

# **Examination and Academic Regulations for the Master's Program in Management at the Technical University of Munich**

**dated July 7, 2016**

**Clean version  
as amended by the amending statutes of 25 April 2018**

In accordance with Art. 13 (1) sentence 2 in conjunction with Art. 58 (1) sentence 1 and Art. 61 (2) sentence 1 of the Bayerisches Hochschulgesetz (BayHSchG) [Bavarian Higher Education Act] the Technical University of Munich (TUM) issues the following Examination and Academic Regulations (Fachprüfungs- und Studienordnung, FPSO):

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### **§ 34** **Applicability, Academic Title**

- (1) <sup>1</sup>These Examination and Academic Regulations (FPSO) for the Master's program in Management complement the General Academic and Examination Regulations for Bachelor's and Master's programs at the Technical University of Munich (APSO) of March 18, 2011 as amended. <sup>2</sup>The APSO shall have precedence.
- (2) <sup>1</sup>Upon successful completion of the Master's examination the degree "Master of Science" ("M.Sc.") is awarded. <sup>2</sup>The academic title may be used with the name of the university "(TUM)".

### **§ 35** **Commencement of Studies, Standard Duration of Study, ECTS**

- (1) Commencement of the Master's program in Management is possible in the winter semester only.
- (2) <sup>1</sup>The number of credits in required and elective subjects needed to complete the Master's degree is 90 (60 weekly hours per semester), spread over three semesters. <sup>2</sup>In addition, 30 credits (maximum six months) are required for the completion of the Master's thesis pursuant to § 46. <sup>3</sup>The number of examinations in required and elective subjects to be completed in the Master's program in Management according to Appendix 1 II is thus a minimum of 120 credits. <sup>4</sup>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 is demonstrated by
  1. a qualifying Bachelor of Science (B.Sc.) of at least six semesters obtained from a German or foreign university, or a degree that is at least the equivalent of this in engineering or natural sciences, or a Bachelor's in architecture or comparable study programs,
  2. an adequate knowledge of the English language; students whose native language or language of education is not English must submit proof of having passed a recognized language test such as the Test of English as a Foreign Language (TOEFL, scoring at least 88 points), the International English Language Testing System (IELTS, at least 6.5 points) or the Cambridge Main Suite of English Examinations; if the student has successfully passed examination modules in English worth 12 credits as part of an undergraduate degree or conducted a final thesis worth 12 ECTS in English or has a GMAT score of at least 600 points, adequate knowledge of English is similarly deemed to be proven,
  3. passing the aptitude assessment pursuant to Appendix 2.
- (2) A degree is considered "qualifying" within the meaning of subsection 1 if there are no significant differences with regard to the competences (learning results) acquired in the scientifically oriented relevant Bachelor's degrees named in subsection 1 (1) at

TUM or a comparable university, and these competences correspond to the subject-specific requirements of the Master's program in Management.

- (3) To decide with regard to subsection 2, the catalog of modules from the relevant Bachelor's degree will be examined in the first stage of the aptitude assessment.
- (4) The comparability of programs, the specific aptitudes and the recognition of skills from degrees acquired at foreign universities will be decided upon by the Examination Committee in compliance with Art. 63 of the Bayerisches Hochschulgesetz [Bavarian Higher Education Act].
- (5) The IMIM Admission Requirements in Appendix 3, which are also an Appendix to the Consortium Agreement on the Erasmus Mundus Master's program "International Master in Industrial Management (IMIM)" dated February 10, 2015, are considered equivalent proof of qualification for participants in this program.

### **§ 37**

#### **Modular Structure, Module Examination, Courses, Course Specialization, Language of Instruction**

- (1) <sup>1</sup>General provisions on modules and courses are set out in §§ 6 and 8 of the APSO. <sup>2</sup>For any changes to the stipulated module provisions, § 12 (8) of the APSO shall apply.
- (2) The curriculum listing the required and elective modules to be attended is given in Appendix 1 (III). <sup>2</sup>If students do not demonstrate a knowledge of German during application, admission will be subject to the additional requirement that at least one module is taken until the end of the second semester in which the student is registered for courses awarding credits toward the degree in which knowledge of German is acquired. <sup>3</sup>Relevant courses will be announced by Examination Committee in the usual manner. <sup>4</sup>Voluntary extracurricular activities such as German courses taken at the Language Center will also be recognized.
- (3) <sup>1</sup>The language of instruction in the Master's program in Management is English. <sup>2</sup>In addition to English-language modules, some modules will be offered in German. <sup>3</sup>Any individual elective modules taught entirely or partially in German are identified in Appendix 1 II. <sup>4</sup>If a module description indicated that it is taught in either English or in German, the examiner shall make a binding indication of the specific language of instruction in a suitable way no later than before the commencement of the course.

