study, preparation and practical implementation, any necessary calculations, their documentation and evaluation as well as the interpretation of the results with regard to the knowledge to be gained. ³The laboratory work can be supplemented by a presentation in order to test the communicative competence in presenting scientific topics to an audience.
- c) ¹**Exercises** (tests where applicable) are administered to assess a student’s ability to complete assigned tasks (for example, solving mathematical problems, writing computer programs, designing models) using theoretical knowledge to solve application-oriented problems. ²Exercises are designed to assess a student’s factual and detailed knowledge and its application. ³Practical exercises may be administered in writing, orally, or electronically. ⁴Possible modes are assignments, exercise sheets, programming exercises, (e-) tests, design tasks, posters, and exercises related to an internship etc..
- d) ¹A **report** is a written record and summary of a learning process for the purpose of presenting the acquired knowledge in a structured way and analyzing the results in the context of a module. ²Students are expected to demonstrate that they have understood all essential aspects and are able to present them in writing. ³Reports may include excursion reports, internship reports, work reports, etc. ⁴The written report may be complemented by a presentation for the purpose of assessing the student’s communication competency in presenting scholarly work to an audience.
- e) ¹**Project work** is designed to reach, in several phases (initiation, problem definition, role assignment, idea generation, criteria development, decision, implementation, presentation, written evaluation), the defined objective of a project assignment within a given period of time and using suitable instruments. ²In addition, project work may include a presentation in order to assess a student’s communication competency in presenting

scholarly work to an audience. ³Project work can also include creative designs, drawings, plans, models, objects, simulations and documentation.

- f) ¹A **research paper** is a written assignment in which students work independently on solving complex scholarly or scholarly-application-oriented problems, using the scientific methods of the related discipline. ²Students are expected to demonstrate that they are able to solve problems corresponding to the learning outcomes of the module in question in compliance with the guidelines for scholarly work – from analysis and conception to implementation. ³Research papers, differing in their requirement standards, may take the form of a conceptual framework/theory paper [Thesenpapier], abstract, essay, term paper, seminar paper, etc. ⁴The research paper may be complemented by a presentation and/or a colloquium for the purpose of assessing the student's communication competency in presenting scholarly work to an audience.
- g) ¹A **presentation** is a systematic and structured oral performance supported by suitable audio-visual equipment (such as projector, slides, posters, videos) for the purpose of demonstrating and summarizing specific issues or results and paring complex problems down to their essential core. ²For the presentation, the student is expected to demonstrate that the student is capable of preparing a certain topic within a given time frame in such a way as to present or report it in a clear and comprehensible manner to an audience. ³In addition, the student is expected to demonstrate that the student is able to respond competently to any questions, suggestions or discussions brought by the audience relating to the subject area. ⁴The presentation may be complemented by a brief written precis.
- h) ¹An **oral examination** is a timed, graded discussion on relevant topics and specific questions to be answered. ²In oral examinations students are expected to demonstrate that they have reached the qualification objectives laid out in the module descriptions, understood the central concepts of the subject matters covered by the exam, and are able to apply them to specific problems. ³The duration of the examination is provided for in § 13 (2) of the APSO.
- i) ¹A **learning portfolio** is a collection of written materials compiled by the student according to predefined criteria that exhibits the student's progress and achievements in defined content areas at a given time. ²Students are required to explain according to which criteria they have chosen the materials and their relevance for their learning progress and the achievement of the qualification objectives. ³With the learning portfolio, students are expected to demonstrate that they have taken active responsibility for their learning process. ⁴Depending on the module description, types of independent study assessment in a learning portfolio may include, in particular, application-oriented assignments, web pages, weblogs, bibliographies, analyses, conceptual framework/theory papers, as well as the graphic representation of facts or problems. ⁵ On the basis of the learning portfolio created, a summary discussion can take place for verbal reflection.
- j) ¹In the context of an **examination course**, several examination elements must be completed within one examination performance. ²In contrast to a partial module examination, the examination performance is examined in a coherent organizational manner (in terms of time and place). ³Examination elements are several different examination formats which, in their entirety, cover the complete competence profile of the module. ⁴Examination elements may in particular also be examination formats in

accordance with letters g) and h) in combination with a practical performance. ⁵The total duration of the examination must be specified in the module catalog.

