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**Subject Examination and Study Regulations for  
the Master's Degree Program in Agricultural Systems Science at the  
Technical University of Munich**

**From 12 April 2018**

**Readable version**

**as amended by the SÄS for the appointment of the commission members in the  
aptitude test for Master's programs of the TUM School of Life Sciences dated  
February 1, 2021.**

On the basis of Article 13, Paragraph 1, Sentence 2 in conjunction with Article 58, Paragraph 1, Sentence 1, Article 61, Paragraph 2, Sentence 1 and Article 43, Paragraph 5 of the Bavarian University Act (BayHSchG), the Technische Universität München enacts the following statutes:

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### **§ 34**

#### **Scope, academic degree**

- (1) The Subject Examination and Study Regulations for the Master's Program in Agricultural Systems Science (FPSO) supplement the General Examination and Study Regulations for Bachelor's and Master's Programs at the Technical University of Munich (APSO) of March 18, 2011, as amended. The APSO has priority.
- (2) On the basis of the successful completion of the Master's examination, the academic degree "Master of Science" ("M.Sc.") is awarded. This academic degree may be awarded with the university suffix "(TUM)".

### **§ 35**

#### **Start of studies, standard period of study, ECTS**

- (1) The Master's program in Agricultural Systems Science at the Technical University of Munich generally begins in the winter semester.
- (2) The scope of the credits required for obtaining the Master's degree in the compulsory and elective areas is 90 (75-78 semester hours), distributed over three semesters. In addition, there is a maximum of six months for the Master's thesis according to § 46 and the Master's colloquium (a total of 30 credits). The scope of the examinations to be taken in the compulsory and elective areas according to Annex 1 in the Master's degree program in Agricultural Systems Science thus amounts to at least 120 credits. The standard period of study for the Master's program is four semesters in total.

### **§ 36**

#### **Qualification requirements**

- (1) Qualification for the master's degree in agricultural systems science is demonstrated by
  1. A qualified bachelor's degree of at least six semesters obtained at a domestic or foreign university or a degree of at least equivalent value in the fields of agricultural sciences, horticultural sciences, natural sciences, environmental sciences, economics or comparable courses of study,
  2. passing the suitability procedure according to Annex 2.
- (2) A qualified university degree within the meaning of Paragraph 1 exists if there are no significant differences with regard to the competencies (learning outcomes) acquired in the scientifically oriented relevant bachelor's degree program in Agricultural Sciences and Horticultural Sciences at TUM or with a comparable degree and these correspond to the subject-specific requirements of the master's degree program in Agricultural Systems Science.
- (3) The compulsory modules of the Bachelor's degree program in Agricultural and Horticultural Sciences shall be used for the determination according to Para. 2. If examination results are missing for this determination, the commission for the aptitude test according to Annex 2 No. 3 can demand that these examinations be taken as additional basic examinations according to Annex 2 No. 5.1.3 as proof of the qualification according to Para. 1. The applicants shall be informed of this after the documents have been reviewed as part of the first stage of the aptitude test.

- (4) The commission for the aptitude procedure decides on the comparability of the study program, on the determination of the special aptitude as well as on the crediting of competences in the examination of university degrees acquired at foreign universities under the consideration of Art. 63 Bavarian University Act.
- (5) Departing from para. 1 no. 1, students who are enrolled in a bachelor's degree program from the areas mentioned in para. 1 no. 1 may be admitted to the master's degree program upon justified application. The application may only be submitted if, in the case of a six-semester bachelor's degree program, module examinations amounting to at least 140 credits, in the case of a seven-semester bachelor's degree program, module examinations amounting to at least 170 credits, and in the case of an eight-semester bachelor's degree program, module examinations amounting to at least 200 credits are proven at the time the application is submitted. Proof of having passed the bachelor's degree must be provided within one year of commencing the master's degree program.

