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Academic and Examination Regulations for the Master's Degree Program Biology at the Technical University of Munich

dated 22 April 2021

as amended by the Amending Statutes of 16 December 2021

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 (*BayHSchG*) the Technical University of Munich issues the following Regulations:

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§ 34

Applicability, Academic Titles

- (1) ¹The Examination and Academic Regulations for the Master's Program Biology (FPSO) complement the General Examination and Academic Regulations for Bachelor's and Master's Programs at the Technical University of Munich (APSO) dated 18 March 2011 as amended. ²The APSO has precedence.
- (2) ¹Upon successful completion of the master's examination the degree "Master of Science" ("M.Sc.") is awarded. ²The academic title may also be used with the name of the university "(TUM)".

§ 35

Commencement of Study, Standard Duration of Study, ECTS

- (1) Admission to the master's program Biology at the Technical University of Munich is possible both in the winter and summer semesters.
- (2) ¹The number of classes in required and elective subjects needed to obtain the master's degree is 90 credits (75 weekly hours per semester) spread over three semesters. ²Students will have a maximum of six months to complete their master's thesis in accordance with § 46. ³The number of coursework units and examinations in required and elective subjects to be completed in the master's program Biology according to Appendix 1 is a minimum of 120 credits. ⁴The 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 Biology 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 an at least equivalent degree in Biology, Molecular Biotechnology, or a comparable degree program,
 2. adequate German language skills in accordance with § 7(4) No. 9 of the Statutes Governing Enrollment, Re-Enrollment, Leave of Absence and Disenrollment (ImmatS) of the Technical University of Munich from 9 January 2014, as amended, or adequate English language skills; students whose language of instruction is not English must demonstrate proficiency through an acknowledged language test such as "Test of English as a Foreign Language" (TOEFL) (with a minimum of 88 points), "International English Language Testing System" (IELTS) (with a minimum of 6.5 points), or "Cambridge Main Suite of English Examinations"; if, in the undergraduate program, 30 credits were obtained for examinations administered in English-language examination modules, or the thesis was written in English, adequate proficiency in English is deemed proven.
 3. passing of the Aptitude Assessment in accordance with Appendix 2.
- (2) A degree is considered a qualified degree within the meaning of Section 1 No. 1 if there are no significant differences with regard to the competencies (learning outcomes) acquired in the specified scholarly oriented bachelor's program at TUM.

- (3) ¹For Aptitude Assessment in accordance with Section 2, required modules of the bachelor's program Life Science Biology will be considered. ²If students do not meet all credit requirements, the Selection Committee can, in accordance with Appendix 2, No. 3, require students to complete additional fundamentals exams in accordance with Section 1 to verify their qualification as stipulated in Appendix 2, No. 5.1.3. ³The applicant must be informed thereof after review of the documentation during the first stage of the Aptitude Assessment process.
- (4) The assessment is made by the Selection Committee in accordance with Section 1 Nos. 1 and 3.
- (5) ¹In deviation from Section 1 No. 1, students enrolled in a bachelor's program specified in Section 1 No. 1 may be admitted to the master's program in justified cases. ²An application to the master's program by students enrolled in a bachelor's program may only be submitted if it can be verified that, in the case of a six-semester bachelor's program, module examinations amounting to at least 120 credits; in the case of a seven-semester bachelor's program, module examinations amounting to at least 150 credits; and, in the case of an eight-semester bachelor's program, module examinations amounting to at least 180 credits have been completed at the time of submission of the application. ³Verification of the awarding of the bachelor's degree must be provided within one year of commencement of the master's program.

§ 37

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

- (1) ¹General provisions concerning modules and courses are set forth in §§ 6 and 8 of the APSO. ²For 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) Students of the master's degree program Biology may choose from the following areas of specialization:
- Biochemistry and Cell Biology
 - Genetics
 - Medical Biology
 - Microbiology
 - Ecology
 - Plant Sciences
 - Animal Sciences

The combination of modules and choice of areas of specialization are governed by § 43(2) and (3).

- (4) ¹In addition to the German-language modules, sufficient modules are offered in English. ²It is therefore possible to study the master's program exclusively in English. ³Students who have not verified their knowledge of German in the application process will be conditionally admitted with the stipulation that they complete at least one module in which they acquire integrative knowledge of German by the end of the second semester of enrollment in the degree program. ⁴The offer will be announced by the Examination Board accordingly. ⁵Optional credits completed in extracurricular courses, e.g. German

courses offered by the TUM Language Center, will also be recognized. ⁶The language of instruction for each elective module is indicated in Appendix 1.

§ 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) ¹At least one of the module examinations listed in Appendix 1 must be successfully completed by the end of the second semester. ²In the event of failure to comply with this deadline § 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 Master's Examination Board for Biology of 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) ¹In addition to written examinations (*Klausuren*) and oral examinations, types of assessment according to § 12 and § 13 of the APSO include, in particular, laboratory assignments, practical credit requirements (tests, where applicable), reports, project work, presentations, learning portfolios, research papers, or parcours examinations. ²Details of each module examination and the competencies to be assessed in each examination are set out in the module descriptions. ³Where 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) ¹A **written examination** is a supervised examination wherein students are expected to demonstrate, within a specified amount of time and using predefined methods and resources, their ability to identify problems, find solution strategies and, if required, implement them. ²The duration of written examinations is provided for in § 12(7) of the APSO.
 - b) ¹Depending 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. ²These 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. ³Laboratory assignments may

be complemented by presentations designed to demonstrate a student's communication competency in presenting scholarly work to an audience.