2) ¹The module examinations will, as a rule, be taken concurrently with the study program. ²Type and duration of module examinations are provided for in Appendix 1 (II). ³In the event of divergence from those provisions, § 12 (8) of the APSO must be complied with. ⁴The assessment of the module examination is governed by § 17 of the APSO.

3) Where Appendix 1 (II) provides that a module examination is either done in written or oral form, the examiner will inform the students in appropriate form, at the commencement of classes at the latest, of the type of examination to be held.

§ 42

Registration for and Admission to the Master's Examination

- (1) ¹Students who are enrolled in the Master's program in Management and Technology are deemed to have been admitted to the module examinations of the Master's examination. ²Insofar as admission to individual modules requires the passing of modules, this is specifically indicated in Annex 1.
- (2) ¹Registration requirements for required and elective module examinations are stipulated in § 15 (1) APSO. ²The registration requirements for repeat examinations are stipulated in § 15 (2) APSO.

§ 43

Scope of the Master's examination

(1) The Master's examination consists of:

1. the module examinations in the corresponding modules pursuant to subsection 2
2. the module Master's thesis pursuant to § 46

(2) ¹The module examinations are listed in Appendix 1 (II). ²The following credits must be obtained.

1. 12 credits of elective modules in the area of methods.
2. one of two management specializations can be chosen. When choosing the specialization
 - a) Family Enterprises, at least 30 credits of elective modules must be obtained.
 - b) Digital Enterprises, elective modules of a minimum of 30 credits must be obtained.

At least 6 credits have to be obtained by completing an advanced seminar. If no specialization in management is chosen, elective modules in management of at least 30 credits must be taken from the above-mentioned specializations, of which at least 6 credits must be taken by completing an advanced seminar.

3. 30 credits of elective modules must be completed in the field of digital technology.

³In addition, 18 credits of elective modules must be taken in the field of management.

⁴For the selection of the modules, § 8 (2) APSO must be observed.

§ 44

Repeat and Failed Examinations

- (1) The repetition of examinations is governed by § 24 of the APSO.
- (2) Failure of examinations is governed by § 23 of the APSO.

§ 45

Coursework [Studeinleistungen]

The Master's program in Management and Digital Technology does require coursework [Studienleistungen], only the successful completion of examinations [Prüfungsleistungen].

§ 45 a

Multiple-Choice Test

The undertaking of multiple-choice tests is governed by § 12 a of the APSO.

§ 46

Master's Thesis

- (1) In accordance with § 18 APSO, students must complete a thesis as part of the Master's examination in the Master's Thesis module.
- (2) ¹As a rule, completion of the Master's Thesis module should be the final examination. ²Students may be admitted to the Master's Thesis module early on application if at least 48 credits, of which at least 18 credits in Digital Technology and 6 credits in Methods, (cf. Annex 1 (II)) have already been acquired and if the objective of the thesis can be achieved within the meaning of § 18 (2) APSO, taking into account the course of study to date.
- (3) ¹The period of time between topic assignment and submission of the completed Master's thesis must not exceed six months. ²The thesis is deemed to have been submitted and failed if it is not submitted on time without valid reasons recognized in accordance with §10 (7) APSO. ³30 credits are awarded for the Master's thesis module. ⁴The thesis should be written in English.
- (4) The completion of the Master's Thesis module consists of a scientific paper.
- (5) ¹If the Master's thesis was not graded with at least „sufficient“ (4.0), it may be repeated once with a new topic. ²Students must register the new topic within six weeks from receipt of the grade.

§ 47

Passing and Assessment of the Master's Examination

(1) The Master's Examination is deemed passed when all examinations required for the Master's examination pursuant to § 43 (1) have been passed and a plus credits account of at least 120 credits has been achieved.

(2) ¹The grade of a module will be calculated according to § 17 of the APSO. ²The overall grade for the Master's examination will be calculated as the weighted grade average of the modules according to § 43 (2) sentence 2 and the Master's thesis. ³The grade weights of the individual modules correspond to the credits assigned to each module. ⁴The overall assessment is expressed by the designation pursuant §17 of the APSO.