### **§ 37**

#### **Modularization, module examination, courses, fields of study, language of instruction**

- (1) General regulations on modules and courses are set out in §§ 6 and 8 APSO. In the event of deviations from module specifications, § 12 Para. 8 APSO shall apply.
- (2) The study plan with the modules in the compulsory and elective areas is listed in Appendix 1.
- (3) As a rule, the language of instruction in the Master's program in Agricultural Systems Science is German. If individual modules are held wholly or partly in English, this is indicated in Annex 1. If it is indicated in Annex 1 that a module will be held in English or German, the examiner shall announce the language of instruction in a suitable and binding manner no later than at the beginning of the lecture.

### **§ 38**

#### **Examination deadlines, study progress monitoring, missed deadlines**

Examination deadlines, study progress monitoring and missed deadlines are regulated in § 10 APSO.

### **§ 39**

#### **Examination board**

The body responsible for decisions in examination matters according to § 29 APSO is the examination board for the study program Agricultural Systems Science of the Faculty of Agricultural and Horticultural Sciences of the Technical University of Munich.

### **§ 40**

#### **Crediting of periods of study, study and examination achievements**

The crediting of study periods, study and examination achievements is regulated by § 16 APSO.

## § 41

### Course-related examination procedure, forms of examination

- (1) Possible forms of examination according to §§ 12 and 13 APSO are, in addition to written examinations and oral examinations in this degree program, in particular reports, project work, presentations, learning portfolios and scientific papers.
- a) An **examination** is written work under supervision with the aim of identifying problems in a limited time using the specified methods and defined aids and finding ways of solving them and, if necessary, being able to apply them. The duration of written examinations is regulated in § 12 Para. 7 APSO.
  - b) A **report** is a written review and summary of a learning process with the aim of reproducing what has been learned in a structured manner and analyzing the results in the context of a module. The report should prove that the essential aspects have been recorded and can be reproduced in writing. Possible report forms are, for example, field trip reports, internship reports, work reports, etc. The written report can be supplemented by a presentation in order to test the communicative competence in presenting the contents to an audience.
  - c) In the context of a **project work**, a project assignment is to be achieved as a defined goal in a defined time and with the use of suitable instruments in several phases (initiation, problem definition, role allocation, idea generation, criteria development, decision, implementation, presentation, written evaluation). In addition, a presentation can be part of the project work in order to test the communicative competence in presenting scientific topics to an audience. The concrete components of the respective project work and the competencies to be tested with it are listed in the module description. The project work is also possible in the form of group work. In this case, it should be demonstrated that tasks can be solved in a team. The contribution to be assessed as examination performance in each case must be clearly individually recognizable and assessable. This also applies to the individual contribution to the group result.
  - d) The **scientific paper** is a written performance in which a challenging scientific or scientific-application-oriented question is independently processed using the scientific methods of the respective discipline. It should be demonstrated that a question corresponding to the learning outcomes of the respective module can be completely processed in compliance with the guidelines for scientific work - from analysis to conception to implementation. Possible forms, which differ in their respective level of demand, are e.g. thesis paper, abstract, essay, study paper, seminar paper, etc. The scientific elaboration can be accompanied by a presentation and, if necessary, a colloquium in order to test the communicative competence of presenting scientific topics in front of an audience. The concrete components of the respective scientific elaboration and the competences to be examined with it are listed in the module description.
  - e) A **presentation** is a systematic, structured and visually supported oral presentation using suitable media (such as beamers, transparencies, posters, videos), in which specific topics or results are illustrated and summarized and complex issues are reduced to their essential core. The presentation is intended to demonstrate the competence to work through a specific topic in a specific time in such a way that it is presented in a clear, concise and comprehensible manner.

can be presented or lectured to an audience. In addition, it should be demonstrated that, in relation to the respective subject area, questions, suggestions or discussion points of the audience can be addressed in an informed manner. The presentation may be supplemented by a short written preparation. The presentation may be given individually or in groups. The contribution to be assessed as an examination performance must be clearly recognizable and assessable individually. This also applies to the individual contribution to the group result.