- c) **1Practical credit requirements (tests where applicable)** 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. ²Practical credit requirements are designed to assess a student's factual and detailed knowledge and its application. ³Practical credit requirements may be carried out in writing, orally, or electronically. ⁴They 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) **1A report** is a written record and summary of a learning process for the purpose of presenting the acquired knowledge in a structured way and analyzing the results in the context of a module. ²Students are expected to demonstrate that they have understood all essential aspects and are able to present them in writing. ³Reports may include excursion reports, internship reports, work reports, etc. ⁴The written report may be complemented by a presentation for the purpose of assessing the student's communication competency in presenting scholarly work to an audience.
- e) **1Project work** is designed to reach, in several phases (initiation, problem definition, role assignment, idea generation, criteria development, decision, implementation, presentation, written evaluation), the defined objective of a project assignment within a given period of time and using suitable instruments. ²In addition, project work may include a presentation or a subject-specific discussion in order to assess a student's communication competency in presenting scholarly work to an audience. ³It may also encompass design sketches, drawings, plans, models, objects, simulations, or documentation.
- f) **1A research paper** is a written assignment in which students work independently on solving complex scholarly or scholarly/application-oriented problems, using the scientific methods of the relevant discipline. ²Students 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. ³Research papers, differing in their requirement standards, may take the form of a conceptual framework/theory paper [Thesepapier], abstract, term paper, seminar paper, etc. ⁴The research paper may be complemented by a presentation and/or a colloquium for the purpose of assessing the student's communication competency in presenting scholarly work to an audience.
- g) **1A presentation** is a systematic and structured oral performance supported by suitable audio-visual equipment (such as projector, slides, posters, videos) for the purpose of demonstrating and summarizing specific issues or results and paring complex problems down to their essential core. ²In 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. ³In 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 the subject area. ⁴The presentation may be complemented by a brief written précis.
- h) **1An oral examination** is a timed, graded discussion on relevant topics and specific questions to be answered. ²In oral examinations students are expected to demonstrate that they have understood the central concepts of the subject matter

covered by the exam and are able to apply them to specific problems. ³The duration of the examination is regulated in § 13(2) of the APSO.

- i) ¹A **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. ²Students are required to explain the reasons for selecting the works included, their relevance for their learning progress and the achievement of the defined learning outcomes. ³With the learning portfolio, students are expected to demonstrate that they have taken active responsibility for their learning process. ⁴Depending on the module description, types of independent study assessment in a learning portfolio may include, in particular, application-oriented assignments, web pages, weblogs, bibliographies, analyses, conceptual framework/theory papers, as well as the graphic representation of facts or problems. ⁵A subject-specific final oral discussion for the purpose of reflection and based on the content of the learning portfolio may also take place.
 - j) ¹The **parcours examination** consists of several components. ²Unlike a module examination component, parcours exam components are administered in sequence and completed in a specific time frame and location. ³Parcours components entail various types of examination, which together evaluate the competency profile of the module as a whole. ⁴Possible types of examination in parcours components may include those listed in g) and h) in combination with a practical requirement. ⁵The total duration of the parcours examination with all its components is indicated in the module catalog.
- (2) ¹The module examinations will, as a rule, be taken concurrently with the degree program. ²The type and duration of module examinations is stipulated in Appendix 1. ³For any changes to the stipulated module provisions, § 12(8) of the APSO applies. ⁴The assessment of the module examination is governed by § 17 of the APSO. ⁵The 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 in appropriate form no later than at the start of the lecture period of the type of examination to be held.

§ 42

Admission to and Registration for the Master's Examination

- (1) ¹Students enrolled in the master's program Biology are deemed admitted to the module examinations of the master's examination. ²Also considered admitted to individual module examinations are those students who still need to take examinations within the scope of the consecutive bachelor's program.
- (2) ¹Registration requirements for required, required elective, and elective module examinations are stipulated in § 15(1) of the APSO. ²Registration requirements for repeat examinations for failed required, required elective, and elective modules 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 relevant modules according to Section 2;
 2. the module Master's Thesis according to § 46 in the amount of 30 credits and § 46a the module "Scientific Project Planning" in the amount of 5 credits.
- (2) ¹The module examinations are listed in Appendix 1. ²Students must successfully complete 85 credits of required and elective modules. ³Of these, 82 credits must be earned in elective modules in the areas of specialization, and at least 3 credits must be earned in elective modules in the area of "Extradisciplinary Competencies". ⁴At least three of the seven areas of specialization specified in § 37(3) must be selected. ⁵In each area of specialization, at least 20 credits must be earned in elective modules according to Appendix 1. ⁶For each area of specialization chosen, at least 10 credits must be completed in theoretical modules. ⁷The remaining credits can be earned from both theoretical and/or practical modules. ⁸In addition, students have the option to choose a fourth area of specialization or, in accordance with Section 3 (area of qualification), to intensify one of the three areas of specialization chosen in accordance with Section 2 Sentence 2.
- (3) ¹An area of specialization is considered an area of qualification according to Section 2 if at least 70 credits, of which at least 15 credits derive from theoretical modules, have been earned in this area of specialization, and if the topic of the master's thesis, amounting to 30 credits, and the module "Scientific Project Planning" also derive from this area of specialization. ²Examination modules in Appendix 1 marked with * indicate required modules for areas of qualification.

³There is no legal right regarding the choice of modules leading to the area of qualification. ⁴The selection of modules must comply with § 8(2) of the APSO.

§ 44

Repeat Examinations, Failed Examinations

- (1) ¹The 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)

¹Elective modules may require the completion of coursework (pass/fail credits) instead of the examinations set out in § 43(2) Sentence 2. ²In this case, the number of credits to be earned through examinations according to § 43(2) Sentence 2 will be reduced accordingly.

§ 45 a **Multiple Choice Tests**

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

§ 46 **Master's Thesis**

- (1) ¹As part of the master's examination, each student must write a master's thesis as set out in § 18 of the APSO.
- (2) ¹Completion of the master's thesis module, as a rule, is the final examination requirement. ²Upon 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) ¹The period of time between topic determination and submission of the completed thesis must not exceed 6 months. ²The thesis is considered submitted and failed if the student fails to submit it on time without valid reasons, as specified in § 10(7) of the APSO. ³The master's thesis may be written in either the German or the English language.
- (4) ¹The completion of the master's thesis module consists of a scholarly written composition and a presentation on its content. ²The presentation does not affect the grading. ³30 credits are awarded for the master's thesis module.
- (5) ¹If the master's thesis module was not graded as at least "sufficient" (4.0), it may be repeated once with a new topic. ²Students must renew their application to prepare the master's thesis and name the new topic within six weeks of receipt of the grade.