### **§ 37a**

#### **Project Studies**

- (1) <sup>1</sup>The Project Studies module consists of active involvement in a research or practical project connected to the contents of the degree program. <sup>2</sup>It comprises 12 Credits and 360 working hours. <sup>3</sup>The Project Studies module is completed by a written paper as well as an oral presentation. <sup>4</sup>It is carried out by a group of at least two students or abroad. <sup>5</sup>It shall be completed by the end of the third semester in which the student is registered for courses awarding credits toward the degree. <sup>6</sup>Here, it should be demonstrated that the tasks can be completed in a team environment. <sup>7</sup>If the student's contribution to group work is to be assessed as a component of an

examination, that contribution must be clearly identifiable and gradable. <sup>8</sup>This also applies to each individual's contribution to the group result.

- (2) <sup>9</sup>Evaluation of the Project Studies module is governed by § 17 of the APSO.
- (3) <sup>1</sup>The Project Studies module is supervised by a lecturer from TUM School of Management. <sup>2</sup>Furthermore, research associates may also be appointed as examiners as long as the relevant conditions of the applicable version of the regulation on university examiners 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 of the APSO.
- (2) <sup>1</sup>At least one of the module examinations from the core modules listed in Appendix 1 II must be successfully completed by the end of the second semester. <sup>2</sup>In the event of failure to meet deadlines, § 10 (5) of the APSO shall apply.

### § 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 TUM School of Management.

### § 40

#### Recognition of Periods of Study, Coursework and Examination Results

Recognition of periods of study, coursework and examination results is governed by the provisions of § 16 of the APSO. <sup>2</sup>Coursework and examinations carried out as part of the IMIM program at the partner universities Universidad Politécnica de Madrid (UPM) and Politecnico di Milano (POLIMI) shall be recognized without assessment of their equivalence.

### § 41

#### Continuous Assessment Procedure, Types of Assessment

- (1) In addition to written examinations (*Klausuren*) and oral examinations, types of assessment pursuant to § 12 and § 13 of the APSO may include (but are not limited to) Laboratory activities, exercises (tests, where applicable), reports, project work, presentations, learning portfolios and/or research papers.
  - a) <sup>1</sup>A **Klausur** (written exam) is a supervised written examination in which the objective is, within a limited amount of time and using predefined methods and resources, to identify problems, find solution strategies and, if required, implement them. <sup>2</sup>The duration of Klausuren is provided for in § 12 (7) of the APSO.

- b) **<sup>1</sup>Laboratory activities** include, depending on the subject discipline, tests, measurements, fieldwork, field exercises and other activities with the aim of carrying out, evaluating and gaining knowledge. <sup>2</sup>Examples include the following: practical experiments, the description of procedures and the theoretical foundations thereof, including the literature, the preparation (if necessary also in the form of exercises) and practical implementation, necessary calculations, documentation and evaluation, as well as the interpretation of the results with regard to the findings to be elaborated <sup>3</sup>The laboratory activity may be complemented by a presentation for the purpose of assessing the student's communication competency in presenting scholarly work to an audience. <sup>4</sup>The specific components of each laboratory activity and the related competencies to be assessed are set out in the module description.
- c) **<sup>1</sup>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. <sup>2</sup>Exercises are designed to assess the student's factual and detailed knowledge and its application. <sup>3</sup>Practical exercises may be administered in writing, orally or electronically. <sup>4</sup>They may take the form of homework assignments, practice sheets, programming exercises, (e-)tests, tasks assigned within a university internship program, etc. <sup>5</sup>Details of each practical exercise and the related competencies to be examined are set out in the module descriptions.
- d) **<sup>1</sup>A 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. <sup>2</sup>The objective is to demonstrate in the report that all the essential aspects have been understood and can be presented in writing. <sup>3</sup>Reports may include excursion reports, internship reports, work reports, etc. <sup>4</sup>The 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) **<sup>1</sup>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. <sup>2</sup>In addition, project work may include a presentation in order to assess a student's communication competency in presenting scholarly work to an audience. <sup>3</sup>The specific components of each project work assignment and the related competencies to be assessed are delineated in the module description. <sup>4</sup>Project work may include group work. <sup>5</sup>Here, it should be demonstrated that the tasks can be completed in a team environment. <sup>6</sup>If the student's contribution to group work is to be assessed as a component of an examination, that contribution must be clearly identifiable and gradable. <sup>7</sup>This also applies to each individual's contribution to the group result.
- f) **<sup>1</sup>A 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. <sup>2</sup>The objective is to demonstrate the ability to solve problems corresponding to the learning results of the module in question in compliance with the guidelines for scholarly work – from analysis and conception to implementation. <sup>3</sup>Research papers, differing in their requirement standards, may take the form of a conceptual framework/theory

paper [*Thesepapier*], abstract, essay, research paper, seminar paper, etc. <sup>4</sup>The 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. <sup>5</sup>Specific details of each research paper and the related competencies to be assessed are set out in the module description.

