

**The officially published GERMAN text alone has binding force**

**Academic and Examination Regulations  
for the Master's Degree Program Sustainable Resource Management  
at the Technical University of Munich**

**dated 20 August 2015**

**Engrossed version  
as amended by the Seventh Amending Statute of 15 December 2022**

In accordance with Art. 13(1) Sentence 2 in conjunction with Art. 58(1) Sentence 1, Art. 61(2) Sentence 1 and Art. 43(5) of the Bavarian Higher Education Act [*Bayerisches Hochschulgesetz (BayHSchG)*] the Technical University of Munich issues the following Regulations:

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### **§ 34**

#### **Applicability, Academic Titles**

- (1) <sup>1</sup>The Examination and Academic Regulations for the Master's Program in Sustainable Resource Management (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. <sup>2</sup>The APSO has 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 also be used with the name of the university "TUM".

### **§ 35**

#### **Commencement of Study, Standard Duration of Study, ECTS**

- (1) The Master's Degree Program Sustainable Resource Management at the Technical University of Munich commences, as a rule, in the winter semester.
- (2) <sup>1</sup>The number of classes in required and elective subjects needed to obtain the master's degree is 78 credits (55 weekly hours per semester) spread over three semesters. <sup>2</sup>Students will have a maximum of six months (30 credits) to complete their master's thesis in accordance with § 46. <sup>3</sup>Furthermore, eight weeks (12 credits) of practical research are required. <sup>4</sup>The number of coursework units and examinations in required and elective subjects to be completed in the Master's Program in Sustainable Resource Management according to Appendix 1 is a minimum of 120 credits. <sup>5</sup>The standard duration of study for the master's program is a total of four semesters.

### **§ 36**

#### **Eligibility Requirements**

- (1) Eligibility for the Master's Program in Sustainable Resource Management 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 engineering, natural sciences, economics, or social sciences or a comparable degree program,
  2. 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 the Test of English as a Foreign Language (TOEFL) (with a minimum of 88 points), the International English Language Testing System (IELTS) (with a minimum of 6.5 points), or the Cambridge Main Suite of English Examinations; if, in the undergraduate program, 60 credits were obtained for examinations administered in English-language examination modules, adequate proficiency in the English language is deemed proven.
  3. passing of the Aptitude Assessment according to Appendix 2.
- (2) A degree is considered to be qualified within the meaning of 1(1) if there are no significant differences with regard to the competencies (learning outcomes) acquired in the designated bachelor's degree programs at TUM.

- (3) The comparability of programs, subject-specific aptitude, as well as the equivalence of degrees acquired at foreign institutions will be decided upon by the Selection Committee in compliance with Art. 63 of the Bavarian Higher Education Act [*BayHSchG*].

### **§ 37**

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

- (1) <sup>1</sup>General provisions concerning 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 applies.
- (2) The curriculum listing the required and elective modules is included in Appendix 1.
- (3) The following areas of concentration can be selected for the Sustainable Resource Management master's degree program:
- Management and Protection of Forest Ecosystems
  - Wildlife and Protected Area Management
  - Landscape Management
  - Renewable Resources
  - Climate, Air and Water
  - Soils and Soil Management
  - Material and Waste Management
  - Sustainable Agricultural Value Chains
- (4) The language of instruction in the Master's Degree Program Sustainable Resource Management is English.

### **§ 37 a**

#### **Professional Internship**

- (1) 1A professional internship is a pass/fail credit requirement within the meaning of § 6(7) APSO. <sup>2</sup>Its duration is 8 weeks (12 credits). <sup>3</sup>Successful participation is confirmed by the companies and institutions where the internship was undertaken and verified with internship reports.
- (2) The Examination Board decides on the recognition of successfully completed vocational training or an equivalent achievement as equivalent to a professional internship.

### **§ 38**

#### **Examination Deadlines, Academic Progress Checks, Failure to Meet Deadlines**

- (1) Examination deadlines, academic progress checks, 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 required modules listed in Appendix 1, with the exception of the General Education Subject, must be successfully completed by the end of the second semester. <sup>2</sup>In the event of failure to comply with these deadlines § 10(5) of the APSO applies.