§ 46 a **Scientific Project Planning**

- (1) ¹Students are considered registered for the module "Scientific Project Planning" if they have earned at least 70 credits in the master's program. ²The module examination must have been passed before commencement of the master's thesis.
- (2) ¹The module "Scientific Project Planning" is to be carried out by the prospective supervisor of the master's thesis (according to § 46(1)) and another university instructor of the Technical University of Munich, who is not from the same research group. ²Expert examiners are defined under § 46(1).
- (3) ³The module "Scientific Project Planning" can be completed in German or English.
- (4) ¹As a rule, the duration of the module examination for "Scientific Project Planning" is 60 minutes. ²Students have approx. 20 minutes to present the prospective topic and project plan of their thesis. ³This will be followed by an oral examination extending from the prospective topic of the master's thesis to the area of specialization to which the master's thesis belongs and related areas of knowledge.

- (5) ¹The module “Scientific Project Planning” is deemed successfully completed if it is graded with at least "Sufficient" (4.0). ²If the module “Scientific Project Planning” is failed, § 24(7) of the APSO applies.
- (6) ³A total of 5 credits are awarded for the module “Scientific Project Planning.”

§ 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) ¹The module grade will be determined according to § 17 of the APSO. ²The overall grade for the master’s examination will be calculated as the weighted grade average of the modules according to § 43(2), as well as the master’s thesis and “Scientific Project Planning” modules. ³The grade weights of the individual modules correspond to the credits assigned to each module. ⁴The overall assessment is expressed by the designation pursuant 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) ¹These regulations enter into force on 1 April 2021. ²They apply to all students who commence their studies at the Technical University of Munich as of the winter semester 2021/2022.
- (2) ¹At the same time, the program-specific regulations for the master's degree program in Biology at the Technical University of Munich dated 6 March 2009, as last amended by No. 3 of the collective amending statutes for the appointment of the commission members for the aptitude assessment process for master's degree programs at the TUM School of Life Sciences at the Technical University of Munich dated 1 February 2021, cease to apply. ²Students who commenced their studies at the Technical University of prior to the winter semester 2021/2022 are to complete their studies in accordance with the regulations designated in Sentence 1.

*) This provision concerns the entry into force of the original version of these regulations dated 22 April 2021. The date on which the amendments enter into force is set out in the Amending Statutes.

APPENDIX 1: Examination Modules**

| No. | Module name | Type of instruction SWS | ZV | Sem. | SWS | Credits | Type of Exam | Duration of Exam | Weighting Factor | Language of instruction |
|-----|-------------|-------------------------|----|------|-----|---------|--------------|------------------|------------------|-------------------------|
|-----|-------------|-------------------------|----|------|-----|---------|--------------|------------------|------------------|-------------------------|

Required modules

| | | | | | | | | | | |
|--------|-----------------------------|--|--|--|--|----|----------------|----|--|-----|
| WZ2590 | Master's Thesis | | | | | 30 | Research paper | | | D/E |
| WZ2591 | Scientific Project Planning | | | | | 5 | Oral Exam | 60 | | D/E |

Elective modules: In the required electives area, required elective modules from the following list (not exhaustive) in the amount of 82 credits must be completed: The Examination Board continuously updates the subject catalog of elective modules and publishes the official catalog in TUMonline no later than the start of the semester.

| No. | Module name | Type of instruction SWS | Module category | Sem. | SWS | Credits | Type of Exam | Duration of Exam | Weighting Factor | Language of instruction |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|---------------|-----|---------|----------------------------|------------------|------------------|-------------------------|
| Biochemistry and Cell Biology | | | | | | | | | | |
| WZ2441 | Forschungspraktikum Chemie der Biopolymere/ Research Project Biopolymer Chemistry | PR | P | WiSe SoSe | 10 | 10 | Lab | | | D/E |
| WZ2138 | Kompaktkurs Membranen und Membranproteine/ Membranes and Membrane Proteins, Exercises | PR | P | SoSe | 3 | 3 | Lab | | | D/E |
| WZ2621 | Modellierung biologischer Makromoleküle/ Modelling of Biological Macromolecules INFO: Not 2019W. Info zu 2020S i.L.d.J. | V 2 + PR 3 | T | WiSe | 5 | 6 | Oral Exam | 30 | | D/E |
| WZ2549 | Peptid-/Proteinsynthese und Peptide in Biomedizin und Proteinmissfaltungskrankheiten/ Peptide/Protein Synthesis and Peptides in Biomedicine and | V 1 + S 2 | T | WiSe, SoSe | 3 | 4 | Written exam, presentation | 60, 45 | 1:1 | D/E |

| | | | | | | | | | | |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---|---------------|-----|----|---------------------------|----|-----|-----|
| | Protein Misfolding Diseases (ab 2019S inkl.) | | | | | | | | | |
| WZ2016 | Proteine: Struktur, Funktion und Engineering/ Proteins: Structure, Function, and Engineering | V | T | WiSe | 2 | 3 | Written exam | 90 | | D |
| WZ2580 | Protein-Engineering/ Protein Engineering | V 2 + V 1 | T | SoSe | 3 | 5 | Written exam | 90 | | D |
| WZ2439 | Proteomics: analytische Grundlagen und biomedizinische Anwendungen / Proteomics: Analytical Basics and Biomedical Applications | V 2 + Ü 3 | T | WiSe, SoSe | 5 | 6 | Written exam, lab | 90 | 3:2 | D/E |
| WZ2388 | Techniken der Zellbiologie / Techniques in Cell Biology | V 2 + S 1 | T | SoSe | 3 | 5 | Written exam | 90 | | D/E |
| MA9613 | Statistical Computing and Data Analysis / Statistical Computing and Data Analysis | V 2 + Ü 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 60 | | E |
| | Genetics | | | | | | | | | |
| WZ0630 | Analysis of Epigenomic Data / Analysis of Epigenomic Data | PR | P | WiSe, SoSe | 10 | 10 | Report | | | E |
| WZ2759 | Blutbildende Stammzellen als Modell für somatische Stammzellen / Blood-forming stem cells as a model for somatic stem cells | V 1 + S 0,5 | T | WiSe, SoSe | 1.5 | 5 | Presentation, Homework | 30 | 2:3 | D |
| WZ1588 | Evolutionary Genetics of Plant and Microorganisms / Evolutionary Genetics of Plant and Microorganisms | V 2 + Ü 2 | T | WiSe | 4 | 5 | Oral Exam | 30 | | E |
| WZ2620 | Applications of Evolutionary Theory in Agriculture: Population Genomics of Crop Pathogens and Disease Management / Applications of Evolutionary Theory in Agriculture | V 2 + Ü 2 | T | SoSe | 4 | 5 | Oral Exam | 30 | | E |