- g) <sup>1</sup>A **presentation** is a systematic and structured oral performance supported by suitable audio-visual equipment (such as a projector, slides, posters, videos) for the purpose of demonstrating and summarizing specific issues or results and paring complex problems down to their essential core. <sup>2</sup>The objective of the presentation is to demonstrate the ability to prepare a certain topic within a given timeframe in such a way as to present or report on it in a clear and comprehensible manner to an audience. <sup>3</sup>In addition, the ability to respond competently to any questions, suggestions or discussions brought by the audience and relating to the subject area should be demonstrated. <sup>4</sup>The presentation may be complemented by a brief written précis. <sup>5</sup>The presentation may be prepared either individually or in groups. <sup>6</sup>If the student's contribution to group work is to be assessed as a component of an examination, that contribution must be clearly identifiable and gradable. <sup>7</sup>This also applies to each individual's contribution to the group result.
- h) <sup>1</sup>An **oral examination** is a timed, graded discussion of relevant topics and specific questions to be answered. <sup>2</sup>The objective of oral examinations is to demonstrate that the qualification objectives laid out in the module descriptions have been reached, the central concepts of the subject matter covered by the exam have been understood, and they can be applied to specific problems. <sup>3</sup>The oral examination may be held either as an individual or group examination. <sup>4</sup>The duration of the examination is provided for in § 13 (2) of the APSO.
- i) <sup>1</sup>A **learning portfolio** is a collection of written materials compiled according to predefined criteria, demonstrating progress and achievements in defined content areas at a given time. <sup>2</sup>The criteria according to which the materials have been chosen and their relevance for their learning progress and the achievement of the qualification objectives must be explained. <sup>3</sup>The learning portfolio should demonstrate that active responsibility for the learning process has been taken and the qualification objectives set out in the module description have been reached. <sup>4</sup>Depending on the module description, types of independent study assessment in a learning portfolio may include, in particular, application-oriented assignments, websites, weblogs, bibliographies, analyses, conceptual framework/theory papers, as well as the graphic representation of facts or problems. <sup>5</sup>The specific components of each learning portfolio and the related competencies to be assessed are set out in the module description.
- (2) <sup>1</sup>The module examinations are, as a rule, taken concurrently with the program. <sup>2</sup>The type and duration of module examinations are provided for in Appendix 1 (II). <sup>3</sup>In the event of divergence from those provisions, § 12 (8) of the APSO must be complied with. <sup>4</sup>The assessment of module examinations is governed by § 17 of the APSO. <sup>5</sup>Grades from partial module examinations are weighted using the weighting factors given in Appendix 1 II.
- (3) Where Appendix 1 II provides that a module examination is either in written or oral form, the examiner must inform the students in appropriate form, no later than the first day of classes, of the type of examination to be held.

## **§ 42**

### **Registration for and Admission to the Master's Examination**

- (1) <sup>1</sup>Students who are enrolled in the Master's program in Management are deemed admitted to the module examinations of the Master's examination.
- (2) <sup>1</sup>The registration requirements for required and elective module examinations are set out in § 15 (1) of the APSO. <sup>2</sup>The registration requirements for repeat examinations for failed required modules are set out in § 15 (2) of the APSO.
- (3) <sup>1</sup>As a rule, the admission requirement for the module Advanced International Experience is the completion of a professionally relevant stay abroad. <sup>2</sup>Further details can be found in Appendix 1.

## **§ 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 Master's thesis pursuant to § 46 and
  3. coursework indicated in § 45.
- (2) <sup>1</sup>The module examinations are listed in Appendix 1 II. <sup>2</sup>60 credits in required modules and a minimum of 30 credits in elective modules must be earned. <sup>3</sup>When choosing modules, § 8 (2) of the APSO must be considered.

## **§ 44**

### **Repeat Examinations, Failed Examinations**

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

## **§ 45**

### **Coursework**

In addition to the examinations indicated in § 43 (1), it is also necessary to successfully complete coursework in the elective module Advanced International Experience worth 6 ECTS.

## **§ 45a**

### **Multiple Choice Test**

The procedure for multiple choice tests is provided for in § 12 of the APSO.

## **§ 46 Master's Thesis**

- (1) <sup>1</sup>As provided for in § 18 of the APSO, students must complete a Master's thesis as part of their Master's examination. <sup>2</sup>The Master's thesis topic may be determined and the thesis supervised by qualified examiners from the School of Management of the Technical University of Munich. <sup>3</sup>The supervisors are appointed by the Examination Board pursuant to sentence 2.
- (2) <sup>1</sup>In order to be admitted to commence work on their Master's thesis, students must have earned a minimum of 45 of the 60 credits in the required modules and a minimum of 6 credits in the elective modules. <sup>2</sup>Work on the Master's thesis **should** commence at the latest when all module examinations have been successfully completed.
- (3) <sup>1</sup>The period of time between topic determination and submission of the completed Master's thesis must not exceed six months. <sup>2</sup>The Master's thesis is considered presented and not passed if it is not submitted on time without valid reasons pursuant to § 10 (7) of the APSO. <sup>3</sup>The Master's thesis should be written in English.
- (4) <sup>1</sup>If the Master's thesis is not graded with at least "sufficient" (4.0), it may be repeated once with a new topic. <sup>2</sup>Students must renew their application for admission within six weeks of receiving the grade for their thesis.