## § 39 Examination Board

In accordance with § 29 of the APSO, the board responsible for all decisions concerning examination matters is the Examination Board Sustainable Resource Management at the TUM School of Life Sciences.

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

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

## § 41 Continuous Assessment Procedure, Types of Assessment

(1) <sup>1</sup>In addition to written and oral examinations, types of assessment in accordance with § 12 and § 13 of the APSO may include (but are not limited to) laboratory assignments, exercises (tests, where applicable), reports, project work, presentations, learning portfolios, research papers, or parcours examinations. <sup>2</sup>Details of each module examination and the competencies to be assessed in each examination are set out in the module descriptions. <sup>3</sup>Where the topic permits, the examination can be held either as an individual or group examination; § 18(2) Sentences 2 and 3 of the APSO apply accordingly.

- a) <sup>1</sup>A **written examination** is a supervised examination, in which 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. <sup>2</sup>The duration of written examinations is regulated in § 12(7) of the APSO.
- b) <sup>1</sup>Depending on the discipline, **laboratory assignments** may include experiments, measurements, field work, field exercises, etc., with the goal of students conducting such work, evaluating results, and gaining knowledge. <sup>2</sup>These may consist of, for example, process descriptions and the underlying theoretical principles including studying the relevant literature; preparation and practical implementation; calculations, if required, and documentation, evaluation, and interpretation of the results in the context of the knowledge to be gained. <sup>3</sup>Laboratory assignments may be complemented by presentations designed to demonstrate a student's communication competency in presenting scholarly work to an audience.
- c) <sup>1</sup>**Practical credit requirements** involve students completing assigned tasks (for example, solving mathematical problems, writing computer programs, preparing models, preparing designs) using theoretical knowledge to solve application-oriented problems. <sup>2</sup>Exercises are designed to assess a 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 be in the form of homework assignments, practice sheets, programming exercises, (e-)tests, design tasks, posters, tasks assigned within a university internship program, etc.
- 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>Students are expected to demonstrate that they have understood all essential aspects and are able to present them 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 or a subject-specific discussion in order to assess a student's communication competency in presenting scholarly work to an audience. <sup>3</sup>It may also encompass design sketches, drawings, plans, models, objects, simulations or documentation.

- 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>Students are expected to demonstrate that they are able 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, abstract, term 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.
- g) <sup>1</sup>A **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. <sup>2</sup>For the presentation, the student is expected to demonstrate that he or she 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. <sup>3</sup>In addition, the student is expected to demonstrate that he or she is able to respond competently to any questions, suggestions, or discussions brought by the audience and relating to his or her subject area. <sup>4</sup>The presentation may be complemented by a brief written precis.
- h) <sup>1</sup>An **oral examination** is a timed, graded discussion on relevant topics and specific questions to be answered. <sup>2</sup>In oral examinations students are expected to demonstrate that they have understood the central concepts of the subject matter covered by the exam and are able to apply them to specific problems. <sup>3</sup>The duration of the examination is regulated in § 13(2) of the APSO.
- i) <sup>1</sup>A **learning portfolio** is a collection of completed work compiled by the student according to predefined criteria that exhibits the student's progress and achievements in defined content areas at a given time. <sup>2</sup>Students are required to explain why they chose the work they have and its relevance for their learning progress and the achievement of the defined learning outcomes. <sup>3</sup>With the learning portfolio, students are expected to demonstrate that they have taken active responsibility for their learning process. <sup>4</sup>Depending 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. <sup>5</sup>A subject-specific final oral discussion for the purpose of reflection and based on the content of the learning portfolio may also take place.
- j) <sup>1</sup>The **parcours examination** is made up of several components. <sup>2</sup>Unlike a module examination component, parcours exam components are administered in sequence and completed in a specific time frame and location. <sup>3</sup>Parcours components entail various types of examination, which together evaluate the competency profile of the module as a whole. <sup>4</sup>Possible types of examination in parcours components may include those listed in g) and h) in combination with a practical requirement. <sup>5</sup>The total duration of the parcours examination with all its components is indicated in the module catalog.
- (2) <sup>1</sup>As a rule, module examinations are taken concurrently with the program. <sup>2</sup>The type and duration of module examinations is stipulated in Appendix 1. <sup>3</sup>For any changes to the stipulated module provisions § 12(8) of the APSO applies. <sup>4</sup>The assessment of the module examination is governed by § 17 of the APSO. <sup>5</sup>The grade weights of module examination components correspond to the weighting factors assigned to them in Appendix 1.
- (3) Where Appendix 1 provides that a module examination is either in written or oral form, the examiner will inform the students officially and in appropriate form, no later than the first day of classes, of the type of examination to be held.