| | | | | | | | | | | |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---|---------------|----|----|----------------------------|--------|-----|-----|
| WZ0005 | Fluoreszenz Lifetime Imaging - Theorie und Funktion / Fluorescence Lifetime Imaging - Theory and Function | Ü 1 | T | WiSe, SoSe | 1 | 1 | Oral Exam | 45 | | D/E |
| WZ2525 | Forschungspraktikum Experimentelle Genetik der Säugetiere / Research Project Experimental Genetics of Mammals | PR | P | WiSe, SoSe | 10 | 10 | Lab | 15 | 3:1 | D/E |
| WZme2670 | Innovative Ansätze in der viralen Gentechnologie / Innovative approaches in viral gene technology | S 2 | T | WiSe, SoSe | 2 | 5 | Presentation, Homework | 30 | 2:1 | E |
| WZ2420 | Molekulare Genetik / Molecular Genetics | V 2 | T | SoSe | 2 | 3 | Written exam | 60 | | D/E |
| WZ2490 | Neurogenetische Grundlagen von neurologischen und psychiatrischen Erkrankungen / Neurogenetics: The Pathoetiology of the Neurological and Psychiatric Diseases | V 4 | T | WiSe + SoSe ° | 4 | 6 | Written exam | 60 | | D/E |
| WZ2581 | Pflanzenbiotechnologie / Plant Biotechnology | V 2 + S 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 90 | | E |
| WZ1185 | Plant Epigenetics and Epigenomics / Plant Epigenetics and Epigenomics | V 2 + PR 1 + S 1 | T | WiSe, SoSe | 4 | 5 | presentation | 30 | | E |
| MA9613 | Statistical Computing and Data Analysis / Statistical Computing and Data Analysis | V 2 + Ü 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 60 | | E |
| WZ2763 | Transcriptional and Posttranscriptional Regulation in Eukaryotes / Transcriptional and Posttranscriptional Regulation in Eukaryotes | V 3 + S 2 | T | WiSe | 5 | 5 | Written exam, presentation | 60, 30 | 3:2 | E |

| Medical Biology | | | | | | | | | | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---|---------------|-----|----|-------------------------------|--------|-----|-----|
| WZ2759 | Blutbildende Stammzellen als Modell für somatische Stammzellen / Blood-forming stem cells as a model for somatic stem cells | V 1 + S 0,5 | T | WiSe, SoSe | 1,5 | 5 | Presentation , Homework | 30 | 2:3 | D/E |
| WZ2656 2 | Entwicklung von Impfstoffen gegen Infektionskrankheiten / Development of vaccines against infectious diseases | S 2 | T | WiSe, SoSe | 2 | 5 | Presentation , Homework | 40 | 1:1 | D |
| WZ2697 | Forschungspraktikum Analyse von Hochdurchsatz-Daten in der biomedizinischen Forschung / Research Project Analysis of High-Throuput Data in Biomedical Research | PR | P | WiSe, SoSe | 10 | 10 | Lab | | | D/E |
| WZme2 677 | Forschungspraktikum blutbildender Stammzellen / Research Project blood-forming stem cells | PR | P | WiSe, SoSe | 10 | 10 | Lab | 30 | 7:3 | D/E |
| WZ2411 | Immunologie 2 / Immunology 2 | V 2 + PR 9 | P | WiSe | 11 | 10 | Written exam, lab | 60, 10 | 1:2 | D/E |
| WZme2 670 | Innovative Ansätze in der viralen Gentechnologie / Innovative approaches in viral gene technology | S 2 | T | WiSe, SoSe | 2 | 5 | Presentation , Homework | 30 | 2:1 | E |
| WZ2649 | Molekulare Onkologie 2 / Molecular Oncology 2 | S 2 | T | WiSe, SoSe | 2 | 5 | practical credit | | | D |
| WZ2648 | Molekulare Onkologie / Molecular Oncology | V 2 | T | WiSe, SoSe | 2 | 5 | Written exam | 90 | | D/E |
| WZ2453 | Molekulare Pathologie und organspezifische Karzinogenese / Molecular Pathology and organ-specific Carcinogenesis | V 4 | T | WiSe, SoSe | 4 | 6 | Written exam | 120 | | D/E |

| | | | | | | | | | | |
|----------|---------------------------------------------------------------------------------------------------------------------------------|-----------|---|---------------|----|----|----------------------------|---------|-----|-----|
| WZ2427 | Molekulare Zellbiologie der Tumorentstehung / Molecular Cell Biology of Tumorigenesis | V 4 + Ü 1 | T | WiSe + SoSe ° | 5 | 6 | Written exam, presentation | 60, 20 | 2:1 | D/E |
| WZ2413 | Pharmakologie und Toxikologie für Studierende der Biowissenschaften / Pharmacology and Toxicology for Students of Life Sciences | V 2 + S 2 | T | SoSe | 4 | 5 | Written exam | 75 | | D |
| WZme2672 | Research Project in Radiation Biology / Research Project in Radiation Biology | PR | P | WiSe, SoSe | 10 | 10 | Lab | | | E |
| MA9613 | Statistical Computing and Data Analysis / Statistical Computing and Data Analysis | V 2 + Ü 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 60 | | E |
| | Microbiology | | | | | | | | | |
| WZ2626 | Angewandte Mikrobiologie / Applied Microbiology | V 2 + V 1 | T | SoSe | 3 | 5 | Written exam | 60 | | D |
| WZ2451 | Einführung in die Mykopathologie / Introduction to Mycopathology | V 2 | T | WiSe | 2 | 3 | Written exam | 60 | | D |
| WZ2487 | Entwicklung von Starterkulturen / Development of Starter Cultures | V 2 + Ü 3 | T | WiSe + SoSe ° | 5 | 6 | Written or oral exam | 120, 20 | | D/E |
| WZ2375 | Evolution von Krankheitserregern / Evolution of Pathogens | V 2 + Ü 1 | T | SoSe | 3 | 5 | Written exam | 60 | | D |
| WZ2377 | Forschungspraktikum Molekulare Lebensmittelhygiene / Research Project on Food Hygiene | PR | P | WiSe, SoSe | 10 | 10 | Lab | | | D/E |
| WZ2488 | Lebensmittelbiotechnologie / Food Biotechnology | V 2 + S 3 | T | SoSe | 5 | 6 | Written or oral exam | 120, 20 | | D |
| WZ2372 | Mikroorganismen als Krankheitserreger / Pathogenic Microorganisms | V 2 + V 1 | T | WiSe | 3 | 5 | Written exam | 90 | | D |
| WZ2691 | Mikroorganismen in Lebensmitteln / Microorganisms in Food | V 2 + V 1 | T | SoSe | 3 | 5 | Written exam | 60 | | D |