- f) An **oral examination** is a time-limited examination discussion on specific topics and concrete questions to be answered. In oral examinations, it should be demonstrated that the qualification objectives documented in the module descriptions have been achieved and that the interrelationships of the examination area have been recognized and special questions can be placed in these interrelationships. The oral examination can be conducted as an individual examination or as a group examination. The duration of the examination is regulated in § 13 Para. 2 APSO.
- g) A **learning portfolio** is a written presentation of one's own work, selected according to previously defined criteria, with which learning progress and performance status at a certain point in time and in relation to a defined content are to be demonstrated. The selection of the work, its relation to the student's own learning progress and its significance for the achievement of the qualification goals must be justified. The learning portfolio should demonstrate that responsibility has been taken for the learning process and that the qualification objectives documented in the module description have been achieved. Depending on the module description, the components of successful self-learning checks of the learning portfolio may include, in particular, work with application relevance, websites, weblogs, bibliographies, analyses, thesis papers as well as graphic presentations of an issue or a question. The concrete components of the respective learning portfolio and the competencies to be tested with it are listed in the module description.
- (2) The module examinations are usually taken during the course of study. The type and duration of a module examination are specified in Annex 1. In the event of deviations from these stipulations, § 12 Para. 8 APSO must be observed. For the evaluation of the module examination, § 17 APSO shall apply. The grade weights of partial module examinations correspond to the weighting factors assigned to them in Annex 1.
- (3) At the request of the students and with the approval of the examiners, examinations can be taken in English for German-language modules.

## § 42

### Registration and admission to the Master's examination

- (1) Upon enrollment in the Master's degree program in Agricultural Systems Science, students are considered admitted to the module examinations of the Master's examination. Also, students are considered admitted to individual module examinations who take additional examinations in the context of the consecutive Bachelor's degree program in Agricultural Sciences and Horticultural Sciences at the Technical University of Munich in accordance with § 46 a of the subject examination and study regulations for the Bachelor's degree program in Agricultural Sciences and Horticultural Sciences at the Technical University of Munich dated August 20, 2015.
- (2) Registration for a module examination in the compulsory and elective areas is governed by § 15 Para. 1 APSO. Registration for a corresponding repeat examination in a failed compulsory module is governed by § 15 Para. 2 APSO.

### **§ 43**

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

- (1) The master's examination includes:
  1. the module examinations in the corresponding modules according to par. 2,
  2. the Master's Thesis according to § 46 including the Master's Colloquium according to § 46 a.
- (2) The module examinations are listed in Appendix 1. Evidence of 45 credits in the compulsory modules and at least 45 credits in elective modules must be provided. When choosing the modules, § 8 para. 2 APSO must be observed.

### **§ 44**

#### **Repetition, failure of examinations**

- (1) The repetition of examinations is regulated in § 24 APSO.
- (2) The failure of examinations is regulated by § 23 APSO.

### **§ 45**

#### **Study achievements**

In the Master's program in Agricultural Systems Science, no course work is required except for examinations.

### **§ 45 a**

#### **Multiple choice method**

The implementation of multiple-choice procedures is regulated in § 12 a APSO.

### **§ 46**

#### **Master's Thesis**

- (1) Pursuant to § 18 APSO, students must prepare a Master's thesis (written paper) as part of the Master's examination. The Master's thesis (written paper) can be issued and supervised by expert examiners of the Faculty of Science Center Weihenstephan of the Technical University of Munich (topic writer). The expert examiners according to sentence 2 are appointed by the examination board.
- (2) The Master's Thesis (written paper) should be started after successful completion of all module examinations. Students can be admitted to the Master's Thesis early upon application if 60 credits have been achieved.
- (3) The time from issuance to delivery of the Master's Thesis (written work) may not exceed six months. The Master's Thesis (written composition) shall be deemed to have been taken and not passed if it is not delivered on time without good cause recognized in accordance with § 10 Para. 7 APSO. The Master's thesis (written work) can be written in German or English.

- (4) The completion of the module Master's Thesis consists of a written elaboration and the Master's Colloquium according to § 46 a. 230 credits are awarded for the Master's Thesis module.
- (5) If the Master's thesis (written work) has not been assessed with at least "sufficient" (4.0), it can be repeated once with a new topic. It must be re-registered no later than six weeks after the notification of the result.

