

Study Regulations Governing the Single-Subject Master's Degree Programme in Biophysics

17 February 2022

Note: This translation is provided for information purposes only. In the event of any discrepancy between the translation and the original German version published in the Official Bulletin (*Dienstblatt der Hochschulen des Saarlandes*), the provisions of the latter shall take precedence.

Pursuant to Section 60 of the Saarland Higher Education Institutions Act (SHSG) of 30 November 2016 (Official Gazette of Saarland I, p. 1080) as amended by the Act of 8 December 2021 (Official Gazette I, p. 2629) and based on the Joint Examination Regulations for Bachelor's and Master's Degree Programmes of the Faculty of Natural Sciences and Technology and the Center for Human and Molecular Biology (ZHMB) at Saarland University of 4 November 2021 (Official Bulletin, p. 72), and with the consent of the University Senate, the Faculty of Natural Sciences and Technology and the Center for Human and Molecular Biology at Saarland University hereby issue the following Study Regulations Governing the Single-Subject Master's Degree Programme in Biophysics.

Section 1 Scope

These study regulations govern the content and structure of the single-subject Master's degree programme in Biophysics based on the Joint Examination Regulations for Bachelor's and Master's Degree Programmes of the Faculty of Natural Sciences and Technology and the Center for Human and Molecular Biology of 4 November 2021 (Official Bulletin p. 272). The organization of the curriculum, teaching and examinations in this programme is the responsibility of the Faculty of Natural Sciences and Technology (NT) at Saarland University.

Section 2 Objectives of the degree programme and career relevance

(1) The aim of the Master's degree programme in Biophysics is to provide students with a deeper understanding of the subject and to teach them the skills and methods needed for them to undertake scientific work, to critically appraise research findings, and to act responsibly. In addition to expanding and consolidating their understanding of the fundamentals of biophysics, students on the Master's programme develop their expertise in a specialist area through the Master's thesis project and the introductory modules. Graduates from the programme are ideally prepared for further independent scientific work such as studying for a subsequent doctoral research degree in the natural sciences.

(2) The Master's degree programme in Biophysics aims to prepare graduates to work as biophysicists in industry, research institutes and public bodies. Students therefore

require not only a solid education in biophysics, but also insight into the content and methodology of neighbouring scientific disciplines. The mandatory elective modules in a non-biophysics subject enable students to establish a connection to a neighbouring scientific discipline or to see how biophysics is applied in the engineering and life sciences or in the field of medicine.

(3) The broad education offered by the single-subject Master's degree programme in Biophysics enables graduates to access a diverse range of career paths in research and development as well as in other fields. Biophysicists are also increasingly working in the field of biotechnology.

(4) The curriculum is organized such that the programme can be completed in four semesters (standard period of study).

Section 3 Start of programme

Students can begin the Master's degree programme in Biophysics at the beginning of the winter or summer semester of each year.

Section 4 Types of academic instruction

(1) Lectures (V) introduce students to a particular subject area and enable them to acquire a deeper understanding of the subject through supplementary self-directed study. A lecture course with experimental relevance is usually supplemented by demonstrations and practical experimentation (standard class size = 100).

(2) Exercise and problem-solving classes (Ü) are typically small-group sessions used to supplement and reinforce what was learned in lectures. By working on representative problems students have the opportunity to apply and deepen the knowledge they acquired in the lectures, to assess their personal understanding of a specific area and to clarify any questions that they may have. Students may be required to successfully complete the assigned exercises and problems in order to register for an end-of-module assessment or examination (standard class size = 15).

(3) Seminars (S) are a type of academic instruction with a limited number of participants in which students actively collaborate to generate results or share their results by participating in discussions or by giving presentations. Seminars aim to deepen student understanding of an academic field, help students acquire the skills needed for the effective presentation of scientific and academic content, and encourage students to engage in critical analysis and discussion of research results (standard class size = 15).