## § 42 Admission to and Registration for the Master's Examination

- (1) Students who are enrolled in the Master's Degree Program Sustainable Resource Management are deemed admitted to the module examinations of the master's examination.
- (2) <sup>1</sup>Registration requirements for module examinations are stipulated in § 15(1) of the APSO.  
<sup>2</sup>Registration requirements for repeat examinations are stipulated in § 15(2) of the APSO.

### **§ 43**

#### **Scope of the Master's Examination**

- (1) The master's examination consists of:
  - 1. the module examinations in the corresponding modules according to § 43(2),
  - 2. the master's thesis pursuant to § 46
  - 3. and the coursework listed in § 45.
- (2) <sup>1</sup>The module examinations are listed in Appendix 1. <sup>2</sup>Students must complete 33 credits in the required modules and at least 45 credits in elective modules. <sup>3</sup>The selection of modules must comply with § 8(2) of the APSO.

### **§ 44**

#### **Repeat Examinations, 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 (Pass/Fail Credit Requirements)**

In addition to the examinations listed in § 43(1), verification of the successful completion of coursework in the module "Professional Internship" amounting to 12 credits must be provided in accordance with § 37 a.

### **§ 45 a**

#### **Multiple Choice Tests**

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

## **§ 46 Master's Thesis**

- (1) As part of the master's examination, each student must write a master's thesis according to § 18 of the APSO.
- (2) <sup>1</sup>Completion of the Master's Thesis module, as a rule, is the final examination requirement. <sup>2</sup>Upon request students may be granted early approval to commence work on the master's thesis if the objective of the thesis in the sense of § 18(2) APSO can be fulfilled under consideration of the progression of studies to date."
- (3) <sup>1</sup>The period between topic assignment 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 the student fails to submit it on time without valid reasons as specified in § 10(7) of the APSO. <sup>3</sup>The master's thesis must be written in English.
- (4) The completion of the master's thesis consists of a written project proposal (coursework requirement) and the research paper (final thesis).
- (5) <sup>1</sup>If the master's thesis was 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 to prepare the Master's Thesis module within six weeks of 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 in accordance with § 43(1) have been passed and a plus credits account of at least 120 credits has been achieved.
- (2) <sup>1</sup>The module grade will be determined 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) and the master's thesis. <sup>3</sup>The grade weights of the individual modules correspond to the credits assigned to each module. <sup>4</sup>The overall assessment is expressed by the designation according to § 17 of the APSO.

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

If the master's examination is 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\*)**

- (1) <sup>1</sup>These regulations will enter into force on 1 October 2015. <sup>2</sup>They apply to all students who commence their studies at the Technical University of Munich as of the winter semester 2015/16.

<sup>1</sup>At the same time, the Academic and Examination Regulations for the Master's Degree Program Sustainable Resource Management at the Technical University of Munich from 6 March 2009, recently amended by the statute from 3 November 2014, ceases to be effective. <sup>2</sup>Students who commenced their studies at the Technical University of Munich prior to the winter semester 2015/16 are to complete their studies in accordance with the regulations named in § 49(2) Sentence 1. <sup>3</sup>By request, they may transfer to the new Academic and Examination Regulations.

\*) This provision concerns the entry into force of these regulations in the original version from 20 August 2015. The date of entry into force of the amendments is specified in the Amending Statute.



