Faculty of Biology and Psychology:

Following the resolution of the Faculty Council of the Faculty of Biology and Psychology on 24.02.2021, the Presidential Board of Georg-August-Universität Göttingen approved the first amendment of the examination and study regulations for the consecutive Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry" on 30.05.2021, in the version published on 28.03.2013 (Official Announcements I no. 14/2013 p. 313) last amended by resolution of the Presidential Board on 12.09.2017 (Official Announcements I No. 46/2017 p. 1180) (§ 44 section 1 sentence 2 NHG in the version contained in the announcement dated 26.02.2007 (Nds. GVBl. p. 69), last amended by Article 4 of the Act dated 16.03.2021 (Nds. GVBl. p. 133); § 37 section 1 sentence 3 no. 5 b) NHG, § 44 section 1 sentence 3 NHG).

Examination and Study Regulations for the consecutive Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry" at the University of Göttingen

§ 1 Scope

(1) The provisions of the "General examination regulations for the Bachelor's and Master's degree programmes as well as other courses and degrees offered at the University of Göttingen (APO) shall apply as amended to the consecutive Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry".

(2) This regulation specifies the further provisions for the completition of the course of studies in the Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry".

§ 2 Objectives of the programme, purpose of the master examination, university degree

(1) The consecutive, research-based Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry" imparts in-depth, specialist knowledge and scientific methods in the fields of "general and applied microbiology", "molecular genetics and microbial cell biology", "cellular and molecular biology of plant-microbe interactions", "structural biology", "biochemistry and biophysics" and "enzyme catalysis and chemical biology".

(2) [1]The Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry" is a consecutive degree programme that is based on the principles of biology

imparted in a corresponding Bachelor's degree programme, enlarges upon them and guarantees sound scientific education. [2]In the research-oriented degree programme, the students acquire knowledge, skills and experience that qualify them to enter the professional realm and embark on doctoral studies. [3]Possible working fields of graduates from the degree programme comprise planning and execution of scientific investigations, vocational and further specialist education, activities in the area of biotechnology, the chemical and pharmaceutical industries, advisory tasks in nature protection and chemical investigation offices, in administration, economy and education, as well as implementation of measures based on biological/biochemical principles in the respective working fields. [4]As part of the academic programme, students should acquire knowledge and skills that qualify them to recognise biological and biochemical tasks, formulate objectively established solutions and appropriately implement them. [5]The master's thesis, which most commonly includes practical laboratory investigations, is intended to demonstrate that students possess a command of the specific technical methodologies and their application to questions of scientific concern.

(3) [1]General and subject-related objectives of the studies are, among others, the acquisition of

- Knowledge in the fields of microbiology and biochemistry, also their methods and procedures;
- Knowledge of scientific methodology and theory, as well as skills that enable training in most diverse working fields;
- The ability to apply experimental methods and to interpret their results appropriately;
- The capability to record, illustrate and evaluate data relevant to biological and biochemical postulations;
- The ability to use and evaluate biological and biochemical literature and other documentation;
- The ability to provide written, oral and graphic illustration of test results.

[2]Besides profound scientific insight, the degree programme conveys interdisciplinary, practice-oriented qualifications in the specialised area of professionalisation. [3]A broad, additional range of elective courses in university-wide key competence modules helps foster personal development and teach social skills. [4]This supports the development of individual engagement in civic society.

(4) The master examination should help in finding whether the examinee has an overview of the correlations of the discipline, possesses the capacity to apply scientific methods and findings and has acquired the in-depth specialised knowledge necessary for embarking upon a profession or doctoral studies.

(5) Once the master examination is passed, the university awards the university degree "Master of Science", abbreviated "M.Sc.".

§ 3 Programme structure

(1) The academic programme starts with the winter semester.

(2) [1]The standard course length is four semesters. [2]The master degree programme cannot be completed part-time.

(3) The academic programme comprises 120 credits (ECTS credits; short form: C), which are distributed as follows:

a) 60 C for the core studies,

b) 30 C for the area of professionalisation, including 12 C for key and

c) 30 C for the master's thesis.

