**Unofficial Translation**

**Excerpt from the**

# Examination Regulations for the Degree Program Master of Science (M.Sc.)

**Appendix B. Program-specific provisions for the Examination Regulations for the Master of Science (M.Sc.)**

## Biochemistry and Biophysics

### § 1 Program profile

(1) The Master in Biochemistry and Biophysics degree program is research-oriented and consecutive.

(2) The Master in Biochemistry and Biophysics degree program is designed to provide graduates of bachelor's degree programs in biochemistry, life sciences, biophysics, pharmaceutical sciences, biology, chemistry, and molecular medicine with advanced qualifications in the interdisciplinary fields of biochemistry, biophysics, bioinformatics, and bioengineering. A thematic focus of the Master in Biochemistry and Biophysics degree program is to describe the molecular mechanisms of protein function. One of the main goals of the program is to train students to conduct independent experimental research. Graduates of the master's program are qualified for scientific work at institutions conducting research at the interface between chemistry, pharmacy, biology, and physics as well as for positions in the biotechnology industry.

(3) The Master in Biochemistry and Biophysics degree program may be completed either entirely according to the German- and English-taught curriculum offered at the University of Freiburg (bilingual version) or within the context of a partnership with the University of Strasbourg sponsored by the German–French University (binational "Biophysicochimie" version). The decision on whether to admit the student to the binational version of the Master in Biochemistry and Biophysics degree program sponsored by the German–French University is made during the admissions process. Graduates of the binational Biophysicochimie version of the Master in Biochemistry and Biophysics degree program earn the degree "Master of Science in Biophysicochimie."

### § 2 Program entry, place of study, and program scope

(1) Students may only enter the Master in Biochemistry and Biophysics degree program at the start of the winter semester.

(2) Students may complete the entire bilingual version of the Master in Biochemistry and Biophysics degree program at the University of Freiburg.

(3) Students of the binational Biophysicochimie version of the Master in Biochemistry and Biophysics degree program must complete the first program semester at the University of Strasbourg and the second program semester at the University of Freiburg. In the third program semester, students may choose between a lecture-based teaching program at the University of Strasbourg and a practical training program at the University of Freiburg. Depending on which of these options the student chooses, he or she must complete the fourth program semester at the other university.

(4) The Master in Biochemistry and Biophysics degree program comprises coursework equivalent to 120 ECTS credits.

### § 3 Language

Unless otherwise specified in the course catalog, courses and examinations in the Master in Biochemistry and Biophysics degree program at the University of Freiburg are held in German or English.

### § 4 Curriculum of the bilingual version of the program

(1) Students of the Master in Biochemistry and Biophysics degree program (bilingual version) must complete the modules listed in Table 1 below according to the provisions described in Paragraphs (2) through (5). The courses or modules available in the individual modules are determined by the Departmental Examination Committee and are listed in the current module handbook. In the modules marked as required modules (P), students must complete the courses named in the module handbook. In the modules marked as elective modules (WP), students may choose from a selection of courses or modules listed in the module handbook; it is possible to receive approval for other suitable courses or module from the Departmental Examination Committee upon request.

**Table 1: Modules of the bilingual version in Freiburg**

| **Module** | **Type** | **SWS** | **ECTS credits** | **P/WP** | **FS** | **Form of assessment** |
|---|---|---|---|---|---|---|
| Biochemistry Practical | Pr | 5 | 6 | P | 1 | PL: written, oral, and practical |
| Biophysics | V+Ü | 8 | 9 | P and WP | 1 | PL: written or oral |
| Bioinformatics | V+S+Pr | 6 | 6 | P | 1 | PL: written, oral, and practical |
| Biochemistry I | V | 9 | 9 | P and WP | 1 | PL: oral |
| Methods and Concepts | variable | | 6 | WP | 1 to 3 | SL |
| Biochemistry II | S+Ü | 6 | 6 | P | 2 | PL: report or presentation |
| Biology I | V+Ü+S | 10–12 | 12 | WP | 2 | PL: written and/or oral |
| Biology II | variable | | 9 | WP | 2 | SL |
| Advanced Practical | Pr | | 12 | WP | 3 | PL: report or presentation |
| Research Practical | Pr | | 15 | WP | 3 | SL |
| Master's Module | | | 30 | P | 4 | PL: master's thesis |

Abbreviations in table:
Type = type of course; SWS = planned number of contact hours; P = required course; WP = elective course; FS = recommended program semester; Pr = practical; S = seminar; Ü = exercise; V = lecture; PL = exam; SL = coursework

(2) The final module examinations in the modules Biophysics and Biochemistry I test the content of the courses the student completed in these modules.

(3) The modules Biology I and Biology II must be completed in one of the following three focus areas from the Master in Biology degree program: Applied Biosciences, Biochemistry and Microbiology, or Genetics and Developmental Biology. Students may choose their focus area freely on condition that there are enough available places in the focus area. If the amount of applicants exceeds the number of available places in one of the focus areas, the places in this focus area are awarded in a lottery. The module Biology I corresponds in content and in scope to Focus Area Module I from the Master in Biology degree program.