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**Appendix 1: Examination Modules\***

No.	Module name	Type of instruction V Ü S	Sem.	SWS	Credits	Type of examination	Duration of examination	Weighting factor	Language of instruction
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**Required Modules**

WZ1821	Natural Resources – Traits, Management and Theory of Sustainability	V	1	5	5	Written exam	90 min		English
WZ1824	System Analysis and Introduction to Ecology	V	1	4	5	Written exam	90 min		English
WZ2713	Methods of Scientific Communication	S	1	4	4	Research paper	-		English
WZ1822*	Introduction to Economics and Business Ethics	V	1	4	5	Written exam	90 min		English
WZ1823	Inventory Methods, Statistics and GIS	V+Ü	1	4 V + 1 Ü	6	Written exam	120 min		English
WZ2712*	Project Management and Cross Cultural Communication	S	1	3 S + 1 S	5	Project work	-		English
WI000926*	International Environmental Governance and Conflict Management	V	1	4	5	Research paper	-		English
WZ2714	General Education Subject <sup>1</sup>		2		3				German English
	<b>Total</b>				<b>33</b>				

<sup>1</sup>General Education Subject: In the module, 3 credits are required from the course offerings at the TUM, Carl von Linde Academy and the TUM Language Center (except for English courses) – modules from the Sustainable Resource Management degree program cannot be applied.

\* “Management Aspects”: From the three modules amounting to 15 credits, students must obtain 10 credits.

**Master’s Thesis**

WZ2754	Master’s Thesis		4		30	Research paper + Report(SL)	-		English
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**Elective Modules and Science Topics** – a total of 45 credits (30 from science topics and 15 from free elective modules)

Science Topics	No.	Module name	Type of instruction V Ü S	Sem.	SWS	Credits	Type of examination	Duration of examination	Weighting factor	Language of instruction
Free Elective Modules	WI000286	Environmental and Natural Resource Economics	V Ü	2	4	5	Written exam	120 min		English
	WZ2936	Sustainable and Environmental Regulations	S	2	4	5	Project work			English
	WZ1590	Climate Change Economics	V	2	4	5	Written exam	90 min		English
	WZ1545	Human Resource Management in Agriculture and Related Industries	S	3	4	5	Written exam	90 min		English
	WZ1674	Research Methods and Economic Research Project	S	2	4	6	Research paper			English
	WZ1413	Wildlife Monitoring in Ecology: Concepts, Methods and Application	S	3	4	5	Written exam	90 min		English
Management and Protection of Forest	WZ4161	Forest Management	V Ü	2	2 VI + 3,5 Ü	5	Oral exam	30 min		English
	WZ2716	Forest Growth and Forest Operations	V Ü	2	3.5 V + 0.5 Ü	5	Written exam	90 min		English
	WZ2717	Genetic Resources Management and Forest Protection	V	3	4	5	Written exam	60 min		English
	WZ4082	Plantation Forestry and Agroforestry	V	3	4	5	Oral exam	30 min		English
Wildlife and Protected Area Management	WZ4197	Protected Areas Biodiversity and Management	V	2	4	5	Written exam	90 min		English
	WZ4198	Wildlife Management and Wildlife-Human Interactions	V S	2	2 V + 2 S	5	Research paper			English
	WZ4189	Fisheries and Aquatic Conservation	V Ü	2	2 V + 2 Ü	5	Written exam + Presentation	60 min	2:1	English
	WZ6432	Wildlife and Conservation Biology	V Ü	3	2 V + 3 Ü	5	Written exam + Project work	60 min	7:3	English

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Science Topics	No.	Module name	Type of instruction V Ü S	Sem.	SWS	Credits	Type of examination	Duration of examination	Weighting factor	Language of instruction
Landscape Management	WZ4201	Vegetation Ecology and Geographical Information Systems	V Ü	2	2 V + 2 Ü	5	Written exam	90 min		English
	WZ2719	Landscape Planning	V S	2	2 V + 2 S	5	Research paper	-		English
	WZ2737	Remote Sensing and Image Processing	S Ü	3	2.5 S + 2.5 Ü	5	Project work	-		English
	WZ4094	Landscape Management – Application Study	V I	3	5	5	Project work	-		English
Renewable Resources	WZ2720	Renewable Energy Technologies	V	2	4	5	Written exam	60 min		English
	WZ2721	Agriculture Raw Materials and Their Utilization	V	2	4	5	Written exam	60 min		English
	WZ4098	Forestry Raw Materials and Their Utilization	V Ü	3	2 V + 2 Ü	5	Written exam	60 min		English
	WZ4202	Political and Social Perspectives of Renewable Resources	V Ü	3	1.5 L + 1.5 Ü	5	Research paper	-		English
Climate, Air and Water	WZ2731	Hydrometeorology and Management of Water Resources	V S	2	2 V + 2 S	5	Oral exam	30 min		English
	WZ2722	Mountain Catchments under Changing Climate	V Ü	2	2 V + 4 Ü	5	Research paper + Written exam	90 min	6.5 : 3.5	English
	WZ2732	Environmental Monitoring and Data Analysis	V I	3	1 V + 2 S + 2 Ü	5	Written exam	180 min		English
	WZ2730	Climate Change - Science, Impacts and Adaptation, Mitigation	V S	3	2 V + 2 S	5	Oral exam	30 min		English