## **§ 47 Passing and Assessment of the Master's Examination**

- (1) The Master's examination is deemed passed when the student has successfully completed all examinations required pursuant to § 43 (1) and has earned a total of at least 120 credits.
- (2) <sup>1</sup>The module grade is calculated according to § 17 of the APSO. <sup>2</sup>The 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. <sup>3</sup>The weighting of the grades for individual modules corresponds to the credits assigned to each module. <sup>4</sup>The overall grade is expressed by the designation pursuant to § 17 of the APSO.

## **§ 48 Degree Certificate, Diploma, Diploma Supplement**

<sup>1</sup>If the Master's examination is passed, a degree certificate, diploma and a diploma supplement including a transcript of records are to be issued in compliance with § 25 (1) and § 26 of the APSO. <sup>2</sup>The date to be entered on the degree certificate is the day when all examination and coursework requirements have been fulfilled.

## **§ 49 Double Degree**

- (1) <sup>1</sup>The Technical University of Munich (TUM), UPM, POLIMI, Heriot-Watt University (HWU) and Beijing Jiaotong University (BJTU) have signed a cooperation agreement for a joint "International Master in Industrial Management" (IMIM) program. <sup>2</sup>The following special regulations apply for students on the Master's program in Management at the Technical University of Munich who are participating in the IMIM:
1. <sup>1</sup>Participants are selected jointly by the Executive Committee appointed by the participating partner universities, on the basis of the documents submitted pursuant to Appendix 3; this Executive Committee comprises one representative of each of the partner institutions involved in the joint program; all members must be professors.
  2. Students on the IMIM program spend the first semester (in which they are registered for courses awarding credits toward the degree) at UPM and their second semester at POLIMI; they must earn 30 credits in each of these semesters.
  3. <sup>1</sup>Students spend their third and fourth semesters at TUM; students on the program must file their application to be admitted to the Master's program in Management at the Technical University of Munich together with the documents specified in Appendix 3, via the online application process, with the Technical University of Munich by May 31 for the winter semester (absolute deadline); in their third semester, students must earn 30 credits from a catalog of elective modules; this catalog will be published by the School of Management in appropriate form in good time before the first day of classes; in their fourth semester students write their Master's thesis, worth 30 credits.
  4. When they have earned 30 credits at UPM, 30 credits at POLIMI, and 60 credits at TUM, students on the IMIM program receive, in addition to the degree of "Master of Science in International Master in Industrial Management" from UPM and "Master di primo livello: International Master in Industrial Management" from POLIMI, the degree of "Master of Science (M. Sc.)" from TUM and a certificate issued jointly by UPM, POLIMI and TUM confirming that they have successfully completed the IMIM program.

## **§ 50 Entry into Force<sup>1</sup>**

- (1) <sup>1</sup>These Examination and Academic Regulations will enter into force on April 1, 2016. <sup>2</sup>They shall apply to all students who commence their studies on the degree program at the Technical University of Munich as of the winter semester 2018/2018.

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<sup>1</sup> This provision concerns the entry into force of the Articles of Incorporation in the original version of 7 July 2016. The date of entry into force of the amendments results from the Amending Articles of Incorporation.

**APPENDIX 1:**

**I. Scope of the Master's Examination**

	<b>Components</b>	<b>Credits</b>	<b>Semester</b>
1.	Examinations during the course of the program earning credits in the required modules of the <b>fundamentals in Management</b>	42	Semester 1/2
2.	Examinations during the course of the program earning credits in the required modules of the <b>fundamentals in Economics</b>	6	Semester 1
3.	Examinations during the course of the program earning credits in the required modules of the <b>fundamentals in Law</b>	6	Semester 2
4.	Examinations during the course of the program earning credits in the required modules of Entrepreneurial, Strategic, and International Management	6	Semester 1
5.	Examinations during the course of the program earning credits in the elective modules from the <b>elective in Management</b>	30	Semester 3
6.	<b>Master's thesis</b> pursuant to § 46	30	Semester 4
		120	

## II. Examination Modules

### Master's program in Management (Required modules)

Students must successfully complete the following required basic modules:

N o.	Module no.	Module name	Module type	Type of instruction SWS/V Ü P	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
<b>Fundamentals of Management</b>										
1	WI001139	Financial Accounting (MiM)	Required	2 V + 2 Ü	1	4	6	Klausur (written exam)	60 min	English
2	WI001137	Management Science (MiM)	Required	2 V + 2 Ü	1	4	6	Klausur	60 min	English
3	WI000258	Empirical Research in Economics and Management	Required	2 V + 2 Ü	1	4	6	Klausur	120 min	English
4	WI001138	Investment and Financial Management (MiM)	Required	2 V + 2 Ü	2	4	6	Klausur	120 min	English
5	WI000820	Marketing & Innovation Management (MiM)	Required	4 V	2	4	6	Klausur	120 min	English
6	WI001060	Production and Logistics (MiM)	Required	4 V	2	4	6	Klausur	120 min	English
7	WI001130	Cost Accounting (MiM)	Required	2 V + 2 Ü	2	4	6	Klausur	60 min	English