(4) In the Methods and Concepts module, students may complete suitable courses or modules from the fields of Biochemistry, Chemistry, Biology, and Pharmacy.

(5) Students may choose to complete the Advanced Practical and the Research Practical in the same or different fields of biochemistry or biophysics.

## § 5 Curriculum of the binational Biophysicochimie version of the program

(1) All students of the binational Biophysicochimie version of the Master in Biochemistry and Biophysics degree program must complete the modules listed in Table 2 below in the first two program semesters – first at the University of Strasbourg and then at the University of Freiburg. The modules Biology I and Biology II must be completed in one of the following three focus areas from the Master in Biology degree program: Applied Biosciences, Biochemistry and Microbiology, or Genetics and Developmental Biology. Students may choose their focus area freely on condition that there are enough available places in the focus area. If the amount of applicants exceeds the number of available places in one of the focus areas, the places in this focus area are awarded in a lottery. The module Biology I corresponds in content and in scope to Focus Area Module I from the Master in Biology degree program.

**Table 2: First and second program semester in Strasbourg and Freiburg**

| Module | Type | SWS | ECTS credits | P/WP | FS | Form of assessment |
|---|---|---|---|---|---|---|
| **1st program semester at the University of Strasbourg** | | | | | | |
| Travaux pratiques transversaux (synthèse, analytique, modélisation) | V | | 6 | P | 1 | PL |
| Chimie organique (anglais disciplinaire) | V+Ü | | 3 | P | 1 | PL |
| Chimie inorganique | V+Ü | | 3 | P | 1 | PL |
| Cinétique et thermodynamique | V+Ü | | 3 | P | 1 | PL |
| Spectroscopies introduction | V+Ü | | 3 | P | 1 | PL |
| Modélisation moléculaire | V+Ü | | 3 | P | 1 | PL |
| Méthodes statistiques | V+Ü | | 3 | P | 1 | PL |
| Structure et diffraction | V+Ü | | 3 | P | 1 | PL |
| Langues/Interculturel | Ü | | 3 | P | 1 | SL |
| **2nd program semester at the University of Freiburg** | | | | | | |
| Biochemistry II | S+Ü | 6 | 6 | P | 2 | PL: report or presentation |
| Biology I | variable | 10–12 | 12 | WP | 2 | PL: written and/or oral |
| Biology II | variable | | 9 | WP | 2 | SL |
| Intercultural Skills | variable | | 3 | P | 2 | SL |

**Kommentar [DH1]:** Oder ggf. nicht übersetzen, wenn die Lehrveranstaltungen auf deutsch angeboten werden.

Abbreviations in table:
Type = type of course; SWS = planned number of contact hours; P = required course; WP = elective course; FS = recommended program semester; Pr = practical; Ü = exercise; V = lecture; PL = exam; SL = coursework

(2) At the end of the teaching period in the second program semester, the student chooses whether to complete a lecture-based teaching program at the University of Strasbourg or a practical training program at the University of Freiburg. Students who spend the third program semester at the University of Strasbourg must spend the fourth program semester writing their master's thesis at the University of Freiburg. Students who spend the third program semester at the University of Freiburg must spend the fourth program semester at the University of Strasbourg.

(3) Students who spend the third program semester at the University of Strasbourg spend the third and fourth program semesters completing the modules listed in Table 3 below, first at the University of Strasbourg and then at the University of Freiburg.

**Table 3: Third and fourth program semester in Straßburg and Freiburg**

| Module | Type | SWS | ECTS credits | P/WP | FS | Form of assessment |
|---|---|---|---|---|---|---|
| **3rd program semester at the University of Strasbourg** | | | | | | |
| Réactivité de surfaces | V+Ü | | 3 | P | 3 | PL |
| Spectroscopies optiques avancées | V+Ü | | 3 | P | 3 | PL |
| Biologie structurale et modélisation (anglais disciplinaire) | V+Ü | | 3 | P | 3 | PL |
| Nanosciences et matériaux fonctionnels | V+Ü | | 3 | P | 3 | PL |
| Conversion d'energie | V+Ü | | 3 | P | 3 | PL |
| Microscopie et nanoscopie | V+Ü | | 3 | P | 3 | PL |
| Biophysicochimie | V+Ü | | 3 | P | 3 | PL |
| Thermodynamique statistique | V+Ü | | 3 | P | 3 | PL |
| Oxydes technologiques | V+Ü | | 3 | P | 3 | PL |
| Langues/Interculturel | Ü | | 3 | P | 3 | SL |
| **4th program semester at the University of Freiburg** | | | | | | |
| Master's Module | | | 30 | P | 4 | PL: master's thesis |

(4) Students who spend the third program semester at the University of Freiburg spend the third and fourth program semester completing the modules listed in Table 4 below, first at the University of Freiburg and then at the University of Strasbourg. Students may complete the Advanced Practical and the Research Practical in the same or different fields of biochemistry or biophysics.