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Science Topics	No.	Module name	Type of instruction V Ü S	Sem.	SWS	Credits	Type of examination	Duration of examination	Weighting factor	Language of instruction
Material and Waste Management	WZ4206	Material Flow Management and Applications	V	2	3	5	Research paper	-		English
	WZ4207	Waste and Waste Water Treatment	V	2	4	5	Written exam	90 min		English
	WZ2723	Utilization and Treatment of Special Materials and Waste	S	3	4	5	Presentation	-		English
	WZ2724	Emission Control in Land-Use and Animal Husbandry	V	3	3	5	Oral or Written exam	20 min 90 min		English
Sustainable Agricultural Value Chains	WZ1921	Strategy, Supply Chain Management and Sustainability in Agribusiness and the Food Industry	S	3	4	6	Learning portfolio			English
	WZ1567	Sustainability: Paradigms, Indicators and Measurement Systems	S	2	4	5	Report	-		English
	WI001190	Cooperation and integration in agricultural value chain	V	3	4	5	Written exam	120 min		English
	WI001215	Network and stakeholder analysis: Sustainable resource use and agri-food systems	V	2	4	5	Written exam	120 min		English
Soils and Soil Management	WZ2733	Introduction to Soil Science	V Ü	2	2 V + 3 Ü	5	Written exam + Lab assignment (SL)	60 min		English
	WZ2735	World Soil Resources	V Ü	2	2 V + 3 Ü	5	Oral exam + Lab assignment (SL)	30 min		English
	WZ2734	Soil Protection	V	3	4	5	Oral exam	30 min		English
	WZ2736	Analytical Characterization of Soil Resources	V Ü	3	1 V + 3 Ü	5	Research paper	-		English

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The Examination Board regularly updates the elective modules course catalog. Any changes will be communicated no later than the beginning of the semester on the web pages of the Examination Board.

Examinations in elective modules taken at other universities as part of a master's degree program (e.g. semester abroad) may be credited and considered as electives in the Master's examination in accordance with Appendix 1, even if there is no corresponding module in the module catalog of the Technical University of Munich, if they meet the requirements of the Master's Degree Program Sustainable Resource Management. The Sustainable Resource Management Examination Board decides on the recognition of credits in consultation with the Academic Advisor for the Master's Degree Program Sustainable Resource Management and the International Affairs Delegate.

**Coursework (Pass/Fail Credit Requirements):** A professional internship amounting to 12 credits is a pass/fail credit requirement:

No.	Module name	Type of Instruction V Ü S	Sem.	SWS	Credits	Type of examination	Duration of examination	Weighting factor	Language of instruction
WZ4061	Internship		2 + 3		12	Report			

**Explanation:** Sem. = semester; SWS = Semesterwochenstunden/weekly hours per semester; V = Vorlesung/lecture; Ü = Übung/exercise/internship; S = seminar; SL = Studienleistung/coursework

**\*\*)** During the transition period to the school structure, module numbers may change; the old and new module numbers will be listed side by side in TUMonline.

## **APPENDIX 2: Aptitude Assessment**

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

#### **1. Purpose of the Process**

<sup>1</sup>Eligibility for the Master's Degree Program in Sustainable Resource Management, in addition to the requirements according to § 36(1) Nos. 1 and 2, requires proof of aptitude according 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 field of Sustainable Resource Management. <sup>3</sup>Individual aptitude parameters are:

- 1.1 ability to do scholarly work and basic, methodologically sound research,
- 1.2 general and interdisciplinary basic knowledge relevant to the master's program with regard to global challenges of resource management,
- 1.3 subject-specific knowledge relevant to the master's program from the applicant's undergraduate studies in the fields of engineering, natural sciences, economics or social sciences.