§ 48

Degree Certificate, Diploma, Diploma Supplement

¹If the Master's examination was passed, a degree certificate, a diploma, and a diploma supplement including a transcript of records are to be issued in compliance with § 25 (1) and § 26 of the APSO.

§ 49

Entry into Force

¹These regulations come into effect on October 1, 2023. ²It applies to all students who commence their studies at the Technische Universität München as of the summer semester 2024.

Appendix 1:

I. Scope of the Master's Examination

	Components	Credits	Semester
1.	Course-related examinations for the acquisition of credits in the elective modules of the Methods area	12	1./2. Semester
2.	Course-related examinations for the achievement of the required credits in basics in management	30	1./2./3./4. Semester
3	Course-related examinations for the acquisition of credits in the elective modules in the field of Digital Technology	30	1./2. Semester
4	Course-related examinations for the acquisition of credits in the management elective modules	18	1./2./3./4. Semester
5.	Master's Thesis pursuant to § 46	30	4. Semester

II. Exam modules

Methods

In the elective area Methods, students must successfully complete 12 credits of elective modules from the following exemplary catalog of elective modules. This exemplary list of electives is continuously updated; the current list of electives will be announced by the TUM School of Management in a suitable manner in time before the start of the lectures.

Module number	Module name	Module type	Type/weekly hours V U P S	Sem .	SW S	Credits	Type of Assessment	Duration of Exams	Language of instruction
Methods									
MGTHN0106	Generating and Processing Corporate Data	Elective	4 VI	1.-2.	4	6	Klausur	90 min	English
MGTHN0107	Applied Case Study Methodology	Elective	4 S	1.-2.	4	6	Scientific elaboration		English
MGTHN0105	Advanced Multivariate Analysis	Elective	4 V	1.-2.	4	6	Klausur	120 min	English
MGTHN0104	Empirical Research in Economics and Management	Elective	2Ü + 2V	1.-2.	4	6	Klausur	60 min	English

Management specialization

Students can choose one of the following two specializations in Management. If no specialization is chosen, 30 credits of elective modules must be taken from the following exemplary module catalogs of the management specializations. Of these, at least 6 credits must be earned through an advanced seminar.

Family Enterprise

In the specialization Family Enterprise 30 credits of elective modules have to be successfully completed. This exemplary list of elective modules is continuously updated; the current list of elective modules will be announced by the TUM School of Management in due time before the start of lectures.

Module number	Module name	Module type	Type/weekly hours V Ü P S	Sem .*	SWS	Credits	Type of Assessment	Duration of Exams	Language of instruction
Family Enterprise									
MGTHN0110	Advanced Seminar in Economics & Policy: Management practices in(family) enterprises	Elective	4 S	1.-4.	4	6	Scientific elaboration		English
WIHN0014	Corporate Campus Challenge	Elective	4 S	1.-4.	4	6	Project Work		English
MGTHN0075	Cross-Cultural Management	Elective	2V + 2Ü	1.-4.	4	6	Klausur	120 min	English
WIHN0028	Advanced Seminar in Innovation & Entrepreneurship: Topics in Corporate Entrepreneurship	Elective	4 S	1.-4.	4	6	Scientific elaboration		English
WIHN0037	Business-to-Business Contract Negotiations	Elective	4 S	1.-4.	4	6	Scientific elaboration		English
MGTHN0108	Law for Start-Ups	Elective	4 S	1.-4.	4	6	Report		English
MGTHN0077	Advanced International Study Trip: Family & non-family firms around the world	Elective	6 S	1.-4.	6	9	Scientific elaboration		English
MGTHN0096	Advanced Seminar Management & Marketing: Corporate Social Responsibility	Elective	4 S	1.-4.	4	6	Scientific elaboration		English
MGTHN0109	Taxation of Family Enterprises	Elective	4 S	1.-4.	4	6	Exercises		English
MGTHN0097	CEO Leadership Series	Elective	4 S	1.-4.	4	6	Scientific elaboration		English

Digital Enterprises

In the concentration "Digital Enterprises" students have to successfully complete a total of 30 credits of elective modules from an additional elective module catalog. This exemplary list of electives is constantly updated; the current list of electives will be announced by the TUM School of Management in due time before the start of lectures.