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|--------|-----------------------------------------------------------------------------------------------------------------|------------------------|---|------------------|----|----|----------------------------|--------|-----|-----|
| WZ2556 | Moderne Methoden der mikrobiellen Ökologie / Modern Methods in Microbial Ecology | V 2 + S 3 + PR 5 | T | WiSe + SoSe ° | 10 | 10 | Written exam, lab | 60 | 1:1 | D/E |
| WZ2452 | Moderne Methoden mikrobiologischer Diagnostik / Modern Methods in Microbiological Diagnostics | V 2 | T | SoSe | 2 | 3 | Written exam | 60 | | D |
| WZ1174 | Molekulare Biologie biotechnologisch relevanter Pilze / Molecular Biology of Biotechnological Relevant Fungi | V 2 + S/Ü 2 | T | WiSe | 4 | 5 | Written exam | 60 | | E |
| WZ1818 | Pilzgenetische Übung / Fungal Genetics Exercise | PR | P | WiSe, SoSe | 5 | 5 | Lab | | | D/E |
| WZ2539 | Proseminar Mikrobielle Wirkstoffe / Seminar on Microbial Effectors | S 2 | T | WiSe | 2 | 2 | Oral Exam | 30 | | D/E |
| WZ2625 | Spezielle Mikrobiologie (*) / Advanced Microbiology | V 4 | T | WiSe | 4 | 6 | Written exam | 60 | | D/E |
| MA9613 | Statistical Computing and Data Analysis / Statistical Computing and Data Analysis | V 2 + Ü 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 60 | | E |
| | Ecology | | | | | | | | | |
| WZ1647 | Altlastensanierung / Remediation of Contaminated Sites | V 2 + Ü 2 | T | SoSe | 4 | 5 | Written exam | 120 | | D |
| WZ1172 | Angewandte Fließgewässerrenaturierung / Applied River Restoration | V 2 + Ü 3 | T | SoSe | 4 | 5 | Written exam | 90 | | D |
| WZ6415 | Angewandte Limnologie / Applied Limnology | V 1 + Ü 3 | P | SoSe | 4 | 5 | Oral Exam | 30 | | D/E |
| WZ2047 | Bodenschutz / Soil Protection | V 2 + S 2 | T | WiSe | 4 | 5 | Oral exam, presentation | 20, 15 | 2:1 | D/E |
| WZ2633 | Fokus Ökologie (*) / Focus Ecology (*) | S 2 + Ü 4 | T | WiSe + SoSe ° | 6 | 6 | Written exam | 60 | | D/E |

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|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---|------|---|---|-------------------------------|----|-----|-----|
| WZ1171 | Klimabedingte Herausforderungen für Abwasserbiologie und Ingenieurökologie / Climate Change Related Challenges in Sewage Treatment Biology and Engineering Ecology | V 2 + Ex 1 + S 1 | T | SoSe | 4 | 4 | Written exam | 60 | | D |
| WZ2469 | Limnologie der Fließgewässer / Limnology of Running Waters | V 1 + Ü 3 | P | SoSe | 4 | 5 | Oral Exam | 30 | | D |
| WZ6340 | Ökologischer Feldkurs für Fortgeschrittene: Habitatdynamik, Vegetation und Arthropodenfauna von Alpenflüssen / Advanced Ecological Field Course: : Habitat Dynamics, Vegetation and Arthropods of Alpine Rivers | Ü 6 | P | SoSe | 6 | 5 | Report | | | D |
| WZ4027 | Ökophysiologie der Pflanzen: Forschung an der Schnittstelle zwischen Pflanze und Umwelt / Plant-ecophysiology: research at the plant-environment interface | S 2 + PR 3 | P | SoSe | 5 | 5 | Lab | | | D/E |
| WZ6300 | Ökosystemmanagement und angewandte Renaturierungsökologie / Ecosystem Management and Applied Restoration Ecology | S 4 | T | WiSe | 4 | 5 | Presentation , Homework | 20 | 3:7 | D/E |
| WZ4020 | Pflanzenfunktionen im Klimawandel / Plant Functioning under Climate Change | S 1,25 + V 3,75 | T | WiSe | 5 | 5 | Oral Exam | 20 | | D/E |
| WZ2433 | Populationsbiologie und Naturschutz / Population Biology and Nature Conservation | V 2 + S 2 | T | WiSe | 4 | 5 | Oral Exam | 20 | | D/E |