(4) [1]The list of modules, which also contains the module overview within the meaning of § 4 section 1 sentence 1 APO, shall be published separately; it is an integral part of these examination and study regulations. [2]A recommendation for the structure of the degree programme can be found in the enclosed sample curricula (appendix I).

§ 4 Curriculum

(1) [1]The modules of the core studies (60 C) jointly illustrate the scope of microbiology and biochemistry and are oriented towards the qualification objectives mentioned in § 2. [2]The core studies comprises five elective-compulsory modules (three core modules and two advanced modules) with a rating of 12 C respectively.

a) Core modules represent a combination of lecture, seminar and methodical practical course and are used for acquisition of in-depth theoretical and practical knowledge as well as basic methods of the relevant research area.

b) Advanced modules I and II generally consist of a seven-week all-day laboratory practical course. The students should acquire here in-depth knowledge in the planning and execution of scientific experiments in the relevant research area. They get to know the exact documentation of the test executions and results as well as research and consideration of the theoretical principles and already published papers on the relevant topic.

(2) [1]The area of professionalisation (30 C) is used for individual profile development of the student as well as acquisition of key competences. [2]It includes one profile module (12 C), the advanced module III (M.Bio.131, 6 C), and other elective-compulsory modules and elective modules comprising 12 C, offered to acquire the key competences.

a) Profile modules: Module M. Bio.110, another not yet completed core module or, depending on availability, a core module from the biology Master's degree programme "Developmental, Neural, and Behavioral Biology" or the Master's degree programme

"Chemistry", can be attended as a profile module. Instead of a single module, several modules with a total rating of at least 12 C can be completed, but not more than three modules. If several modules are to be completed instead of a single module or if modules in other degree courses are to be completed, this needs authorisation by the examination board, which must be applied for and reasoned by the student. A reason exists if the completion of several modules or those outside the Faculty of Biology and Psychology or the Faculty of Chemistry promotes the study objective.

b) Advanced module III "Scientific project management" is a compulsory module and has a rating of 6 C. It is used for preparation of the master's thesis. The students can improve themselves in illustration of scientific contents by way of presentations as well as project management and research proposals. Advanced module III can be completed only after completion of the advanced modules I and II.

c) Additional elective-compulsory modules comprising 12 C are used to acquire key competences as professional qualifications. In this area, modules can be completed from all of those offered by the Georg-August-Universität, subject to availability. The Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry" also offers its own key competency modules. Students are also entitled to attend the key competency modules offered within the Master's degree programmes "Developmental, Neural, and Behavioral Biology" and "Chemistry".

d) Students unable to present German language skills on at least level B2 of the Common European Reference Framework for Languages must also complete as part of the key competence modules from those offered by the department of German as a foreign language comprising at least 6 C, intended to demonstrate the acquisition of German language skills.

§ 5 Admission to courses with a limited number of participants; Registering and de-registering for modules; teaching and examination language

(1) [1]If there are more registrations for admission to elective-compulsory modules or compulsory modules than there are available places, the registrations will be handled in accordance with the procedure applied by the examination board. [2]In this, students who are approaching completion of their academic degree will be given preferential treatment. [3]In the event that a selection procedure is not defined for a module, admission will be managed according to the principle of 'first come, first served' in the electronic examination management system. [4]Registrations by students for a module with a limited number of places will be given less preferential treatment in the event that these students, during an earlier admission, did not regularly attend the module and in the event that the examination board did not recognise good cause put forward by these students for discontinuing the module. [5]Students who wish to take a module as an elective module

or voluntary additional examination shall also be given subordinate consideration; the examination board may regulate a selection procedure within this group based on the ranking of the average grade determined from previous examination performances.

(2) [1]Registration is compulsory for modules with a limited number of places; it must take place within the period announced by suitable means in the electronic examination management system. [2]Withdrawal without good cause is only possible during the registration period. [3]Registration for a module does not automatically constitute a binding registration for the corresponding module examination; here, a separate registration for the module examination is necessary.