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

2.1 <sup>1</sup>Aptitude Assessment is conducted annually. <sup>2</sup>The TUM Enrollment, Student Fees Payment, Leave of Absence and Disenrollment Regulations (ImmatS) of 9 January 2014 as amended, in particular § 7, apply to the Aptitude Assessment process.

2.2 <sup>1</sup>Applications for admission to the aptitude assessment process in accordance with § 7 of the ImmatS must be submitted to the Technical University of Munich together with the documents listed in 2.3 and in § 36(1)2 no later than 31 May (absolute deadline) using the online application procedure. <sup>2</sup>Official copies of the student's diploma and graduation certificate, serving as proof of the conferral of the bachelor's degree, must be submitted to the TUM Center for Study and Teaching – Admissions and Enrollment Office no later than five weeks after the first day of classes. <sup>3</sup>Admission to the master's program is, otherwise, not possible in accordance with § 36 of these regulations.

2.3 The application must include:

- 2.3.1 a transcript of records containing modules amounting to at least 180 credits; the transcript of records must be issued by the relevant examination authority or academic programs office;
- 2.3.2 Complete (without time gaps) curriculum vitae in English,
- 2.3.3 Optional, to serve as the basis for a potential aptitude assessment interview: a written statement in English (max. 1 A4 page) of the reasons for choosing the Master's Degree Program Sustainable Resource Management at the Technical University of Munich, in which the candidate explains those specific abilities and interests that make him/her particularly qualified for the Master's Degree Program Sustainable Resource Management at the Technical University of Munich; a candidate's exceptional motivation and commitment is to be demonstrated by providing details on program-related vocational training, internships, stays abroad, or program-related further education beyond the attendance and course requirements of the bachelor's program, if necessary by appropriate documentation,

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- 2.3.4 If a written statement is submitted according to 2.3.3, the applicant must submit a declaration that the written statement is the applicant's own work and that the applicant has clearly identified any ideas taken from outside sources.

### **3. Aptitude Assessment Commission, Selection Committees**

- 3.1 <sup>1</sup>Aptitude assessment is administered by the Aptitude Assessment Commission and the Selection Committees. <sup>2</sup>Aptitude Assessment Commission is responsible for preparing the aptitude assessment process, organizing it and ensuring a structured and standardized process for determining aptitude within the framework of these Regulations; it bears responsibility, insofar as no other body is specified by these Regulations or through delegation of its authority to another body. <sup>3</sup>Selection Committees are to conduct the assessment process in accordance with No. 5 below, subject to No. 3.2 Sentence 11.
- 3.2 <sup>1</sup>The Aptitude Assessment Commission consists of five members, one of whom is the Academic Program Director. <sup>2</sup>The other four members of the Commission are appointed by the Dean, in consultation with the Vice Dean of Academic and Student Affairs, from among the authorized examiners of the TUM School of Life Sciences; a deputy is to be appointed for each member of the Commission. <sup>3</sup>At least three Commission members must be university educators within the meaning of the Bavarian Act on Higher Education Staff (BayHSchPG). <sup>4</sup>The departmental student council has the right to name a student representative to serve on the Commission in an advisory capacity. <sup>5</sup>The Commission is chaired by the Academic Program Director. <sup>6</sup>The Commission elects a deputy chairperson from among its members. <sup>7</sup>Procedures are governed by § 31 of the TUM Charter as amended. <sup>8</sup>The term in office of Commission members is 2 years. <sup>9</sup>Extensions of the term of office and reappointments are possible. <sup>10</sup>Urgent decisions that cannot be postponed can be made by the Academic Program Director on behalf of the Commission; He/She must inform the Commission of such decisions without delay. <sup>11</sup>The Campus Office supports the Commission and the Selection Committee; the Commission may delegate to the Office the task of assessing formal admissions requirements in accordance with Nr. 4, as well as the determination of points to be awarded based on defined criteria for which there is no freedom of discretion involved. This includes, in particular, the conversion of grades and the calculation of the overall points earned by the applicant. The Office may also be involved in choosing the members of the Selection Committee from among the commissioners and assigning them to applicants.
- 3.3 <sup>1</sup>Each Selection Committee consists of two members of the TUM School of Life Sciences, who are authorized to conduct examinations in the degree program according to Art. 62(1) Sentence 1 of the Bavarian Higher Education Act [BayHSchG] in conjunction with the act governing examiners at institutions of higher education [Hochschulprüferverordnung]. <sup>2</sup>At least one member must be a university educator within the meaning of the Bavarian Act on Higher Education Staff (BayHSchPG). <sup>3</sup>It is permissible to serve concurrently on both the Aptitude Assessment Commission and the Selection Committee. <sup>4</sup>Members of the Committee are appointed by the Commission for a term of 1 year; No. 3.2 Sentence 9 applies accordingly. <sup>5</sup>Different Selection Committees may be assigned to individual criteria and stages of the assessment process.