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|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---|------------|----|----|--------------|-----|--|-----|
| WZ2573 | Spezielle Fragen des Naturschutzes / Advanced Conservation Science | V 2 + S 1 | T | WiSe | 3 | 5 | Written exam | 60 | | D |
| WZ1888 | Spezielle Themen der Philosophie der Natur und der Landschaft: Ästhetiktheorie, Umweltethik, Wissenschaftstheorie der Ökologie / Philosophy of Nature and the Landscape - Advanced Level: Environmental Aesthetic, Environmental Ethic, Philosophy of Ecology | S 2 + PA 1 | T | SoSe | 3 | 5 | Project | | | D |
| MA9613 | Statistical Computing and Data Analysis / Statistical Computing and Data Analysis | V 2 + Ü 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 60 | | E |
| WZ6122 | Übungen zur Vegetation der Erde / Vegetation of the Earth | Ü 5 | P | WiSe, SoSe | 5 | 5 | Report | | | D |
| WZ6121 | Vegetation der Erde / Vegetation of the Earth | V 5 | T | WiSe | 5 | 5 | Oral Exam | 20 | | D |
| WZ2572 | Versuchsplanung (Fortgeschrittenenkurs) / Experimental Design (Advanced Course) | V/S 2 + Ü 4 | P | WiSe, SoSe | 6 | 5 | Written exam | 180 | | D/E |
| | Plant Science | | | | | | | | | |
| WZ2384 | Forschungspraktikum 2 Molekularbiologie der Pflanzen / Research Project 2 on Plant Molecular Biology | PR | P | WiSe | 10 | 10 | Lab | | | D/E |
| WZ2594 | Forschungspraktikum Sekundäre Pflanzeninhaltsstoffe / Research Project Secondary Plant Metabolites | PR | P | WiSe, SoSe | 16 | 10 | Lab | | | E |
| WZ1075 | Herbizide und Pflanzenphysiologie / Herbicides and Plant Physiology | V 2 + Ü 2 | T | SoSe | 4 | 5 | Written exam | 90 | | D/E |

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|--------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---|------------|---|---|-----------------------------|--------|-----|-----|
| WZ1035 | Host-Parasite Interaction / Host-Parasite Interaction | V 1 + S 2 + Ü 2 | T | WiSe | 5 | 5 | Written exam | 90 | | E |
| WZ1589 | Marker-Assisted Selection / Marker-Assisted Selection | V 2 + Ü 2 | T | WiSe | 4 | 5 | Oral Exam | 30 | | E |
| WZ2385 | Molekulare Pflanzenphysiologie - Wasserhaushalt und Stoffwechsel / Molecular Plant Physiology - Plant Water Relations and Metabolism | V 2 + S 2 | T | SoSe | 4 | 5 | written exam + presentation | 60, 45 | 1:1 | D/E |
| WZ2371 | Molekulare Pflanzenphysiologie - abiotische Stressfaktoren / Molecular Plant Physiology - Responses to Abiotic Stress / Molecular Plant Physiology 2 | V 2 + S 2 | T | WiSe | 4 | 5 | written exam + presentation | 60, 45 | 1:2 | |
| WZ2581 | Pflanzenbiotechnologie / Plant Biotechnology | V 2 + S 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 90 | | E |
| WZ2381 | Pflanzensystembiologie / Plant Systems Biology (Lecture and Seminar) | V 2 + S 2 | T | WiSe, SoSe | 4 | 5 | Report + presentation | 30 | 7:3 | D/E |
| WZ1584 | Quantitative Genetics and Selection / Quantitative Genetics and Selection | V 2 + Ü 2 | T | WiSe | 4 | 5 | Written exam | 90 | | E |
| WZ2689 | Redox-Biochemie der Pflanzen / Plant Redox-Biochemistry | V 1 + PR 2 | T | WiSe, SoSe | 3 | 3 | Lab | | | D |
| WZ1663 | Secondary Plant Metabolites and Human Health (Dt.: Bioaktive Pflanzeninhaltsstoffe) / Secondary Plant Metabolites and Human Health | V 5 | T | WiSe, SoSe | 4 | 5 | Written exam, lab | 180 | 9:1 | E |
| MA9613 | Statistical Computing and Data Analysis / Statistical Computing and Data Analysis | V 2 + Ü 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 60 | | E |

| Animal Sciences | | | | | | | | | | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|---|---------------|-----|----|-----------------------------|---------|-----|-----|
| WZ2460 | Aktuelle Themen der Neurobiologie / Current Topics in Neurobiology | S 4 | T | WiSe + SoSe ° | 4 | 5 | presentation | 30 | | E |
| WZ3097 | Basics in Chronobiology / Basics in Chronobiology | V 2 + S 2 | T | WiSe + SoSe° | 4 | 5 | written exam + presentation | 90, 45 | 7:3 | E |
| WZ4218 | Bienenkunde / Apiology | S 3 + PR/Ex | T | SoSe | 2 | 3 | Written exam, Project | 60 | 7:3 | D |
| WZ2664 | Biotechnologie der Tiere 1 / Animal Biotechnology 1 | V 2 + PR 2 | T | WiSe | 4 | 5 | Written + oral exam | 90, 20 | 3:2 | D/E |
| WZ2753 | Blockpraktikum: Neurobiologie am intakten Organismus / Course block: Neurobiology of Intact Animals | PR | P | WiSe, SoSe | 5 | 5 | Lab | | | D/E |
| WZ2759 | Blutbildende Stammzellen als Modell für somatische Stammzellen / Blood-forming stem cells as a model for somatic stem cells | V 1 + S 0,5 | T | WiSe, SoSe | 1,5 | 5 | Presentation, Homework | 30 | 2:3 | D |
| WZ2693 | Cognitive Neuroscience / Cognitive Neuroscience | V 2 | T | SoSe | 2 | 3 | Written exam | 60 | | E |
| WZ2404 | Einführung in die Kultivierung von Säugetierzellen / Introduction to Mammalian Cell Culture | S 2 + PR 3 | P | WiSe, SoSe | 5 | 5 | written exam + presentation | 150, 40 | 1:1 | D/E |
| WZ2687 | Forschungspraktikum Neuronale Netzwerke und Verhalten / Research project Mapping neural circuits underpinning behavior | PR | P | WiSe, SoSe | 10 | 10 | Lab | | | D/E |
| WZ2457 | Neurobiologie / Neurobiology | V 2 | T | WiSe | 2 | 3 | Written exam | 90 | | D |
| WZ2405 | Phylogenie und Zoologie der Vertebraten / Phylogeny and Zoology of Vertebrates | V 2 + S 2 | T | WiSe | 4 | 5 | Written exam | 90 | | D |

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|--------|------------------------------------------------------------------------------------------------------------------|---------------|---|---------------|---|---|--------------|----|--|-----|
| WZ0033 | Physiologie des Wachstums, der Reproduktion und der Laktation / Physiology of Growth, Reproduction and Lactation | V 2 + VI 2 | T | WiSe | 4 | 5 | Oral Exam | 30 | | D/E |
| WZ2682 | Sensory and Behavioral Neurogenetics / Neurogenetik neuronaler Verarbeitung und Verhalten | V 3 + Ü 2 | T | SoSe | 5 | 5 | Written exam | 90 | | E |
| MA9613 | Statistical Computing and Data Analysis / Statistical Computing and Data Analysis | V 2 + Ü 1 | T | WiSe, SoSe | 3 | 5 | Written exam | 60 | | E |