(3) [1]The lectures and examinations in the degree programme are generally offered in English. [2]The examinations for elective and elective-compulsory modules that in exceptional cases are given generally in German will also be held in German; details are specified in the module description.

§ 6 Study advisory service

(1) Initially, study advice shall be provided by degree programme coordination and otherwise by the lecturers involved in the degree programme, or the Dean of Studies in the respective technical faculty.

(2) The Central Student Advisory Office of the university is responsible for the general study advice, especially in inter-faculty questions.

(3) The students should get study advice, especially in the following cases:

- At the start of the programme,
- After failing examinations twice,
- In case of any deviations from the standard course length,
- When changing the course planning, degree programme or university,
- Before an intended semester abroad.
- When selecting the profile module in the case that it is splitted into several parts or is to be completed outside of the Faculty of Biology and Psychology or the Faculty of Chemistry.

§ 7 Examination board

(1) [1]The examination board is comprised of five members, who are named by the group representatives in the Faculty Councils at the Faculty of Biology and Psychology and the Faculty of Chemistry; this includes three members of the professoral group, a member of the staff and a students' representative. [2]At the same time, a deputy is nominated for each member. [3]The

members of the professoral group and the group of staff members shall be appointed from the departments involved in the degree programme; during conferences, the status groups can put proposals for these appointments to the Faculty Council. [4]The tenure of the members is two years, while that of the students' representative is one year. [5]Reappointment is possible. [6]If a member or a representative steps down prematurely, a substitute will be nominated for the remaining tenure. [7]Students' representatives have only advisory vote in the assessment and transfer of credits for examination components.

(2) The examination board shall elect a chairperson and a deputy from the professoral group.

(3) [1]The execution and organisation of the examination procedure is delegated to the Examination Office, without prejudice to the competencies of the dean of studies. [2]It also maintains the examination records. [3]It reports regularly to the faculty on examinations and course lengths. [4]In this case, compliance with the standard course lengths and the distribution of module and current average grades in particular should be itemised.

(4) Day-to-day business may be transferred to the chairperson.

§ 8 Organisation of examinations; implementation of the degree course

(1) [1]Procedural regulations for examination organisation are decided by the Faculty Council upon recommendation of the examination board and announced by the responsible Examination Office. [2]They must be announced to the relevant students in good time and in a suitable form.

(2) [1]Module examinations for compulsory modules must be offered in every semester. [2]Module examinations for elective-compulsory modules should be offered in every semester.

(3) [1]The result of an examination is announced immediately by the examiner to the responsible Examination Office, no later than three working days after assessment of the examination. In most cases, notification will be provided by posting in the electronic examination management system. [2]The assessment must have been completed at the latest two weeks before the following reassessment, so that the failed student can participate in the reassessment without any disadvantages.

(4) [1]The heads of the departments involved in the core modules of the degree programme organise the execution of this degree programme under the responsibility of the Faculty of Biology and Psychology or the Faculty of Chemistry, respectively, and coordinate the contents of the modules; this is without prejudice to the legal rights and obligations of the Dean of Studies. [2]They select a coordinator as well as his or her representative to represent the interests of the degree programme. [3]The Faculty Councils decide on the participation of working groups from outside the Faculty of Biology and Psychology or the Faculty of Chemistry, in the implementation of the degree programme and the inclusion of modules from other faculties; this shall be preceded by a hearing with the professoral group involved in the degree programme.

§ 9 Module examinations: Form of the Examination Components

(1) Besides the examination components allowed according to the provisions of APO, the following subject-specific examination components can be planned: Seminar lecture, protocol and scientific research concept.

(2) A seminar lecture is given on a set general topic by a participant or group of participants in the form of a short written summary and a talk or explanatory presentation in front of the participants in a seminar, which is then assessed by the examiner, i.e. the person providing the seminar.

(3) [1]Candidates are required to keep minutes to document in writing the contributions they made to the planning, implementation and evaluation of the experiments or projects and to keep records of the results in a suitable written form. [2]The protocol will be assessed by the examiner i.e. the person leading the project.