<b>Fundamentals of Economics</b>										
8	WI001056_1	Principles of Economics	Required	2 V + 2 Ü	1	4	6	Klausur	120 min	English

<b>Fundamentals of Law</b>										
9	WI001122	Introduction to Business Law (MiM)	Required	2 V + 2 Ü	2	4	6	Klausur	120 min	English

<b>Entrepreneurial, Strategic and, International Management</b>										
10	WI90006	Entrepreneurial, Strategic and, International Management	Required	4 V	1	5	6	Klausur	120 min	English

### Elective modules for the elective in Management

Within the framework of the elective subject in management, students will perform examinations in the field of management from a supplementary elective catalogue amounting to at least 30 credits.

Instead of examination work at the TUM, subject-related examination work amounting to 30 credits can be carried out at a foreign university during a stay abroad. For this purpose, students compile an individual semester study plan together with a mentor appointed by the faculty. The corresponding courses are to be selected from the selection offered by the foreign university.

The supplementary catalog of elective modules will be published by TUM School of Management in appropriate form in good time before the first day of classes; the following is **an example of such a catalog**.

No.	Module no.	Module name	Module type	Type of instruction SWS/V Ü P	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
11	WI900684	Project studies (Master in Management) <sup>1)</sup>	Elective		3/4	4	12	Project work	n/a	German/English
12	WIB18812_1	Advanced Seminar in Innovation and Entrepreneurship	Elective	4 Se	3/4	4	6	Research paper	n/a	German/English
13	WI000116	Lead-User-Project	Elective	4 Se	3/4	4	6	Project work	n/a	German/English
14	WI001166	Advanced Topics in Innovation & Entrepreneurship	Elective	4 Se	3/4	4	6	Research Paper	n/a	German/English
15	WIB17003	Advanced Seminar in Marketing, Strategy & Leadership – Strategy and Organization	Elective	4 Se	3/4	4	6	Research paper	n/a	German/English
16	WIB05004	Advanced Seminar in Marketing, Strategy & Leadership (Marketing)	Elective	4 Se	3/4	4	6	Laboratory activities	n/a	English
17	WI000817	Marketing Compliance	Elective	4 V	3/4	4	6	Klausur	120 min	German
18	WI000994	Negotiation Strategies	Elective	4 Se	3/4	4	6	Research paper	n/a	German/English
19	WIB19823	Advanced Topics in Operations & Supply Chain Management I	Elective	4 Se	3/4	4	6	Klausur	120 min	German/English
20	WIB23005	Advanced Seminar in Finance & Accounting	Elective	4 Se	3/4	4	6	Research paper	n/a	German/English
21	WI001181	Advanced International Experience <sup>3)</sup>	Elective	4 V	3/4	4	6	Klausur	120 min	English

**Notes:**

- 1) This module and the relevant partial module examinations can be stretched over two semesters or more.
- 2) All the types of examination indicated are possible. Students will be given binding details, in particular the number, type, scope and method of grading these examinations, at the latest two weeks before the first day of classes in appropriate form.
- 3) Completion of the module Advanced International Experience requires the completion of a professionally relevant stay abroad of 60 days as a rule. Suitable forms of a stay abroad are: Study abroad, internship abroad. Further relevant stays can be submitted to the examination board for a decision.

**Master's Thesis**

No.	Module no.	Module name	Module type	Type of instruction SWS/V Ü P	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
22	WI900261	Master's Thesis (Master in Management)	Required				30 credits			English

Key to abbreviations:

Sem. = Semester; SWS = *Semesterwochenstunden* (weekly hours per semester); V = *Vorlesung* (lecture); Ü = *Übung* (exercise); Se = Seminar.

The column for exam duration indicates the number of minutes required for a written exam.

### **III. Curriculum**

#### **1. Curriculum**

<b>Semester</b>	<b>Course</b>	<b>Type of module</b>	<b>Credits</b>
Semester 1			
	Financial Accounting (MiM)	Required module	6
	Management Science (MiM)	Required module	6
	Empirical Research in Economics and Management	Required module	6
	Principles of Economics	Required module	6
	Entrepreneurial, Strategic, and International Management	Required module	6
<b>Total credits in Semester 1:</b>			<b>30</b>
Semester 2			
	Investment and Financial Management (MiM)	Required module	6
	Introduction to Business Law (MiM)	Required module	6
	Marketing & Innovation Management (MiM)	Required module	6
	Production and Logistics (MiM)	Required module	6
	Cost Accounting	Required module	6
<b>Total credits in Semester 2:</b>			<b>30</b>
Semester 3			
	Elective modules from the elective in Management	Elective modules	30
<b>Total credits in Semester 3:</b>			<b>30</b>
Semester 4			
	Master's Thesis (Master in Management)	Required module	30
<b>Total credits in Semester 4:</b>			<b>30</b>
<b>Total credits for Master's program in Management</b>			<b>120</b>