Explanations:

Sem. = semester; SWS = *Semesterwochenstunden*/weekly hours per semester; V = *Vorlesung*/lecture; Ü exercise module= *Übung*/exercise; VI = lecture with exercise; P = *Praktikum*/internship; S = Seminar; ZV = admissions requirement (see § 43 (1))

K = *Klausur*/written exam; LL = *Laborleistung*/lab assignment; LP = *Lernportfolio*/portfolio, B = *Bericht*/report; M = *mündliche Prüfung*/oral exam; W = *wissenschaftliche Ausarbeitung*/research paper; Pr = *Präsentation*/presentation; PA = *Projektarbeit*/project, T = *Theorieorientiert*/theoretical; P = *Praxis orientiert*/practical; WiSe = Winter semester; SoSe = Summer semester

In the column "Duration of examination", the duration of written and oral examinations is specified in minutes.

° These modules and the corresponding module examination components extend over a minimum of two semesters.

* These modules are required for the respective area of qualification.

**During the School transition period, module numbers may change; the old and new module numbers are listed side by side in TUMonline (on the program's website).

APPENDIX 2: Aptitude Assessment

Program-Specific Examination and Academic Regulations for the Master's Program Biology at the Technical University of Munich

1. Purpose of the Process

¹Eligibility for the master's degree program Biology, in addition to the requirements specified in § 36(1) Nos. 1 and 2, requires proof of aptitude as set out in § 36(1) No. 3 in accordance with the following provisions. ²The special qualifications and skills of the candidates should correspond to the field of Biology. ³The individual aptitude parameters are:

- 1.1 ability to conduct scholarly and/or basic and methodologically sound research,
- 1.2 specialist knowledge from a bachelor's degree program in the field of life sciences,
- 1.3 ability to solve complex and difficult problems,
- 1.4 ability to combine scientific knowledge with practical application,
- 1.5 ability to observe analytically.

2. Aptitude Assessment Process

2.1 Aptitude assessment is conducted semi-annually by the TUM School of Life Sciences.

2.2 ¹Applications to the aptitude assessment process for the winter semester must be submitted to the Technical University of Munich together with the documents listed in 2.3.1. through 2.3.5. and in § 36(1) No. 2 no later than 31 May and for the summer semester by 15 January (absolute deadlines) using the online application procedure.

2.3 The application must include:

- 2.3.1 a transcript of records containing modules amounting to at least 120 credits; the transcript of records must be issued by the relevant examination authority or academic programs office;
- 2.3.2 a curricular analysis based on the Transcript of Records must be completed as part of the online application process; especially for modules that cannot be clearly attributed to the two academic subject areas (see 5.1.1 a) based on their titles, we recommend uploading the corresponding course content (e.g. module descriptions).
- 2.3.3 a comprehensive curriculum vitae formatted as a table,
- 2.3.4 a written essay of at most one to two A4 pages giving the reasons for selecting the degree program in Biology at the Technical University of Munich in which applicants explain their exceptional motivation on the basis of which they consider themselves particularly suited for the master's degree program Biology at the Technical University of Munich; the applicant's exceptional motivation is to be demonstrated, for example by providing details on program-related vocational training, internships, stays abroad, or program-related further education, as well as outstanding academic achievements (awards, prizes or scientific publications), beyond the attendance and course requirements of the bachelor's program. This is to be supported by material provided as appendices, as appropriate.

- 2.3.5 a declaration that the essay 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 ¹Aptitude assessment is administered by the Aptitude Assessment Commission and the Selection Committees. ²The 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. Selection Committees are to conduct the assessment process in accordance with Nr. 5 subject to Nr. 3.2 Sentence 11.
- 3.2 ¹The Commission consists of five members, one of whom is the Academic Program Director. ²The other four members of the Commission are appointed by the Dean, in consultation with the Vice Dean of Academic Affairs, from among the authorized examiners of the TUM School of Life Sciences, who are members of the degree program faculty; each of the four members is to have a deputy. ³Commission members must be university educators within the meaning of the Bavarian Act on Higher Education Staff (BayHSchPG). ⁴The Departmental Student Council has the right to name a student representative to serve on the Commission in an advisory capacity. ⁶The Academic Program Director serves as chair of the Commission. ⁷Procedures are governed by § 30 of the TUM Charter as last amended. ⁸The term in office of Commission members is 4 years. ⁹Extensions of the term of office and reappointments are possible. ¹⁰Urgent 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. ¹¹The Campus Office supports the Commission and the Selection Committees; 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 Committees from among the commissioners and assigning them to applicants.
- 3.3 ¹Each 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*]. ²At least one member must be a university educator within the meaning of the Bavarian Act on Higher Education Staff (BayHSchPG). ³It is permissible to serve concurrently on both the Aptitude Assessment Commission and a Selection Committee. ⁴Members of the Committee are appointed by the Commission for a term of 1 year; Nr. 3.2 Sentence 9 applies accordingly. ⁵Different 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.

4.2¹ Applicants who have fulfilled the requirements according to No. 4.1 will be assessed according to No. 5. ²Applicants not suited to 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 Stage 1

5.1.1 ¹It will be assessed, on the basis of the written application documents required under No. 2.3, whether or not an applicant is suited to the program as set out in No. 1 (First stage of the aptitude assessment process). ²The student's application documents will be evaluated on a scale ranging from 0 to 100 points, 0 being the worst and 100 the best possible result.