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

- 4.1 Admission to the aptitude assessment process requires that all documentation specified in no. 2.2 has been submitted in a timely and complete fashion.

4.2 <sup>1</sup>Applicants who have fulfilled the requirements according to No. 4.1 will be assessed according to No. 5. <sup>2</sup>Applicants not suited for the program will receive a letter of rejection stating the grounds for rejection and informing them of legal remedies.

## 5. The Aptitude Assessment Process

### 5.1 First Stage

5.1.1 <sup>1</sup>As part of the first stage of aptitude assessment, the qualifications acquired in the first degree program are assessed on the basis of the submitted final grade and the applicant's subject-specific knowledge is assessed on the basis of an online aptitude test. <sup>2</sup>A maximum of 70 points are awarded.

#### a) Final Grade

The applicant will be awarded one point for each tenth that the final grade of the undergraduate degree program is better than 4.0. <sup>2</sup>The maximum number of points is 30. <sup>3</sup>Negative points will not be awarded. <sup>4</sup>Grades of international degrees will be converted by applying the Bavarian formula.

#### b) Online Aptitude Test

<sup>1</sup>The online aptitude test is a 40-minute, written test in English. <sup>2</sup>The purpose of the test is to demonstrate whether it can be expected that the applicant will attain the goal of the degree program and whether he or she has the general level of knowledge corresponding to the fundamentals of the relevant bachelor's degree program so that successful completion of the degree program is to be expected.

<sup>3</sup>Test covers the following categories in the indicated weighting:

- Basic general and interdisciplinary knowledge related to global resource management challenges, research methods, and general knowledge of sustainability (75%);
- Specific knowledge in one of the fields of engineering, natural sciences, economics or social sciences (25%).

<sup>4</sup>Any subject-specific academic knowledge that is to be taught in the master's degree program Sustainable Resource Management will not affect the decision. <sup>5</sup>Applicants must demonstrate in the test that they are suitable for the master's degree program. <sup>6</sup>Questions are selected by two members of the Commission, who also decide after assessing the results about the possible exclusion of individual questions; at least one member must be a university educator within the meaning of the Bavarian Act on Higher Education Staff (BayHSchPG). <sup>7</sup>The test is multiple choice with only one correct response to each question. <sup>8</sup>For each correct response, the number of points specified in the test for the respective question will be awarded. <sup>9</sup>The maximum possible number of points in the performance assessment is 40. <sup>10</sup>The date of the test will be announced by the Commission at least one week in advance. <sup>11</sup>Time slots for the test must be scheduled before expiration of the application deadline. <sup>12</sup>The appointment for the test must be kept by the applicant. <sup>13</sup>The online aptitude test takes place only once per application period. <sup>14</sup>In exceptional cases, a later appointment may be scheduled for well-grounded, documented reasons.

5.1.2 <sup>1</sup>The points total in the first stage will be calculated as the sum of the individual assessments in 5.1.1 a) final grade and results of the online aptitude test 5.1.1 b), whereby decimal places are rounded up.

5.1.3 <sup>1</sup>Applicants with at least 52 points will be deemed suitable.

5.1.4 Applicants who have achieved less than 46 points fail the aptitude assessment.



## 5.2. Second Stage

5.2.1 <sup>1</sup>The remaining applicants will be invited to an aptitude assessment interview. <sup>2</sup>In the second stage of the aptitude assessment, the qualifications acquired in the bachelor's degree program and the result of the assessment interview are evaluated, whereby the qualification acquired in the bachelor's is to be weighted equally.