#### **§ 46 a Master colloquium**

- (1) Students are considered to be registered for the Master's Colloquium in the Master's Thesis module if they have achieved at least 75 credits in the Master's program and have successfully completed the Master's Thesis (written paper). The examination should take place no later than two months after the registration date determined in accordance with sentence 1.
- (2) The Master's colloquium is to be conducted by the topic writer of the Master's thesis (written paper) and an expert assessor.
- (3) The master colloquium is to be held in German or English at the request of the student.
- (4) The duration of the master's colloquium is usually 60 minutes. The students have approx. 30 minutes to present their Master's Thesis (written elaboration). This is followed by a disputation which, starting from the topic of the Master's Thesis, extends to the further subject area to which the Master's Thesis belongs.

#### **§ 47 Passing and evaluation of the Master's examination**

- (1) The master's examination is passed if all examinations to be taken within the framework of the master's examination according to § 43 Para. 1 have been passed and a point account balance of at least 120 credits has been achieved.
- (2) The module grade is calculated according to § 17 APSO. The overall grade of the Master's examination is calculated as the weighted grade average of the modules according to § 43 para. 2 and the module Master's Thesis. The grade weights of the individual modules correspond to the assigned credits. The overall grade is expressed by the predicate according to § 17 APSO.

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

If the Master's examination is passed, a certificate, a certificate and a Diploma Supplement with a Transcript of Records shall be issued in accordance with § 25 Para. 1 and § 26 APSO. The date of the certificate shall be the date on which all examination and study achievements have been completed.

**§ 49**  
**Entry into force\*)**

These regulations come into force on April 1, 2018. It applies to all students who begin their specialized studies at the Technical University of Munich as of the winter semester 2018/19.

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\*) This provision concerns the entry into force of the Articles of Association in the original version of April 12, 2018. The date of entry into force of the amendments is specified in the amending Articles of Association.

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## Appendix 1: Examination modules

### I. Compulsory modules

No.	Module name	Teaching form	Sem.	SWS	Credits	Exam-art	Examination duration (min)	Weight-factor	Under-richts-language
WZ0027	Innovations for agricultural systems	V	1	4	5	Written exam	120		de
WZ0028	Applied Statistics: Biometrics and Econometrics	V + T	1	2 + 2	5	Written exam	120		de
WZ0029	Geoinformation systems and modeling	V + T	1	1 + 2	5	Written exam	90		de
WZ1056	Nutrient cycling in agroecosystems	V	1	4	5	Written exam	120		de
WZ1513	Production and resource economics	V	1	4	5	Written exam	120		de
WZ0030	Project agricultural systems	Project	2/3	10	10	Project work + oral exam	30	2/3 + 1/3	de
WZ0031	Research project	VI + Ü + FP	2/3	2 + 2 + 6	10	Project work			en/en
	<b>Total:</b>				<b>45</b>				

### II. Elective modules

A total of at least 45 credits must be earned from the following five lists. As an alternative to this list of subjects, modules up to a total of 30 credits can be selected from the entire range of courses offered by the Technical University of Munich, provided that the requirements of the modules correspond to those of the Master's program in Agricultural Systems Science. The examination board for the Master's degree program in Agricultural Systems Science is responsible for the verification.

Examination achievements in the area of elective modules acquired at another university within the framework of a Master's program (e.g. semester abroad) can also be credited up to a total of 30 credits and included in the Master's examination as elective achievements in Section II according to Appendix 1 if there is no corresponding module in the module catalog of the Technical University of Munich, but the other requirements correspond to those of the Master's program in Agricultural Systems Science. The examination board for the Master's program in Agricultural Systems Science decides on the recognition in consultation with the international representative of the Faculty of Agricultural and Horticultural Sciences.

Lists 1 to 4 can be extended continuously by the Examination Committee.

List 5 of the overlapping elective modules is continuously updated by the examination board. Changes will be announced on the website of the examination board at the beginning of the semester at the latest.