The following criteria will be applied to the evaluation:

a) Discipline-Specific Skills and Qualifications

¹The curricular analysis is conducted on the basis of competencies, rather than a schematic comparison of modules. ²The analysis is based on the fundamental subject groups listed in the following table of the bachelor's program in Biology or Life Sciences Biology at the Technical University of Munich. ³Specialist knowledge from a bachelor's degree program in Biology or a related program amounting to at least 115 credits is required. Maximum points are earned by having at least 30 credits in natural scientific fundamentals and at least 85 credits in life sciences:

| Academic subject area | Credits TUM |
|------------------------------------------------------------------------------|-------------|
| Natural scientific fundamentals (w/o life sciences) | 30 |
| Life sciences (lectures, seminars, exercises, practical courses/internships) | 85 |

⁴If it is established that there are no significant differences in the competencies acquired (learning outcomes) to the relevant degree program at TUM, a maximum of 45 points will be awarded. ⁵The number of points is calculated by dividing the total number of credits from the modules/grade reports of courses and exams passed from the applicant's bachelor's degree program included in the fundamental group of subjects of the bachelor's degree program in Biology by the quotient **115/45**, whereby 45 is the greatest possible number of points. ⁶If this value is not a whole number, it will be rounded up in the candidate's favor.

b) Grade

¹The modules considered by the Selection Committee for the discipline-specific qualification according to 5.1.1. are used to calculate a credit-weighted average grade as follows:

$$\frac{\sum (\text{Note} * \text{Credits})}{\sum \text{Credits}}$$

²If the number of credits earned exceeds the minimum required in the respective subject group, the last module required to achieve this number of credits will be included. ³In the process of determining grades, only the first digit after the decimal point is taken into account. All other digits are dropped without rounding. ⁴For every decimal that the calculated average of these examination grades (from discipline-specific subject groups) is better than 4.0, the applicant is awarded 1.3 points. ⁵The maximum number of points is 40. ⁶Negative points will not be awarded. ⁷For degrees awarded in other countries, the grade is converted in accordance with the provisions of the APSO of the Technical University of Munich and rounded to one decimal place.

c) Letter of Motivation

¹The applicant's written statement will be evaluated by the two Selection Committee members independently and graded on a scale of 0 – 15 points. ²The content will be assessed and awarded weighted points using the following criteria:

- (1) exceptional motivation for the Life Sciences program at TUM; this can be substantiated, for example, by a structured explanation of the connections between personal interests and the content of the program (maximum 3 points),
- (2) convincing reasons for the applicant's suitability for the master's degree program using arguments and meaningful examples (maximum 3 points),
- (3) interest in advances in bioscientific knowledge and applications derived from them (maximum 3 points),
- (4) professional training specific to the program of study, such as completion of BTA or MTA training, or outstanding academic achievements (awards, prizes, scientific publications) of the applicant that indicate a special research and learning capacity (maximum 3 points).
- (5) Examples from the previous program of study about the applicant's own improvements, observations, initiatives (Analytical Observational Skills) (maximum 3 points).

³Committee members independently assess each of the criteria with equal weighting.

⁴The points total will be calculated as the arithmetic mean of the individual assessments, rounded up to the nearest full point.

5.1.2 ¹The points total in the first stage will be calculated as the sum of the individual evaluations. ²Decimal places must be rounded up.

5.1.3 ¹Applicants with at least 75 points will be deemed suitable. ²Where it has been determined that the 115 discipline-specific credits have not been attained, participation in Stage 2 is not possible. ³If a maximum of 30 of the discipline-specific credits required under 5.1.1 a) are missing, the Selection Committee will require that fundamentals modules from the bachelor's degree program in Life Sciences Biology be completed to the extent of the missing 30 credits, so that a total of 115 credits are earned. ⁴These fundamentals exams must be successfully completed in the first year of study. ⁵Failed fundamentals exams may be repeated only once and at the next examination date. ⁶The Examination Board may make admission to individual module examinations of the program dependent on the successful completion of these fundamentals exam.

5.1.4 Applicants who have achieved less than 65 points fail the aptitude assessment.

5.2 Second Stage

5.2.1 ¹The remaining applicants will be invited to an aptitude assessment interview. ²In the second stage of 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. ³Interview appointments will be announced at least one week in advance. ⁴Time slots for interviews must be scheduled before expiration of the application deadline. ⁵The interview appointment must be kept by the applicant. ⁶Conducting the aptitude assessment interview via video conference is possible upon a student's well-founded request. ⁷The applicant bears the risk in the event of any technical problems, unless these are attributable to the Technical University of Munich. ⁸If 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.

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

1. Interest in the master's degree program in Biology (15 points); a criterion can be, for example, critical reflection on one's own talents and competencies and their connection with the goals and content of the intended master's degree program,
2. Ability to solve discipline-related problems (25 points); this can be demonstrated, for example, by the effortless understanding of discipline-specific tasks and the proposal of solution strategies within the scope of competencies acquired in studies to date,
3. Interest in problems of application (20 points); this can be demonstrated, for example, by the ability to name problems that can be derived from theoretical knowledge and practical experience and the ability to identify and critically assess possible solutions for practical application,
4. Applicants will be evaluated, for example, on their ability to convincingly demonstrate knowledge using arguments and meaningful examples and appropriately respond to interview questions.

⁴The above topics may cover the documentation submitted in accordance with 2.3. ⁵Any subject-specific academic knowledge that is to be taught in the master's degree program Biology will not affect the decision. ⁶With the applicant's approval, a representative of the student body may sit in on the interview.

5.2.3 ¹The aptitude assessment interview will be conducted by two members of the Selection Committee. ²Committee members independently assess each of the three areas with equal weighting. ³Each member of the committee will grade the result of the interview on a scale from 0 to 85, 0 being the worst and 85 being the best possible result. ⁴The points total will be calculated as the arithmetic mean of the individual evaluations. ⁵Non-vanishing decimal places must be rounded up.

5.2.4 ¹The qualifications demonstrated in the first stage of aptitude assessment will be given equal weighting to the assessment interview for a maximum of 85 points. ²This score results from the sum of the scores determined in the first stage under No. 5.1.1a (subject-specific qualifications) and 5.1.1b (grade).

5.2.5 ¹The overall score of the second stage results from the arithmetic mean of the individual assessments of No. 5.2.2. and the point score from 5.2.4. ²Non-vanishing decimal places must be rounded up. ³Applicants with 65 or more points will be deemed suitable. ⁴Applicants with an overall grade of less than 65 points have failed the aptitude assessment.

5.3 Notification of Results

¹Applicants will be informed of the results of the aptitude assessment through official notification. ²Applicants 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**

¹The 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. ²The 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.