<sup>3</sup>Interview appointments will be announced at least one week in advance. <sup>4</sup>Time slots for interviews must be scheduled before expiration of the application deadline. <sup>5</sup>The interview appointment must be kept by the applicant. <sup>6</sup>If the applicant is unable to attend an aptitude assessment interview due to reasons beyond his/her control, a later appointment may be scheduled upon a student's well-grounded request, but no later than two weeks before the beginning of classes. <sup>7</sup>As a rule, the interview is conducted by video conference. <sup>8</sup>If the video or audio transmission is disrupted, the interview can be continued after the disruption has been resolved or a follow-up appointment can be scheduled. <sup>9</sup>In the event of repeated disruptions, the aptitude test may be scheduled as an in-person test in deviation from Sentence 7. <sup>10</sup>Sentences 8 and 9 do not apply if it can be proven that the applicant is responsible for the disruption. <sup>11</sup>In this case, the aptitude assessment interview will be assessed.

5.2.2 <sup>1</sup>The aptitude assessment interview is to be held individually for each applicant. <sup>2</sup>The interview will be held in English and last at least 20 but not more than 30 minutes for each applicant. <sup>3</sup>The interview will focus on the following topics:

1. Exceptional motivation for the Master's Degree Program Sustainable Resource Management according to the criteria for assessing the optional written statement of purpose specified in No. 2.3.3.
2. Individual aptitude parameters according to Nos. 1.1 through 1.3
  - Demonstration of previous subject-specific knowledge: Questions from the fields of engineering, natural sciences, economics and/or social sciences,
  - Exposition of a research project (e.g. the final thesis) from the first degree program.
3. ability to communicate in English.
  - The applicant is able to express him/herself comprehensibly in English and can explain topics relevant to the subject precisely;
  - statements are reasoned convincingly by using arguments and meaningful examples;
  - questions about the bachelor's degree program are answered using exact terminology and comprehensible reasons are given.

<sup>4</sup>The above topics may cover the documentation submitted pursuant to 2.3. <sup>5</sup>Any subject-specific academic knowledge that is to be taught in the Master's Degree Program Sustainable Resource Management will not affect the decision. <sup>6</sup>With the applicant's approval, a representative of the student body may sit in on the interview.

5.2.3 <sup>1</sup>Committee members independently assess each of the three areas with equal weighting. <sup>2</sup>Each member of the Committee will grade the result of the interview on a scale from 0 to 20, 0 being the worst and 20 being the best possible result. <sup>4</sup>The points total for the aptitude assessment interview will be calculated as the arithmetic mean of the individual evaluations. <sup>5</sup>Non-vanishing decimal places must be rounded up.

5.2.4 <sup>1</sup>The total number of points awarded in stage 2 is the sum of the points from 5.2.3 and the points from 5.1.1 a) final grade and b) online aptitude test. <sup>2</sup>Applicants with 59 or more points will be deemed suitable. <sup>3</sup>Applicants with a total score of less than 59 points have failed the aptitude assessment.

## 5.3 Determination and Notification of Results

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<sup>1</sup>Applicants will be informed of the results of the aptitude assessment through official notification. <sup>2</sup>Applicants not suited for the program will receive a letter of rejection stating the grounds for rejection and informing them of legal remedies.

5.4 Candidate's suitability for the program, once determined in aptitude assessment, applies to all subsequent applications for this program.

## **6. Documentation**

<sup>1</sup>The aptitude assessment process must be documented, in particular the names of the participating members of the Selection Committee, the evaluation of the first and second stages, as well as the overall results. <sup>2</sup>A record is to be kept about the conduct of the test (date, place, beginning and end of the test, the names of those present, the names of the applicants, as well as any unusual occurrences). <sup>3</sup>The aptitude assessment interview must be documented, including the date, duration and location of the assessment, the names of the participating Selection Committee members, the applicant's name, and a list of main topics of discussion in bullet points.

## **7. Repeat Aptitude Assessments**

Applicants who have failed an aptitude assessment may apply once to repeat the aptitude assessment process.