(4) [1]Candidates are required to provide within a prescribed period, in a technically adequate form and in writing the design of a research concept in order to demonstrate the theoretical background to a scientific question, the experimental-methodical design and its practical implementation in answering the defined question based on the current state of research. [2]The research concept will be assessed by the examiner i.e. the person leading the project.

§ 10 Module examinations: Registration and withdrawal

(1) [1]Registration for written examinations must be completed no later than seven days before the examination date. [2]Cancellation without statement of reasons (withdrawal) is possible up to 24 hours before the examination date.

(2) [1]Registration for oral examinations must be completed no later than seven days before the first examination date in the examination period. [2]Withdrawal without good cause is only possible during the registration period.

(3) [1]Registration for examinations to be completed in writing without supervision (e.g. term papers, protocols) must take place up to seven days before the start of the assigned period. [2]Withdrawal without good cause is only possible during the registration period.

(4) [1]The provisions applicable to registration for examination forms in the specific subject will be defined in more detail by the examination board; most commonly, registration will be required up to seven days before the examination date, i.e. the first examination in the examination period. [2]Withdrawal without good cause is only possible during the registration period.

(5) Registrations and withdrawals are made by electronic means only using the electronic examination management system.

§ 11 Repeatability of examination components

(1) [1]Repeat examinations of elective-compulsory modules must be completed within an appropriate period. [2]They must be passed within two semesters after the unsuccessful examination attempt. [3]If the deadline is exceeded, the relevant examination attempt is assessed failed. [4]In the event of important reasons, the examination board can grant appropriate extension of the deadline.

(2) Reassessment of passed examinations in order to improve the grade is not allowed.

§ 12 Admission to the master's thesis

(1) Admission to the master's thesis shall only be granted upon successful completion of the modules in the degree programme totalling at least 78 C, including module M.Bio.131.

(2) [1]Application for admission to the master's thesis must be submitted in text form to the responsible examination board. [2]In addition to proof of the admission requirements according to section 1, the following documents must be enclosed, insofar as these are not stored in the examination administration system:

a) Proposal of topic for the master's thesis,

b) A proposal for the first academic advisor and the second academic advisor,

c) A written confirmation of the first academic advisor and the second academic advisor.

[3]The proposal under sentence 2 letters a) and b), also the evidence as required under sentence 2 letter c) shall not be necessary if the student provides assurance that he or she has been unable to find an academic advisor. [4]In this case, the responsible examination board appoints the advisor and specifies the topic of the master's thesis.

(3) [1]The examination board decides on the admission. [2]This will be rejected if the entry qualifications are not met.

§ 13 Master's thesis

(1) The master's thesis should show that the examinee is in a position to independently process a problem from the research field of the master degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry" according to scientific methods and appropriately interpret and present the scientific findings within a given time period.

(2) Topic, objective and scope of the master's thesis are to be limited such that the deadline for completing the master's thesis can be kept.

(3) [1]The candidate's view should be considered in choosing the topic. [2]The right to suggest the topic does not constitute any legal right. [3]The master's thesis topic is awarded by the examination board that drafts the relevant procedural rules. [4]The time of issue must be recorded.

(4) [1]The master’s thesis is generally supervised by an authorised examiner of the degree programme. [2]In addition to the authorised examiners appointed by the Faculty Council, the examination board may appoint suitable people in the sense of § 11 APO as academic advisors and examiners for the master’s thesis, depending on the individual case.

(5) [1]26 weeks are provided to complete the master’s thesis. [2]This begins with the approval of the topic by the examination board. [3]Upon application of the candidate, the examination board can extend the deadline for submitting the thesis by a maximum of four weeks in the event of an important reason that cannot be attributed to the candidate. [4]An important reason normally exists in case of illness that is to be notified immediately and established by producing a medical certificate. [5]A statement by the first academic adviser must be included with the application according to sentence 3 in the event that the reason for the extension is lined to the topic on hand or the procedure of processing.