## **APPENDIX 2: Aptitude Assessment**

### **Aptitude Assessment for the Master's program in Management at the Technical University of Munich**

#### **1. Purpose of the Assessment**

<sup>1</sup>Eligibility for the Master's program in Management, in addition to the requirements pursuant to § 36 (1) numbers 1 and 2, requires proof of aptitude pursuant to § 36 (1) no. 3 in accordance with the following provisions. <sup>2</sup>The special qualifications and skills of the candidates should correspond to the profession of an engineer or natural scientist. <sup>3</sup>Individual aptitude parameters are

- 1.1 specialized knowledge from (and success in) undergraduate studies in engineering or natural sciences in line with the engineering and natural science Bachelor programs at the Technical University of Munich,
- 1.2 knowledge of technical and management matters,
- 1.3 the ability to carry out research work and/or basic research and methodological work,
- 1.4 competence in the technical language in English.

#### **2. Aptitude Assessment Process**

2.1 The aptitude test will be held once a year by the School of Management.

2.2 <sup>1</sup>Applications for admission to the aptitude test, including the documents set out in 2.3.1 through 2.3.5 and § 36 (1) no. 2 must be filed with the Technical University of Munich via the online application process by May 31 for the winter semester (absolute deadline). <sup>2</sup>The degree certificate and diploma showing that the applicant has successfully completed the Bachelor's degree must be filed with the Registrar's Office of the Technical University of Munich no later than five weeks after the beginning of lectures. <sup>3</sup>If this is not done, the applicant will not be permitted to start the Master's degree pursuant to § 36 of these regulations.

2.3 The application must include

2.3.1 a transcript of records including a list of modules worth at least 140 credits; the transcript of records must be an officially certified copy; official certification is not required if the examinations were taken at the Technical University of Munich,

2.3.2 a curricular analysis derived from the transcript of records; it must be completed in the online application procedure and a printout must be included with the application materials,

2.3.3 a curriculum vitae in table form,

2.3.4 an essay written in English with a maximum of 2000 words. The essay must be uploaded to TUMonline as well as attached as a hard copy. The chairman of the commission may propose one or more topics. Applicants must be notified of this by 1<sup>st</sup> of April at the latest.

- 2.3.5 an assurance that the essay was written independently and without outside help and that the thoughts acquired from foreign sources are identified as such.
- 2.3.6 if applicable, evidence of the ranking in percentage terms of the degree gained or the candidate's ranking in percentage terms in their final semester in which they were registered for courses awarding credits toward the degree; this must be an officially certified copy; official certification is not required if the examinations were taken at the Technical University of Munich,
- 2.3.7 if applicable, proof of a GMAT score of a minimum of 600 points.

### **3. Aptitude Assessment Committee**

- 3.1 <sup>1</sup>The aptitude test is administered by a committee that, as a rule, consists of the dean for academic affairs in charge of the Master's program in Management, at least two members of the professorial faculty and at least one research associate. <sup>2</sup>At least half of the committee members must be members of the professorial faculty. <sup>3</sup>A representative of the student body shall also participate in the committee in an advisory capacity.
- 3.2 <sup>1</sup>The members of the committee are appointed by the faculty council in consultation with the dean for academic affairs. <sup>2</sup>At least one member of the professorial faculty is appointed as deputy member of the committee. <sup>3</sup>As a rule, the committee is chaired by the dean for academic affairs. <sup>4</sup>Procedural regulations will be in accordance with Art. 41 of the BayHSchG as last amended.
- 3.3 <sup>1</sup>If the Commission acts in accordance with these Statutes, the revocable delegation of certain tasks to individual members of the Commission shall be permissible. <sup>2</sup>If, pursuant to clause 1, only one member of the Commission is active in the performance of certain tasks, he or she must be a lecturer from TUM School of Management. <sup>3</sup>If, pursuant to clause 1, two or more members of the Commission are active in the performance of certain tasks, at least half of them must be lecturers from TUM School of Management. <sup>4</sup>The Commission shall ensure the appropriate allocation of responsibilities. <sup>5</sup>If there is room for maneuver in an evaluation criterion of the selection procedure and if at least two members of the Commission are involved in the evaluation of this criterion, the members of the Commission shall evaluate independently according to the indicated weighting, unless otherwise specified; the number of points shall be determined by the arithmetic mean of the individual evaluations, rounded up to the nearest whole number of points.

### **4. Admission to the Aptitude Assessment Process**

- 4.1 Admission to the aptitude assessment process requires that all the documentation specified in no. 2.3 has been submitted in a timely and complete fashion.
- 4.2 Applicants meeting the requirements will be tested according to no. 5.
- 4.3 Applicants who are not admitted receive a rejection notice specifying the reasons and providing information on legal remedies.