No.	Module name	Teaching form	Sem.	SWS	Credits	Exam-art	Examination duration (min)	Weight-factor	Under-richts-language
<b>1. plant production systems</b>									
WZ1062	Agricultural systems engineering in crop	S	1/3	4	5	oral examination	30		de
WZ1063	Epidemiology and management of plant diseases in arable crops.	V + Ü + S	1/3	2+1+1	5	Written exam	90		de
WZ1077	Renewable raw materials	V	1/3	4	5	Written exam	120		de
WZ0046	Plant breeding and testing	V	2	4	5	Written exam	120		en/en
WZ0047	Plant Stress Physiology	V + Ü + S	2	2+2+1	5	Written exam	90		en
WZ1060	Precision Planting	VI	2	4	5	Written exam	120		de
<b>2. animal production systems</b>									
WZ1052	Quantitative genetics and breeding planning	V + T	1/3	2 + 2	5	oral examination	30		de
WZ1049	Farm Animal Diseases	VI	1/3	4	5	oral examination	30		de
WZ0033	Physiology of growth, reproduction and lactation	V + VI	1/3	2 + 2	5	oral examination	30		en/en
WZ0034	Biotechnology of reproduction of farm animals	V + P + S	2	2 + 1 + 2	5	oral examination	20-30		en/en
WZ0035	Nutritional concepts for farm animals	V	2	4	5	oral examination	25-30		de
WZ0037	Animal husbandry systems	V	2	4	5	oral examination	30		de
<b>3. agroecosystems</b>									
WZ1065	Climate change and agriculture	V	1/3	4	5	Written exam	120		en/en
WZ1067	Agricultural soil protection	VI	1/3	4	5	Written exam	120		de
WZ2573	Special issues of nature conservation	V + S	1/3	2 + 2	5	Written exam	60		de
WZ1059	Grassland vegetation and -location	Ü	2	4	5	oral examination	30		de
WZ1057	Ecological operating systems	V + T	2	1 + 3	5	oral examination	30		de
WZ0121	Environmentally sound fertilizer systems	V + T	2	2 + 2	5	Written exam	120		de

<b>4. agricultural economics</b>									
WI000304	Agricultural and agri-environmental policy	VI	1/3	4	5	Written exam	90		de
WI100311	Analyses in Agribusiness Marketing	S	2	4	6	Scientific elaboration			de
WZ1567	Sustainability: paradigms, indicators and measurement systems	S	2	4	5	Report			de
WZ0038	Agribusiness Systems Analysis	VI + T	2	2 + 2	5	Project work			en
WZ0039	Farm analysis and development	V + T	2	2 + 2	5	Written exam	90		de
<b>5. overlapping elective modules</b>									
WZ0042	General education		1/2/3		5	according to offer 1)	according to offer 1)		
WZ1468	Soil fertility and yield	V + T	1/3	3 + 1	5	oral examination	30		de
WZ1037	Crop Physiology - Yield Physiology	V + T	1/3	2 + 2	5	oral examination	30		de
WZ0041	Economics in Technology and Innovation	V + S	1/3	2 + 2	5	Written exam	90		en
WZ2394	Fisheries Management	V + T	1/3	2 + 2	5	Written exam	60		en
WI000948	Food Economics	V	1/3	4	6	oral examination	30		en
WZ1058	Grassland agronomy and -ecology	S	1/3	4	5	oral examination	30		de
WZ0310	Landscape Water Balance	V + T	1/3	2 + 2	5	Written exam	120		de
WZ0044	Methods in Agribusiness Management	S	1/3	4	5	Written exam	120		de
WZ1039	Model experiments on plant nutrition	V + T	1/3	1 + 3	5	Presentation	30		en/en
WZ0043	Risk Theory and Modeling	V + T	1/3	2 + 2	5	Written	120		en
WZ1921	Strategy, Supply Chain Management and Sustainability in Agribusiness and the Food Industry	S	1/3	4	5	Learning port folio			en
WZ1070	Agricultural systems engineering in animal	S	2	4	5	oral examination	30		de
WZ2620	Applications of Evolutionary Theory in Agriculture: Population Genomics of Crop Pathogens and Disease Management	VI + S	2	3,3 + 0,7	5	oral examination	30		en
WZ0040	Data analysis in farm animal science	V + T	2	1 + 3	5	oral examination	30		de
WZ1075	Herbicides and plant physiology	V + T	2	2 + 2	5	Written exam	90		de
WZ1061	Model-based inventory management	V + T	2	2 + 2	5	Written exam	120		de