**Table 4: Third and fourth program semester in Freiburg and Strasbourg**

| Module | Type | SWS | ECTS credits | P/WP | FS | Form of assessment |
|---|---|---|---|---|---|---|
| **3rd program semester at the University of Freiburg** | | | | | | |
| Intercultural Skills | variable | | 3 | P | 3 | SL |
| Advanced Practical | Pr | | 12 | WP | 3 | PL: report or presentation |
| Research Practical | Pr | | 15 | WP | 3 | SL |
| **4th program semester at the University of Strasbourg** | | | | | | |
| Stage (laboratoire ou industrie) | Pr | | 27 | P | 4 | PL |
| Unité d'enseignement professionalisante (valorisation du stage) | V+Ü | | 3 | P | 4 | SL |

(5) The courses or modules available in the individual modules are determined by the Departmental Examination Committee and are listed in the current module handbook. In the modules marked as required modules (P), students must complete the courses named in the module handbook. In the modules marked as elective modules (WP), students may choose from a selection of courses or modules listed in the module handbook.

### § 6 Coursework

Each module may include coursework which the student must successfully complete in order to be admitted to the relevant module examination. Examples of such coursework are regular course participation, tests, reports, or presentations. The type and scope of coursework are defined in the current module handbook and are announced to the students at the beginning of each course in the particular module.

## § 7 Course-based assessments

(1) As a rule, written course-based assessments take the form of supervised written exams or reports. Types of oral course-based assessment are presentations or oral exams (exam interviews). The type and scope of course-based assessments are defined in the current module handbook and are announced to the students at the beginning of each course in the particular module.

(2) Written exams have a maximum duration of 30 minutes per ECTS credit. They may consist entirely or partially of multiple-choice questions; the provisions described in § 17a of these examination regulations apply to such exams.

(3) Oral exams have a maximum duration of ten minutes per ECTS credit.

## § 8 Repeating course-based assessments

(1) Course-based assessments that have been graded “not adequate (5.0)” or considered failed may be repeated once. In addition, a maximum of two failed assessments may be repeated a second time; this does not apply to the assessment in the Biochemistry Practical module.

(2) As a rule, in order to retake a failed course-based assessment a second time, the student must retake the relevant course. The second retake must be held at the next possible examination session after the first retake. § 24 Paragraphs (3) and (4) of these examination regulations apply accordingly.

(3) Students are not permitted to retake successfully completed course-based assessments for the purpose of achieving a better grade.

## § 9 Admission to prepare the master’s thesis

Admission to prepare the master’s thesis is only open to students who are matriculated in the Master in Biophysics and Biochemistry degree program and have successfully completed modules worth a total of at least 60 ECTS credits.

## § 10 Master’s thesis

(1) The master’s thesis must be written within a period of six months and is worth 30 ECTS credits.

(2) The master’s thesis must be written either in German or in English. In the binational Biophysicochimie version of the Master in Biochemistry and Biophysics degree program, the master’s thesis may also be written in French. Master’s theses written in English or in French must contain a summary in German.

(3) The master’s thesis must be submitted to the Examination Office in three bound hardcopies as well as in electronic form on a common data storage system (such as CD or DVD).

(4) At least one of the two evaluators of the master’s thesis must be a full-time faculty member of the Faculty of Chemistry and Pharmacy or the Faculty of Biology of the University of Freiburg.

## § 11 Determination of the overall grade

(1) The overall grade for the bilingual version of the Master in Biochemistry and Biophysics degree program is calculated as the average of the grades earned for the modules listed in the following table, with the individual module grades weighted as indicated:

| **Module** | **Weighting** |
|---|---|
| Biochemistry Practical | 5 percent |
| Biophysics | 12.5 percent |
| Bioinformatics | 5 percent |
| Biochemistry I | 12.5 percent |
| Biology I | 10 percent |
| Biochemistry II | 5 percent |
| Advanced Practical | 10 percent |
| Master’s Module | 40 percent |

(2) The overall grade for the binational Biophysicochimie version of the Master in Biochemistry and Biophysics degree program is calculated as the average of the grades earned for the following items, with the individual items weighted as indicated:

1. The average of the grades earned on all modules completed in the first program semester, weighted according to the amount of ECTS credits they are worth, makes up 25 percent of the overall grade.
2. The grades earned on the modules Biochemistry II and Biology I make up 10 and 15 percent of the overall grade, respectively.
3. The grade earned on the Advanced Practical module or the average of the grades earned on all modules completed in the third program semester at the University of Strasbourg, weighted according to the amount of ECTS credits they are worth, makes up ten percent of the overall grade.
4. The grade earned on the Master's Module or the grade earned on the Stage Module makes up 40 percent of the overall grade.

(3) Students who receive the grade "very good" – 1.3 or better – on all modules are awarded the distinction "with honors."

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