## 5. The Aptitude Assessment Process

### 5.1 First stage of the aptitude assessment process

- 5.1.1 <sup>1</sup>The 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). <sup>2</sup>For this purpose, the committee evaluates and grades the candidate's documentation on a scale ranging from 0 to 75 points, 0 being the worst and 75 the best possible result. <sup>3</sup>There will be no negative points.

The following criteria will be applied to the evaluation:

#### a) **Academic qualification**

<sup>1</sup>The curricular analysis of existing skills and knowledge is not conducted in the form of a schematic comparison of the modules, but rather on the basis of competencies. <sup>2</sup>It is oriented toward the subject groups listed below, which are considered for a Bachelor's degree in either engineering or natural sciences.

#### Engineering subject groups

##### a) Subject groups from the Bachelor's in Mechanical Engineering:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge/maschinenwesen\\_bachelor/index.html?](http://portal.mytum.de/studium/studiengaenge/maschinenwesen_bachelor/index.html?)

##### b) Subject groups from the Bachelor's in Electrical Engineering and Information Technology:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/elektrotechnik\\_und\\_informatik\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/elektrotechnik_und_informatik_bachelor)

##### c) Subject groups from the Bachelor's in Civil Engineering:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge/bauingenieurwesen\\_bachelor/index.html?](http://portal.mytum.de/studium/studiengaenge/bauingenieurwesen_bachelor/index.html?)

##### d) Subject groups from the Bachelor's in Architecture:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/architektur\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/architektur_bachelor)

##### e) Other engineering subject groups:

For all other engineering degrees not mentioned in a) - d) a comparable study program at Technical University of Munich will be considered.

#### Natural science subject groups

##### a) Subject groups from the Bachelor's in Informatics:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/informatik\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/informatik_bachelor)

##### b) Subject groups from the Bachelor's in Mathematics:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/mathematik\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/mathematik_bachelor)

c) Subject groups from the Bachelor's in Games Engineering:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/informatik\\_games\\_engineering](http://portal.mytum.de/studium/studiengaenge_en/informatik_games_engineering)

d) Subject groups from the Bachelor's in Bioinformatics:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/bioinformatik\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/bioinformatik_bachelor)

e) Subject groups from the Bachelor's in Biology:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/biologie\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/biologie_bachelor)

f) Subject groups from the Bachelor's in Physics:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/physik\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/physik_bachelor)

g) Subject groups from the Bachelor's in Chemistry:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/chemie\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/chemie_bachelor)

h) Subject groups from the Bachelor's in Nutritional Science:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge/ernaehrungswissenschaft\\_bachelor/index.html?](http://portal.mytum.de/studium/studiengaenge/ernaehrungswissenschaft_bachelor/index.html?)

i) Subject groups from the Bachelor's in Geosciences:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/geowissenschaften\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/geowissenschaften_bachelor)

j) Subject groups from the Bachelor's in Biotechnology:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/molekulare\\_biotechnologie\\_bachelor](http://portal.mytum.de/studium/studiengaenge_en/molekulare_biotechnologie_bachelor)

k) Subject groups from the Bachelor's in Sport Science:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/sportwissenschaft\\_en](http://portal.mytum.de/studium/studiengaenge_en/sportwissenschaft_en)

l) Subject groups from the Bachelor's in Medicine:

Exemplary Curriculum is available here:

[http://portal.mytum.de/studium/studiengaenge\\_en/medizin\\_staatsexamen](http://portal.mytum.de/studium/studiengaenge_en/medizin_staatsexamen)

<sup>3</sup>Where it is determined that there are no significant differences with regard to the competencies (learning results) acquired, a maximum of 50 points will be awarded. <sup>4</sup>If this value is a decimal, it will be rounded up to the next whole number. <sup>5</sup>Missing competencies will be deducted in accordance with the credits of the corresponding modules of the equivalent Bachelor's program at the Technical University of Munich.

## **b) Grading table/ranking of final grade**

<sup>1</sup>A total of 15 points will be awarded for the examination results from the candidate's undergraduate degree. <sup>2</sup>Points will be awarded on the basis of the ranking in

percentage terms of the candidate's degree or, if this is not available at the time of application, on the candidate's ranking in percentage terms in the final semester in which they were registered for courses awarding credits toward the degree. <sup>3</sup>If it is not possible for the candidate to submit a ranking position, an overall grade average will be calculated on the basis of the modules in which the candidate received their best grades, up to a total of 140 credits. <sup>4</sup>The evaluation process by ranking or overall grade average will be conducted in favor of the candidate.

<sup>5</sup>15 points will be awarded for the ranking in percentage terms of the candidate's degree. <sup>6</sup>If the degree ranks among the best 1-20%, 15 points will be awarded; if it ranks among the best 21-30%, 10 points will be awarded; if it ranks among the best 31-50%, 6 points will be awarded; and if it ranks among the best 51% or more, 0 points will be awarded.

<sup>7</sup>Up to 15 points will be awarded for the overall grade average. <sup>8</sup>For each one-tenth of a grade that the overall grade average is better than 2.5, the applicant will be awarded one point. <sup>9</sup>The maximum number of points is 15. <sup>10</sup>There will be no negative points. <sup>11</sup>Where a degree was obtained outside of Germany, the grade will be converted according to what is referred to as the "Bavarian formula".