(4) Practical skills classes (P) are a type of academic instruction in which students undertake experiments that introduce them to the specific approaches and methods used in a particular discipline or field of study. Students acquire the theoretical knowledge that underlies the experiments by attending lectures and by studying the relevant scientific literature. The experiments are undertaken in a supervised environment and provide students, working either alone or in small groups, with the opportunity to gain practical experience with the typical instruments, laboratory

equipment and systems used in this field of study. Students learn about the relationships between theory and practice not only through independent study and practice, but also through teamwork. An additional goal of the practical skills classes is to enable students to gain practical experience with computer-aided methods. Some of the specialist skills acquired in these practical classes can help prepare students for subsequent experimental research work. Participation in a particular practical skills class may depend on a student having first successfully completed a required course of lectures and exercise and problem-solving classes (standard class size = 10).

(5) Projects (PR) are a type of academic instruction in which students work under supervision to study and develop approaches to complex issues. Projects enable students to gain the advanced methodologies required to conduct independent research activities. By encouraging a comprehensive review of the scientific literature, projects also enable students to acquire an overview of the current research being conducted in a specific area of biophysics (standard group size = 2).

(6) Course attendance may be compulsory for certain introductory seminars, seminars, exercise or problem-solving classes and practical skills classes. Students will be notified of this by the instructor at the beginning of the module or module element. The compulsory attendance requirement is normally deemed to have been met if a student was present for at least 85% of the course sessions. If there are reasonable grounds for a student's absence, the student may be offered the option of completing alternative assignments.

Section 5

Module prerequisites

(1) Students wishing to take the modules 'Research Seminar' and 'Lab Project' must have earned at least 52 credits and must have successfully completed the modules 'Experimental Biophysics' and 'Theoretical Biophysics'.

(2) For the 'Tutoring' module, the prerequisite is prior successful completion of the module element to be tutored.

Section 6

Structure and content of the programme

(1) The single-subject Master's degree programme in Biophysics places greater emphasis on research and aims to complete the student's theoretical and experimental training in the fundamentals of biophysics. It has been designed to provide students with a broad general education in biophysics and neighbouring scientific disciplines. It also aims to provide students with a deeper understanding in selected specialist areas. The Master's degree programme is structured so that students acquire the skills necessary for scientific enquiry. The supervised scientific project, which forms part of the Master's thesis module, plays an important role in this regard.

(2) Detailed information regarding the content of modules and module elements is provided in the module catalogue that will be made available in suitable form. Any

changes or amendments to the information in the module catalogue that are not covered by the provisions of these regulations shall be reported to the Dean of Studies and documented appropriately.

(3) The language of instruction for biophysics courses is usually English. If only German-speaking students are in attendance, German may also be used as the language of instruction. This provision may not apply to courses taught in other subject areas or by other departments or faculties.

Section 7 Academic assessments and grading/marketing scale

Students on the single-subject Master's degree programme in Biophysics are required to earn coursework and examination credits totalling 120 ECTS credits as follows:

Mandatory section	Semester(s) for standard period of study	Module elements	Type of course	Hours per week	ECTS	Repeat cycle	Assessment graded / ungraded (b/u)
Experimental Biophysics	2.	Advanced concepts of experimental biophysics	V+Ü	3+1	5	WS	Written or oral examination (b)
Theoretical Biophysics ¹	2.	Advanced concepts of theoretical biophysics or basic concepts of theoretical biophysics	V+Ü	3+1	5	SS	Written or oral examination (b)
Biophysics Lab Course for Advanced Students IIa	2.	Advanced Lab Course IIa	P	4	7	WS	Initial and final discussion with supervisor, experimental work, record of findings, analysis and write-up, certificate of satisfactory completion (<i>Testat</i>) (u)
Biophysics Lab Course for Advanced Students IIb	2.	Advanced Lab Course IIb	P	2	4	SS	Initial and final discussion with supervisor, experimental work, record of findings, analysis and write-up, certificate of satisfactory completion (<i>Testat</i>) (u)
Biophysics Seminar	2.	Seminar on current questions in biophysics	S	2	4	SS	Presentation (b)