Module number	Module name	Module type	Type/ weekly hours V Ü P S	Sem .*	SWS	Cred its	Type of Assesse ment	Duratio n of Exams	Language of instructio n
Digital Enterprises									
WIHN0012	Digital Finance	Elective	4 VI	1.-4.	4	6	Klausur	90 min.	English
WIHN0013	Advanced Seminar Finance & Accounting: Current Research Topics in Digital Finance	Elective	4 S	1.-4.	4	6	Report		English
WIHN0017	Advanced Seminar in Innovation and Entrepreneurship: Digital Innovation	Elective	4 S	1.-4.	4	6	Scientific elaboration		English
MGTHN0074	Contemporary Strategies in the Automotive Industry	Elective	4 S	1.-4.	4	6	Presentatio n		English
MGTHN0112	Social Media Marketing	Elective	4 V	1.-4.	4	6	Scientific elaboration	90 min.	English
MGTHN0113	How to launch a platform start-up	Elective	2V + 2Ü	1.-4.	4	6	Klausur	60 min.	English
MGTHN0114	Supply Chain Tactics	Elective	4 S	1.-4.	4	6	Exercises		English
MGTHN0115	Advanced Seminar: Digital Technologies in Operations Management	Elective	4 S	1.-4.	4	6	Scientific elaboration		English
MGTHN0111	Cases in industry 4.0	Elective	4 S	1.-4.	4	6	Exercises		English
MGTHN0084	Advanced International Excursion: Global Strategy	Elective	6 S	1.-4.	6	9	Scientific elaboration		English

Digital Technology

In the field of Digital Technology, students must successfully complete a total of 30 credits of elective modules from an additional elective module catalog. This exemplary list of electives is constantly updated; the current list of electives will be announced by the TUM School of Management in a suitable manner in time before the start of the lectures.

Module number	Module name	Module type	Type/weekly hours V Ü P S	Sem. *	S W S	Credits	Type of Assessment	Duration of Exams	Language of instruction
Digital Technology									
INHNO017	Enterprise Architecture Management and Reference Models	Elective	2V+ 2Ü	1.-4.	4	6	Klausur	90 min.	English
INHNO012	Computer Networking and IT Security	Elective	3V+ 2Ü	1.-4.	5	6	Klausur	90 min.	English
WIHN0039	Business Analytics with Python and R	Elective	2V+ 2Ü	1.-4.	4	6	Report		English
MGTHN0117	Web Scraping with Python	Elective	4 V	1.-4.	4	6	Exercises		English
WIHN0034	Advanced Seminar Operations & Supply Chain Management: Business Analytics and its Application in Healthcare	Elective	4 S	1.-4.	4	6	Report		English
WIHN0033	Deep Reinforcement Learning	Elective	4 S	1.-4.	4	6	Report		English
WIHN0036	Introduction to Capital Market Databases and Statistical Analysis Software	Elective	4 S	1.-4.	4	6	Exercises		English
MGTHN0116	Eyetracking and Decision Making	Elective	4 S	1.-4.	4	6	Report		English
MGTHN0118	Ethical Management of Digital Business	Elective	4 S	1.-4.	4	6	Exercises		English
WIHN0018	Economics and Management of Platforms	Elective	4 S	1.-4.	4	6	Scientific elaboration		English

Elective modules in management

As part of the elective modules in management, students take exams in the field of management worth 18 credits. Of these, 12 credits can be completed in the form of advanced project studies according to § 37 a.

In the management elective modules, students have access to all management courses at Master's level at the TUM School of Management at the Heilbronn campus. Instead of examinations at TUM, students may take exams at a foreign university during their stay abroad. For this purpose, students work out an individual semester study plan with a mentor appointed by the TUM School of Management. The corresponding courses must be selected from the courses offered by the foreign university.

The catalog of electives will be published by the TUM School of Management in due time before the start of the semester.