### III Master's Thesis

No.	Module name	Teaching form	Sem.	SWS	Credits	Exam-art	Examination duration (min)	Weight-factor	Under-richts-language
WZ0045	Master's Thesis				30				
	Master's Thesis				27	Scientific elaboration			en/en
	Final colloquium				3	Colloquium	60 - 90		en/en

#### Explanations:

Sem. = semester, SWS = semester hours per week, V = lecture, Ü = exercise, FP = research internship, VI = lecture with integrated exercise, S = seminar, P = internship

1) Students can choose from the courses offered by the TUM Language Center, the Carl von Linde Academy and UnternehmerTUM. The type and duration of examinations depend on the respective announcement of these institutions for the selected module.

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

#### **Credit balance of the respective semesters:**

Semester	Credits Compulsory modules	Credits Electives	Credits Master's Thesis	Total Credits	Number of Exams
1	25	5		30	6
2	20	10		30	4
3		30		30	6
4			30		2

## **Appendix 2: Suitability procedure**

### **Qualification procedure for the Master's program in Agricultural Systems Science at the Technical University of Munich**

#### **1. purpose of the procedure**

1In addition to the requirements of Section 36, Paragraph 1, No. 1, qualification for the Master's degree in Agricultural Systems Science requires proof of suitability in accordance with Section 36, Paragraph 1, No. 3, subject to the following regulations. 2The special qualifications and abilities of the applicants should correspond to the professional field of the agricultural systems scientist. 3Individual suitability parameters are:

- 1.1 Ability to work in a scientific or basic and methodological manner,
- 1.2 Existing undergraduate agricultural science expertise in the areas of:
  - Ecosystem Science
  - Plant Production Systems
  - Animal Production Systems
  - Technical systems related to the agricultural and horticultural sector
  - Agricultural and horticultural economics
- 1.3 Ability to think in a system-oriented way
- 1.4 Insights into current agricultural science research topics.

#### **2. procedure for checking the suitability**

- 2.1 The eligibility review process is conducted annually by the Agriculture and Horticultural Sciences program faculty.
- 2.2 Applications for admission to the procedure must be submitted to the Technische Universität München together with the documents according to 2.3.1 up to and including 2.3.3 in the online application procedure by May 31 (cut-off deadlines).
- 2.3 The application must be accompanied by:
  - 2.3.1 a transcript of records with modules worth at least 140 credits; the transcript of records must be issued by the relevant examination authority or the relevant study secretariat,
  - 2.3.2 a curriculum vitae in tabular form,
  - 2.3.3 a written justification of a maximum of one DIN A4 page for the choice of the study program Agricultural Systems Science at the Technical University of Munich, in which the applicants explain the special willingness to perform on the basis of which they consider themselves particularly suitable for the Master's study program Agricultural Systems Science at the Technical University of Munich; the special willingness to perform is to be justified, for example, by explanations of professional training specific to the study program, internships, stays abroad or subject-related further education in the Bachelor's study program that went beyond attendance times and compulsory courses; this is to be substantiated by attachments if necessary.

#### **3. commission on the suitability procedure**

- 3.1 The aptitude test is carried out by a commission, which usually consists of the dean of studies responsible for the Master's program in Agricultural Systems Science, at least two university professors and at least one research assistant. At least half of the commission members must be university professors. A student representative shall participate in the commission in an advisory capacity.
- 3.2 The appointment of the members shall be made by the Dean in consultation with the Associate Dean for Academic Affairs. At least one university lecturer shall be appointed as a deputy

member of the commission. The commission is usually chaired by the Dean of Studies. Article 41 of the BayHSchG, as amended, applies to the course of business.