Research Seminar	3.	Research Seminar	PR	2	15	WS + SS	Presentation or Report (u)
Lab Project	3.	Lab Project	PR	10	15	WS + SS	Presentation or Report (u)
Final thesis	4.	Master's thesis	Written thesis	20	30	WS + SS	Written thesis (b)
Total mandatory section				42	85		

Electives	Semester(s) for standard period of study	Modules	Type of course	Hours per week	ECTS	Repeat cycle	Assessment graded / ungraded (b/u)
Biophysics mandatory electives subsection ²	2.	Modules in the mandatory electives subsection 'Biophysics'	V / Ü / P		15	WS + SS	Written or oral examination (b 10 ECTS/u 5 ECTS) ⁴ , if applicable exam admission prerequisites (PVL) (see module descriptions)
Non-Biophysics mandatory electives subsection ³	2.	Modules in the mandatory electives subsection 'Non-Biophysics Subjects'	V / Ü / P		20	WS + SS	Written or oral examination (b 9 ECTS/u 11 ECTS) ⁵ if applicable exam admission prerequisites (PVL) (see module descriptions)
Total					35		

1 The module to be taken is specified in the letter of admission according to the type of Bachelor's degree entitling the student to admission.

2 Modules are permitted here from the subjects of cell biology, physiology, statistical physics, soft matter physics, and applied physics. By decision of the Examination Board, modules from other specific areas of biophysics, biology and physics may also be permitted.

3 Modules are permitted here from the subjects of chemistry, mathematics and computer science. By decision of the Examination Board, modules from other non-biophysics subjects may also be permitted.

4 A minimum of 10 ECTS credits must be earned in graded modules. If more than 10 ECTS credits are graded in the successfully completed modules, the 10 best graded ECTS credits shall be used to calculate the overall grade.

5 A minimum of 9 ECTS credits must be earned in graded modules. If more than 9 ECTS credits are graded in the successfully completed modules, the 9 best graded ECTS credits shall be used to calculate the overall grade.

Section 8 Studying abroad

All students on the single-subject Master's degree programme in Biophysics are encouraged to spend part of the programme studying abroad. Students interested in studying abroad should seek advice from a relevant source and should clarify credit transfer arrangements in accordance with the examination regulations by completing a study abroad learning agreement. Academic credits earned from student assessments and examinations during a study abroad period shall be recognized in accordance with the examination regulations governing the Master's degree programme in Biophysics at Saarland University, provided that there is no significant difference in academic content when compared with the modules for which transfer credits are being accepted. Information on study abroad opportunities, exchange programmes, scholarships and administrative formalities is available from Saarland University's International Office or from the biosciences, physics and biophysics teaching staff. As foreign host universities and scholarship-awarding bodies often have early application deadlines and long application processing times, study abroad applications should normally be submitted before the student joins the Master's programme.

Section 9 Study plan

The Dean of Studies shall compile a programme-specific study plan for the single-subject Master's degree programme in Biophysics based on the study regulations. The study plan shall be appended to the study regulations as a recommendation for students on how to structure their studies effectively. The study plan will be made available in suitable form.

Section 10 Study counselling

(1) The Central Student Advisory Service (*Zentrale Studienberatung*) at Saarland University provides counselling and guidance to prospective students and enrolled students concerning the content, structure and requirements of academic study at Saarland University. It can also advise and assist students with respect to their study options as well as with planning and organizing their studies.

(2) Questions concerning curricular demands, learning objectives, admission requirements and study planning and organization can be addressed to the programme adviser or module coordinator for the single-subject Master's degree programme in Biophysics.

(3) Questions specific to individual modules / module elements should be addressed to the respective module coordinators.

Section 11 Commencement

These study regulations shall come into force on the day after they are announced in the Official Bulletin of the Institutions of Higher Education in Saarland (*Dienstblatt der Hochschulen des Saarlandes*). They apply for all students who begin the Master's degree programme in Biophysics after that date.

Saarbrücken, 14 March 2022

President of Saarland University
(Univ.-Prof. Dr. Manfred Schmitt)