Module number	Module name	Module type	Type / weekly hours V Ü P S	Sem.*	SWS	Credits	Type of assessment ²⁾	Duration of exams	Language of instruction
Project Studies									
MGTHN0119	Advanced Project Studies	Elective		2.-4. Sem	8	12 Credits	Project work		English

Master's Thesis

Module number	Module name	Module type	Type / weekly hours V Ü P S	Sem.	SWS	Credits	Type of assessment ²⁾	Duration of exams	Language of instruction
Master's Thesis									
MGTHN9277	Master's Thesis	Required		4. Sem.		30 Credits	Scientific elaboration		English

Explanations:

Sem. = semester; SWS = semester hours per week; V = lecture; VI = lecture with integrated exercises; Ü = exercise; P = practical course, S = seminar; FO = research practical course; Pr = project work.

In the examination duration column, the examination duration in minutes is listed for written and oral examinations.

Notes:

* Recommended semester depending on the chosen management focus.

Appendix 2: Aptitude Assessment

Aptitude Assessment for the Master's Program in Management and Digital Technology at the Technische Universität München

1. Purpose of the Assessment

¹Eligibility for the Master's program in Management and Digital Technology, in addition to the requirements pursuant to § 36 (1) no. 1 and 2, requires proof of aptitude pursuant to § 36 (1) no. 4 in accordance with the following provisions. ²The special qualifications and skills of the candidates should correspond to the professional knowledge in the area of management with some knowledge in engineering and/or natural sciences. ³Individual aptitude parameters are:

- 1.1 Subject knowledge (incl. success) from a first degree in the field of management with engineering or natural sciences, comparable to the Bachelor in Management and Technology of the Technische Universität München.
- 1.2 Knowledge of management and technical matters,
- 1.3 Ability to do research work and/or basic research and methodological work.
- 1.4 Technical language skills in engineering, natural sciences and management (in English).

2. Aptitude Assessment Process

2.1 ¹The aptitude assessment procedure takes place every six months. ²The Aptitude Assessment Procedure is governed by the Statutes of the Technical University of Munich on Enrollment, Re-registration and De-registration (ImmatS) of February 6, 2023, as amended, in particular § 6.

2.2 ¹Applications for the aptitude assessment procedure according to § 6 ImmatS must be submitted to the Technische Universität München together with the documents specified therein as well as the documents specified in No. 2.3 and § 36 (1) Nos. 2 and 3 for the winter semester using the online application procedure by May 31 and for the summer semester by November 30 (deadlines). ²The certificate and the transcript of records as proof of completion of the Bachelor's program must be submitted to the TUM Center for Study and Teaching - Application and Enrollment of the Technische Universität München no later than five weeks after the start of lectures. ³If this is not the case, admission to the Master's program is not possible according to § 36 of these Statutes.

2.3 The application must be accompanied by:

2.3.1 a transcript of records of modules of at least 140 credits; the transcript of records must be issued by the relevant examination board or examination office,

2.3.2 the curriculum of the first-degree program, from which the respective module contents and the imparted skills must be derived (e.g. module handbook, module descriptions) as well as the form issued by the TUM School of Management, in which the applicant lists the grades, credits and semester hours per week of the required examinations,

2.3.3 a curricular analysis derived from the transcript of records; this must be completed by the applicant as part of the online application procedure and uploaded in electronic form to TUMonline.

2.3.4 a curriculum vitae in resume form,

2.3.5 an essay written in English with a minimum of 1500 words and a maximum of 2000 words; the essay must be uploaded as a PDF document to TUMonline; the Chair of the Commission may choose one or more topics; applicants must be notified by April 1 or November 1 at the latest.

2.3.6 an assurance that the essay was written independently and without outside assistance and in compliance with the guidelines for safeguarding good scientific practice and for dealing with scientific misconduct at the Technical University of Munich and that the ideas taken from outside sources are marked as such,

2.3.7 optionally, for applicants who are not required to provide proof of a GMAT score in accordance with § 36 (1) No. 3, proof of a GMAT score.

3 Commission for the selection procedure, selection committees

3.1 ¹The aptitude assessment procedure is carried out by the aptitude assessment committee and the selection committees. ²The Commission for the Aptitude Assessment Procedure is responsible for preparing the procedure, organizing it and ensuring a structured and standardized procedure for determining aptitude within the framework of these statutes; it is responsible unless another responsibility is specified by these statutes or by delegation. ³The selection committees are responsible for carrying out the procedure in accordance with no. 5, subject to no. 3.2 sentence 11.