- 3.3 If the commission acts in accordance with these statutes, the revocable assignment of certain tasks to individual commission members is permissible. If, pursuant to sentence 1, only one commission member is active in the performance of certain tasks, this member must be a university lecturer. If, pursuant to sentence 1, two or more members of the commission are active in the performance of certain tasks, at least half of them must be university professors. The commission shall ensure an appropriate allocation of responsibilities. If there is room for maneuver in the evaluation of an assessment criterion of the suitability procedure and at least two commission members are active in the evaluation of this criterion, the commission members shall evaluate independently according to the weighting specified, unless otherwise regulated; the score shall be the arithmetic mean of the individual evaluations, rounded up to whole numbers of points.

#### **4. admission to the qualification procedure**

- 4.1 Admission to the qualification procedure requires that the documents mentioned in No. 2.3 are submitted in due time and in full.
- 4.2 Those who meet the necessary requirements will be examined in the suitability procedure in accordance with No. 5.
- 4.3 Those who are not admitted will receive a rejection notice with reasons and instructions on how to appeal.

#### **5. Implementation of the suitability procedure**

##### **5.1 First stage of the implementation of the suitability procedure**

- 5.1.1 On the basis of the written application documents required according to No. 2.3, the commission shall assess whether the applicants have the suitability for the study program according to No. 1 (first stage of the implementation of the suitability procedure). The commission shall evaluate the submitted documents on a scale of 0 to 90 points, whereby 0 is the worst and 90 the best result to be achieved:

The following evaluation criteria are included:

##### **a) Professional qualification**

The curricular analysis of the existing subject knowledge is not carried out by schematic comparison of the modules, but on the basis of competences. It is based on the elementary subject groups considered in the following list for bachelor graduates from the fields of agricultural sciences, horticultural sciences, natural sciences, environmental sciences, economics or comparable courses of study.

- A) Ecosystem science (e.g., soil science, agroecosystems),
- B) Plant production systems (e.g., crop production, plant nutrition, phytopathology, plant breeding),
- C) Animal production systems (e.g., animal nutrition, animal husbandry, animal breeding),
- D) Agricultural and horticultural economics (e.g., production theory, business management, cost accounting),
- E) Technical systems related to the agricultural and horticultural sector (e.g. agricultural technology of animal husbandry, agricultural technology of plant cultivation, mechatronics, digitalization).

In the case of at least equivalent competences to the Bachelor's degree program in Agricultural Sciences and Horticultural Sciences at the Technical University of Munich, applicants receive a maximum of 50 points. The points are calculated from the sum of the subject groups mentioned under 5.1.1 a), which are each assessed with 10 points and equally weighted. Missing competences will be deducted according to the credits of the

corresponding modules of the Bachelor's degree program in Agricultural and Horticultural Sciences at the Technical University of Munich.

**b) Final grade**

One point is awarded for each tenth of a grade that the average calculated over examination performances amounting to 140 credits is better than 4.0. The maximum number of points is 30. Negative points are not awarded. For foreign degrees, the grade converted via the Bavarian formula is used.

If a degree certificate with more than 140 credits is available at the time of application, the evaluation will be based on the best graded modules amounting to 140 credits. The applicants must list these as part of the application and confirm the accuracy of the information provided in writing.

The average is calculated from graded module examinations amounting to 140 credits. The overall grade point average is calculated as the weighted grade point average of the modules. The grade weights of the individual modules correspond to the assigned credits. In determining the grade, one digit after the decimal point is taken into account; all other digits are deleted without rounding.

**c) Justification letter**

The written statement of reasons is evaluated by two commission members on a scale of 0 - 10 points. The content of the letter of justification is evaluated according to the following criteria:

1. can formulate his application request in a factual manner,
2. can present the connection between personal skills and the content of the course of study in a well-structured manner,
3. can convincingly justify the special suitability for the Master's program in Agricultural Systems Science by means of arguments and meaningful examples (see 2.3.3),
4. Can highlight key points of the rationale in appropriate language.

The commission members independently rate each of the four criteria on a point scale from 0 to 10, where 0 is the worst and 10 the best result to be achieved. The individual score of each member is the arithmetic mean of the scores of the equally weighted four criteria. The score of the letter of justification results from the arithmetic mean of the individual scores of the commission members. Non-vanishing decimal places shall be rounded up.

5.1.2 The score for the first stage is the sum of the individual scores. Digits that do not disappear are to be rounded up.