(6) [1]The topic can be returned only once and only within the first ten weeks of the time allotted for completing the thesis. [2]A new topic should be promptly agreed, at the latest within four weeks. [3]In the case of repeating the master’s thesis, the topic may be returned only if the examinee has not resorted to this option in the first examination attempt.

(7) [1]The master’s thesis must be written in English. [2]Contrary to sentence 1 and subject to application, the master’s thesis can be written in German; in this case a summary must be enclosed in the English language. [3]An application under sentence 2 can only be approved if the advisor selected has a sufficient grasp of the examination language.

(8) [1]The master's thesis must be submitted within the deadline to the responsible examination office in single copy in writing as well as in supplementary text form in the format of a generally common word processing programme or in PDF format (unprotected); the submission is usually made by uploading to the examination administration system. [2]The time of submission must be recorded. [3]While submitting the master's thesis, the candidate should declare in writing,

a) that he or she has written the thesis independently and has not used any sources or tools other than those specified, and
b) that the written version of the master's thesis and the supplementary version submitted in text form are the same.

(9) [1]The Examination Office forwards the master’s thesis to the first advisor and the second advisor as evaluators. [2]Each evaluator gives a grade.

(10) The duration of the application procedure should not exceed six weeks.

§ 14 Assessment of master’s thesis

[1]The grade of the master’s thesis is calculated as the arithmetic mean of the assessment of both reviewers. [2]If the difference is at least 1.1 or an assessment is "insufficient", but the other is

"sufficient" or higher, a third reviewer will be appointed by the responsible examination board for the assessment of the master's thesis. [3]He or she may decide on one of the previous assessments or on an assessment lying in between.

§ 15 Overall result, definitive failing and distinction

(1) The master examination is passed, if at least 120 C were acquired and all of the required module examinations as well as the master's thesis have been passed.

(2) [1]The right to be examined, in addition to the cases specified under APO, shall lapse definitively in the following cases:

a) If by the end of the 4th subject semester, fewer than 60 C have been acquired or

a) If by the end of the 8th subject semester all credits that are required to pass the master examination have not been acquired.

[2]In this case, the master examination is regarded as definitively failed. [3]Exceeding the deadlines mentioned in sentence 1 is allowed if the student is not responsible for missing the deadline. [4]The examination board decides on this upon application by the student.

(3) In calculating the grade point average for the master examination, the assessments

a) of modules completed in the area of key competences and

b) on application also the profile module

shall be disregarded by converting graded module examinations into ungraded module examinations; the application according to letter b) must be made by no later than before issue of the transcript of records; conversion is no longer possible once the grades have been posted in the electronic examination management system.

(4) The overall result "with distinction" is awarded if the master's thesis has been assessed with 1.0 and the grade point average of the remaining examination components is at least 1.1.

§ 16 Entry into force; interim regulations

(1) This regulation enters into force following its promulgation in the Official Announcements I of Georg-August-Universität Göttingen as per 01.10.2017.

(2) At the same time, the Examination and Study Regulations for the consecutive Master's degree programme "Microbiology and Biochemistry" in the version published on 25.09.2013 (Official Announcements I no. 42/2013 p. 1688), last amended by resolution of the Presidential Board on 20.09.2016 (Official Announcements I No. 50/2016 p. 1311), shall be rendered ineffective.

(3) [1]Students who commenced their academic programme before these examinations and study regulations came into force and since then have been enrolled without interruption in the consecutive Master's degree programme "Microbiology and Biochemistry" will, subject to

application, be examined based on the provisions of the regulations defined in section 2; this application must be placed within one semester following this regulation coming into force. [2]In the event that upon application according to sentence 1, the regulations according to section 2 shall apply, this shall not apply to the catalogue of modules and the Module Handbook for examinations that remain to be taken, unless preventing a breach of trust with a student would necessitate a different decision by the examination board. [3]This decision is possible especially in the cases, in which a module examination can be retaken or a compulsory module was changed substantially or removed. [4]The examination board may introduce general regulations for these cases. [5]Examinations held based on the provisions of the regulations according to section 2 shall be conducted for the last time in the summer semester 2021.