<sup>12</sup>The overall grade average will be calculated as the weighted grade average of the modules. <sup>13</sup>The weighting of grades for individual modules corresponds to the credits assigned to each module. <sup>14</sup>When calculating grades, one decimal point will be taken into account; all decimal points after this will be ignored, without rounding.

<sup>15</sup>If the applicant, at the time of filling the application, submits a transcript of records showing more than 140 credits, the assessment will be made on the basis of the modules in which they received their best grades, up to a total of 140 credits. <sup>16</sup>The applicant must list these modules in the application and confirm the accuracy of the information presented in writing.

c) **GMAT score**

Applicants who provide evidence of having a GMAT score of a minimum of 600 points will be awarded 10 points.

5.1.2 The applicant's points in the first stage is calculated as the sum of the individual points. <sup>2</sup>Decimal points that remain in the final figure will be rounded up.

5.1.3 Applicants who have achieved at least 57 points will receive confirmation that they have passed the aptitude assessment process.

5.1.4 <sup>1</sup>Unsuitable applicants with a total score of fewer than 50 points will receive a rejection notice, signed by the TUM Board of Management, specifying the reasons for rejection and providing information on legal remedies. <sup>2</sup>Signatory power may be delegated.

5.2 Second stage of the aptitude assessment process

**Assessment Essay**

5.2.1 For the remaining applicants, the second stage is the evaluation of the essay. In the second stage of the aptitude procedure, the professional qualifications acquired in the bachelor program, the grade of the ranking or the final grade and the result of the essay are evaluated, whereby the qualification acquired in the bachelor program is to

be given at least equal consideration. The essay will be assessed by two members of the commission on a scale of 0-40 points. The content of the essay will be evaluated according to the following criteria:

The applicant should be able to,

1. present abilities for scientific-logical argumentation with basic and method-oriented text structure, as well as to write the essay in a scientific way and to cite sources correctly,
2. categorize the question in the context of economic-technical facts,
3. express themselves in English.

5.2.2 Each member of the Commission shall independently assess each of the three criteria, the criteria being weighted as follows:

1. scientific-logical reasoning skills with basic and applied method-oriented text structure, and to present the essay in a scientific manner and under correct indication of sources: maximum 20 points
2. Classification of the question in the context of economic-technical facts: maximum 10 points
3. English language proficiency: maximum 10 points

5.2.3 <sup>1</sup>The evaluation of the essay shall be carried out by at least two members of the Commission. <sup>2</sup>The Commissioners will independently evaluate each of the three criteria. <sup>3</sup>The score per member of the Commission is the sum of the weighted evaluations of each criterion. <sup>4</sup>The total score shall be the arithmetic mean of the scores of the two Commissioners, rounded up to whole points. <sup>5</sup>The maximum number of points is 40.

5.2.4 <sup>1</sup>The applicant's overall score in the second stage is calculated as the points obtained under 5.2.3 and the points under 5.1.1 a) (academic qualification) and 5.1.1 b) Grading table/ranking of final grade. <sup>2</sup>Applicants with 80 or more points will be deemed suitable.

5.2.5 <sup>1</sup>The result of the aptitude test as decided by the committee will be communicated in writing. <sup>2</sup>The notice must be signed by the TUM Board of Management. <sup>3</sup>Signatory power may be delegated. <sup>4</sup>A rejection notice must specify the reasons for the rejection and provide information on legal remedies.

5.2.6 Admissions to the Master's program in Management shall apply to all subsequent applications for this program.

## 6. Record

<sup>1</sup>The aptitude assessment process must be documented, including the date, duration and location of the assessment, the names of the committee members, the applicant's name and the decision of the members of the committee, as well as the overall result. <sup>2</sup>This record must contain the essential reasons for the decision for the evaluation of the essay; these reasons may be recorded in note form.

## 7. Repetition

Applicants who fail the aptitude test for the Master's program in Management may register to repeat the Aptitude Assessment Test once.

### **Appendix 3: IMIM Admission Requirements**

Applicants for the IMIM program must attach the following documents to their application:

Proof of

1. a qualified Bachelor's degree in a technical or natural science subject with a minimum of 180 credits,
2. a curriculum vitae,
3. adequate knowledge of the English language; students must provide proof in the form of a recognized language text, such as the Test of English as a Foreign Language (TOEFL, scoring at least 89 points), the International English Language Testing System (IELTS, at least 6.5 points in total and no individual result worse than 6.0), the Cambridge Main Suite of English Examinations (at least grade B and no element worse than grade C), or the Pearson Academic Test (PTE; at least 62 points and at least 57 points in each of the four elements); applicants whose native language is English do not need to submit such proof,
4. a letter of motivation,
5. two letters of recommendation (simple copies)
6. if applicable, a GMAT or GRE test (not obligatory, but recommended).