5.1.3 Whoever has achieved at least 70 points shall receive a confirmation of having passed the aptitude test. In cases where it has been determined that only individual subject requirements from the first degree program are not met, the commission for the aptitude test may require as a condition that basic examinations from the bachelor's degree program in agricultural sciences and horticultural sciences to the extent of a maximum of 30 credits be taken. These basic examinations must be taken in the first year of study. Failed basic examinations may only be repeated once within this period on the next examination date. The examination board may make admission to individual module examinations dependent on passing the foundation examination.

5.1.4 Unsuitable applicants with a total score of less than 50 points shall receive a notice of rejection with reasons and instructions on how to appeal, which must be signed by the management of the university. The authority to sign may be delegated.

**5.2 Second stage of the implementation of the suitability procedure:**

5.2.1 The remaining applicants are invited to a selection interview. In the second stage of the aptitude test, the qualification acquired in the first degree program and the result of the selection interview will be evaluated. The date of the selection interview shall be announced at least one

week in advance. Time slots for any selection interviews to be held must be set before the application deadline. The date set for the interview must be observed by the applicants. Anyone who is prevented from attending the selection interview for reasons for which he or she is not responsible may, upon justified application, be given a subsequent appointment no later than two weeks before the start of lectures.

5.2.2 The selection interview must be conducted individually for the applicants. The interview shall last a minimum of 20 minutes and a maximum of 30 minutes per applicant. The content of the interview shall cover the following main topics:

1. Special willingness to perform for the Master's program in Agricultural Systems Science according to the criteria mentioned in No. 2.3.3 for the assessment of the letter of justification,
2. Fundamental and application-related questions from the
  - 2.1 Ecosystem science
  - 2.2 Plant production systems
  - 2.3. animal production systems
  - 2.4. agricultural and horticultural economics
  - 2.5 Technical systems related to the agricultural and horticultural sector
 to assess the professional qualification.
3. in-depth understanding of agroecosystems
4. Insights into current agricultural science research topics.

The subject matter can also be the documents submitted according to 2.3. Scientific knowledge that is to be imparted only in the Master's program in Agricultural Systems Science does not decide. With the consent of the applicants, a member of the student group may be admitted to the audience.

5.2.3 The selection interview shall be conducted by two members of the commission. The commission members independently evaluate each of the focal points listed under 5.2.2 para. 1 no. 1 to no. 4, whereby the focal points are weighted equally. Each of the members shall record the result of the selection interview on the point scale from 0 to 80, where 0 is the worst and 80 the best result to be achieved. 4The score is the arithmetic mean of the individual scores. 5Non-vanishing decimal places shall be rounded up.

5.2.4 The total score for the second stage is the sum of the points from 5.2.3 and the points from 5.1.1 a) and b) (professional qualification and final grade). Whoever has achieved 90 or more points is classified as suitable.



- 5.2.5 The result of the suitability procedure determined by the commission shall be communicated in writing (if necessary, taking into account the conditions already stipulated in stage 1 according to No. 5.1.3). The notification shall be signed by the management of the university. The authority to sign may be delegated. A notice of rejection shall be accompanied by reasons and instructions on how to appeal.
- 5.2.6 Admissions to the master's degree program in agricultural systems science apply to all subsequent applications to this program.

## **6. transcript**

A record must be made of the course of the suitability procedure, showing the date, duration and place of the suitability procedure, the names of the commission members, the names of the applicants and the assessment of the commission members as well as the overall result. The minutes must show the main reasons for and topics of the interview with the applicants; the main reasons and topics may be listed in brief.

## **7. repetition**

Students who have not provided proof of eligibility for the Master's degree in Agricultural Systems Science may re-apply once for the eligibility process.

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Issued on the basis of the urgent decision of the President of the Technical University of Munich dated April 9, 2018 and the approval by the President of the Technical University of Munich dated April 12, 2018.

Munich, April 12, 2018  
Munich University of Technology

Wolfgang A. Herrmann  
President

These bylaws were filed at the college on April 12, 2018; notice of the filing was posted at the college on April 12, 2018. The date of announcement is therefore April 12, 2018.