(4) [1]Students who commenced their academic programme before an amendment to these examinations and study regulations came into force and since then have been enrolled without interruption in the consecutive Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry" will, subject to application, be examined based on the provisions of the regulations before the version containing this amendment came into force; this application must be placed within one semester following this amendment coming into force. [2]In the event that upon application, the examination and study regulations according to sentence 1 shall apply in the version in place before the amendment to the regulations came into force, this shall not apply to module overviews and the module descriptions for examinations that remain to be taken, unless preventing a breach of trust with a student would necessitate a different decision by the examination board. [3]This decision is possible especially in the cases, in which a module examination can be retaken or a compulsory module was changed substantially or removed. [4]The examination board may introduce general regulations for these cases. [5]Examinations held on the basis of regulations in place before an amended version came into force shall be conducted for the last time in the fourth semester following such time as the amendment came into force.

Appendix I Sample curricula

There are no explicitly designated focuses defined in the Master's degree programme "Molecular Life Sciences: Microbiology, Biotechnology and Biochemistry". The students acquire specialisation by selecting advanced modules that serve as preparation for the master's thesis.

a.

Sem. **Σ C**	**Core studies**		**Area of professionalisation (incl. key competences)**	
	Module	**Module**	**Module**	**Module**
1. **Σ 30 C**	M.Bio.101 "General and applied microbiology" (core module) 12 C *Written examination*	M.Bio.102 "Molecular genetics and microbial cell biology" (core module) 12 C *Written examination and seminar lecture*	M.Bio.157 "Biochemistry and biophysics" (KC module) 3 C *Written examination*	M.Bio.150 "Industry excursions" (KC module) 3 C
2. **Σ 30 C**	M.Bio.104 "Cellular and molecular biology of plant-microbe interactions" (core module) 12 C *Written examination*	M.Bio.112 "Molecular genetics and microbial cell biology" (advanced module I) 12 C *Protocol*	M.Bio.394 "Frontiers in Neurodevelopment" (KC module) 6 C *Written examination*	
3. **Σ 30 C**		M.Bio.124 "Cellular and molecular biology of plant-microbe interactions" (advanced module II) 12 C *Oral examination*	M.Bio.131 "Scientific project management" (advanced module III) 6 C *Oral examination*	M.Bio.323 "Introduction to Bayesian Statistics and Information Theory" (profile module) 12 C *Seminar lecture, written examination*
4. **Σ 30 C**	Master's thesis in the field of "Molecular genetics and microbial cell biology"			
Σ 120 C	**60 C (+30 C)**		**30 C**	

b.

Sem. **Σ C**	**Core studies**		**Area of professionalisation (incl. key competences)**	
	Module	**Module**	**Module**	**Module**
1. **Σ 30 C**	M.Bio.102 "Molecular genetics and microbial cell biology" (core module) 12 C *Written examination and seminar lecture*	M.Bio.106 "Structural biochemistry" (core module) 12 C *Written examination and protocol*	M.Bio.149 "Planning and organization of industry excursions" (KC module) 6 C *Presentation*	M.Bio.150 "Industry excursions" (KC module) 3 C *Protocol*
2. **Σ 30 C**	M.Bio.107 "Biochemistry and Biophysics" (core module) 12 C *Written examination and protocol*	M.Bio.106 "Structural biochemistry" (profile module) 12 C *Written examination and protocol*	M.Bio.144 "Cellular and molecular biology of plant-microbe interactions" (KC module) 3 C *Written examination*	SK.Bio.306 "LaTeX for students of biology" (KC module) 3 C *Term paper*
3. **Σ 30 C**	M.Bio.116 "Structural biochemistry" (advanced module I) 12 C *Oral examination*	M.Bio.127 "Biochemistry and Biophysics" (advanced module II) 12 C *Oral examination*	M.Bio.131 "Scientific project management" (advanced module III) 6 C *Oral examination*	
4. **Σ 30 C**	Master's thesis in the field of "Biochemistry and biophysics"			
Σ 120 C	**60 C (+30 C)**		**30 C**	