3.2 ¹The committee for the aptitude assessment procedure (committee) consists of five members. ²They are appointed by the Dean in consultation with the Vice Dean Academic and Student Affairs from among the members of the TUM School of Management who are eligible to take examinations for the degree program. ³At least three of the committee members must be university lecturers within the meaning of the BayHIG. ⁴The student council has the right to nominate a student representative to serve on the committee in an advisory capacity. ⁵A deputy shall be appointed for each member of the commission. ⁶The committee elects a chairperson and a deputy chairperson from among its members. ⁷The procedural provisions of the TUM Basic Regulations, as amended, shall apply to the course of business.⁸The term of office of the members is one year. ⁹Reappointment and extension of the term of office are permitted. ¹⁰The chairperson may make urgent decisions that cannot be postponed on behalf of the aptitude assessment committee; he or she must inform the committee immediately. ¹¹The Office of Student Affairs shall assist the Admissions Committee and the Selection Committees; the Admissions Committee may assign to the Office of Student Affairs the task of formal admissions evaluation in accordance with section 4, as well as the evaluation of points on the basis of previously defined criteria where there is no scope for evaluation, in particular the conversion of grades, the determination of the total number of points obtained, the composition of the Selection Committees from the members appointed by the Admissions Committee, and the allocation of points to the applicants.

3.3 ¹The selection committees each consist of two members from among the members of the TUM School of Management who are authorized examiners in the degree program in accordance with Art. 85 Para. 1 Sentence 1 BayHIG in conjunction with the University Examination Regulations. ²At least one member must be a university lecturer within the meaning of the BayHIG. ³The activity as a member of the Admissions committee can be carried out alongside the activity as a member of the selection committee. ⁴The members are appointed by the aptitude test committee for one year; no. 3.2 sentence 9 applies accordingly. ⁵Different selection committees may be appointed for each criterion and level.

4. Admission to the Aptitude Assessment Procedure

4.1 ¹The prerequisite for admission to the aptitude assessment procedure is the submission of the documents specified in point 2.2 in due form and time, in accordance with the rules of good scientific practice, and in their entirety. ²In order to determine whether the rules of good scientific practice have been complied with, the essay will be checked using special plagiarism checking software.

4.2 ¹Anyone who fulfills the necessary requirements according to No. 4.1 will be examined in the aptitude procedure according to No. 5. ²Otherwise, a rejection notice will be issued, stating the reasons for the rejection and informing the applicant of his or her rights of appeal. ³ If the selection committee comes to the conclusion that the rules of good scientific practice have been seriously violated, the applicant will be excluded from the current application procedure. ⁴Sentence 2 applies accordingly.

5 The Aptitude Assessment Process

5.1 First stage of the aptitude assessment process

5.1.1 ¹The committee will assess, on the basis of the written application documents required under no. 2.3, whether or not an applicant is suitable for a program pursuant to no. 1 (first stage of the aptitude assessment process). ²For this purpose, the committee evaluates and grades the candidate's documentation on a scale ranging from 0 to 69 points, 0 being the worst and 69 being the best possible result. ³Negative points will not be given.

⁴The following criteria will be applied to the evaluation:

a) Academic qualification

¹The curricular analysis of the existing specialized knowledge is not carried out by schematic comparison of the modules, but on the basis of competencies. ²It is based on the elementary core module groups of the Bachelor's degree program in Management and Technology at the Technische Universität München listed in the following table.

Core Module Group	Assessment (in points) Number of Points
Business administration modules amounting to at least 25 credits	20
Subject-specific fundamentals in the field of empirical methods amounting to at least 5 credits	10
Fundamentals in the field of quantitative decision support with operations research methods worth at least 5 credits	5
Economics modules worth at least 10 credits	10
Technical basics in the field of programming of at least 5 credits	5
Total	50

³If it is determined that there are no significant differences in the acquired competencies (learning outcomes), a maximum of 50 points will be awarded. ⁴If competencies are missing, 0 points will be awarded for that group type. ⁵If a GMAT score is to be submitted in accordance with section 36 (1) No. 3, it is assumed that there are no significant differences in the level of the competencies demonstrated in the first degree compared to the reference degree mentioned in section 5.1.1 a) sentence 2 and that the curricular analysis is carried out in accordance with the above criteria.

b) Grade

¹One point is awarded for each 2/10 grade that is better than 2.7 in the average calculated over 140 credits. ²The maximum number of points is 9. ³Negative points are not awarded. ⁴In case of foreign degrees or if the grading system does not correspond to that of TUM, the grade converted according to the Bavarian formula will be used. ⁵If a degree certificate with more than 140 credits is available at the time of application, the evaluation will be based on the best graded modules with 140 credits. ⁶It is the responsibility of the applicant to list these in the application and to confirm in writing that the information is correct. ⁷If this is done, the average will be calculated on the basis of the best-graded module examinations worth 140 credits. ⁸The overall grade point average is calculated as the weighted grade point average of the modules. ⁹The grade weight of each module corresponds to the number of credits assigned. ¹⁰If this information is missing, the overall average grade submitted by the applicant will be used.

Note	1	1,1/1,2	1,3/1,4	1,5/1,6	1,7/1,8	1,9/2,0	2,1/2,2	2,3/2,4	2,5/2,6	≥2,7
Points	9	8	7	6	5	4	3	2	1	0

c) GMAT score

¹Proof of a current GMAT score of at least 650 is valued at 1 point. ²All other scores are assessed as follows:

GMAT	≤640	650	660	670	680	690	700	≥710
Points	0	1	2	3	4	6	8	10

5.1.2 The score for the first stage is the sum of the individual scores; decimal places must be rounded up.

5.1.3 ¹A student who has achieved at least 51 points has passed the aptitude test. ²In cases where it has been determined that only individual subject requirements from the first-degree course have not been met, the selection committee may require students to take basic examinations from the Bachelor's degree course in Management and Technology with a focus on Digital Technologies amounting to a maximum of 30 credits. ³These basic examinations must be successfully completed in the first year of study. ⁴Failed basic examinations may only be repeated once within this period at the next examination date.

5.1.4 Anyone who has achieved fewer than 45 points has failed the aptitude test.

5.2 Second stage of the aptitude test

5.2.1 ¹The remaining applicants will be evaluated according to their essay. ²In the second stage of the aptitude assessment process the applicant's qualification at undergraduate level and the result of the essay will be evaluated, taking at least equal consideration of the qualification obtained at undergraduate level. ³The essay will be graded with points between 0 to 40 by two members of the committee. ⁴The content of the essay will be graded according to the following criteria:

The applicants should be able to:

1. present skills of scientific-logical argumentation with basic and method-oriented text structure, as well as to write the essay in a scientific manner and with correct citation of sources,
2. frame the question in the context of management and technology,
3. express themselves in English.

5.2.2 All three criteria will be graded individually by each member of the committee. The criteria will be weighted as follows:

1. Ability to present scientific logical argumentation with basic and methodological text structure as well as to write the essay in a scientific manner and with correct citation of sources: maximum 20 points,
2. Framing of the question in the context of economic-technical issues: maximum 10 points,
3. Expression in English: 10 points.

5.2.3 ¹The essay will be evaluated by the selection committee. ²The two members of the selection committee evaluate each of the three main criteria independently. ³The score for each member of the selection committee is the sum of the weighted scores for each criterion. ⁴The total score is the arithmetic means of the scores of the two selection committee members, rounded up to whole numbers of points. ⁵The maximum score is 40.

5.2.4 ¹The total number of points in the second stage is the sum of the points from 5.2.3 and the points from 5.1.1 a) (professional qualification) and 5.1.1 b) (grade). ²A candidate with 70 points or more has passed the aptitude test. ³Applicants with a total of less than 70 points have failed the aptitude test.

5.3 Determination and announcement of the result

¹The result of the aptitude test is determined on the basis of the number of points achieved and announced in a decision. ²Reasons must be given for any rejection and information on legal remedies must be provided.

5.4 The determined aptitude applies to all subsequent applications for this degree program.

6. Documentation

The aptitude assessment procedure must be documented; in particular, the documentation must include the names of the persons involved in the decision, the names of the applicants, the assessment of the first and second stages, the overall result and the main reasons for the assessment of the essay; the main reasons may be listed in keywords.

7. Repetition

Applicants who have failed the aptitude test for the Master's program in Management and Digital Technology may register for one repetition of the Aptitude Assessment Test.