Education and Examination Regulations
Master Biomedical Sciences 2018-2019

Paragraph 1 General provisions

Article 1.1 Applicability of the regulations

1. These education and examination regulations (hereinafter: the regulations) apply to the master programme Biomedical Sciences (hereinafter: the programme) that is offered by Radboud University Medical Centre (hereinafter: Radboudumc) of Radboud University and they describe the present procedures, rights and obligations with respect to master programmes, interim examinations and examinations.
2. The regulations enter into effect on 1 September 2018 and apply to all students that are registered for the programme in the academic year 2018-2019.
3. From academic year 2017-2018 on, the master's programme has been revised. For students for whom there may be ambiguity with regards to the programme, the board of examiners will determine under which education and examination regulations their exam programme will be designed. (See: transitional provisions in appendix 4 to these regulations.)
4. The programme is provided by Radboudumc which is entirely linked to Radboud University.
5. Without prejudice to Article 7 of the structural regulations of Radboud University (hereinafter: the structural regulations) these regulations are adopted or amended by the dean after the programme committees have advised on this and the faculty joint meeting has agreed.

Article 1.2 Definitions

1. Terms defined in these regulations that are also used in the structural regulation and/or the Higher Education and Research Act (*Wet op het Hoger onderwijs en Wetenschappelijk onderzoek*; hereinafter: the Act) have the same meaning as these terms have in the structural regulations and the Act respectively.
2. Apart from the terms referred to in paragraph 1 of the present article, the following terms are understood to have the following meaning:
    a) EC: *European Credits*, which is the unit of study in accordance with the *European Credit Transfer System*, in which 1 EC equals 28 hours of study.
    b) Fraud: any act or omission by a student that makes forming an accurate opinion on his knowledge, understanding and skills partially or entirely impossible.
    c) Programme Component: a thematically coherent set of learning activities (self-study and instruction). Each program component is connected to one or more units / exams.
    d) Rules and guidelines: rules adopted by the board of examiners for proper procedure during examinations; guidelines for student assessment and determining exam results. Said rules and guidelines are revealed together with these Education and Examination Regulations.
    e) Testing regulations: description of the form of an examination, of the requirements to take part in exam components such as practical exercises and tests, and of the manner in which the final result is recorded.

f) Mentor: researcher and teacher from one of three research institutes at Radboudumc who supervises students who have chosen that particular institute. The mentor will discuss the details of an individual elective programme with a student, and will monitor the level and coherence of the programme against the background of the formal requirements set for the elective programme by the BMS programme.

g) WHW: Higher Education and Research Act (*Wet op het Hoger onderwijs en Wetenschappelijk onderzoek*), stb 1992, 563.

h) Dean: dean of the faculty of medical sciences at Radboud University (Radboudumc).

i) CAE: Certificate in Advanced English

j) CPE: Certificate of Proficiency in English

k) IELTS: International English Language Testing System

l) TOEFL: Test of English as a Foreign Language

Paragraph 2 Admission to programmes and courses

Article 2.1 Admission and admission requirements

Decisions on admission are taken by the board of examiners.

Article 2.2 Admission requirements

Admission to the Master programme of Biomedical Sciences requires the following prior education:

1. A Bachelor's degree based on successfully passing the final examination of the Bachelor of Biomedical Sciences at Radboud University Nijmegen.
2. A Bachelor's degree based on successfully passing the final examination of other related Bachelor programmes in the Netherlands which have been appointed as such by the Dean, on the understanding that the Board of Examiners may determine additional requirements for the Master programme.
3. A certificate of admission to the Master, issued by the Executive Board of Radboud University Nijmegen, to candidates holding a secondary school diploma in Science and Engineering or Science and Health supplemented by the subject Physics and moreover a graduate degree in the programmes of Physical Therapy, Higher Laboratory Education in Chemistry and Biotechnology, or Higher Laboratory Education in Medicine after they have successfully met the programme of additional prior education requirements as laid down in appendix 1 to these regulations. The result of this programme is sufficient if a mark of 6 or higher is achieved in all components.
4. A Bachelor's degree based on successfully passing the final examination of a related Bachelor programme abroad and an additional successfully completed English interview with two members of the admissions board of the Examination Board Biomedical Sciences. Admission depends on:
   a) the degree of biomedical knowledge and experience in the field displayed in the interview;
   b) the applicant's proficiency in English;
   c) an assessment of the applicant's prior education by the Examination Board of the Master of Biomedical Sciences.

Article 2.3 Premaster

In the event that the requirements set above are not met, but the admissions board is of the opinion that the deficiencies can be remedied within a reasonable period of time, the scope and content of a premaster programme will be determined. The result of the pre-master programme is sufficient for admission to the Biomedical Sciences Master's degree if for all components a grade of 6 or higher has been achieved. In Appendix 1 to these regulations, the pre-master programme for a number of specific pre-programmes has been laid down.

Article 2.4 Language requirements

1. In addition to the admission requirements referred to above, adequate command is required of the language in which the courses are taught, i.e. English.

2. Sufficient English proficiency is required to participate in both the English-taught courses and English examinations. The language requirement referred to in paragraph 1 of the present article is in any case met, if the student:

a. holds a diploma of pre-university education; *or*

b. holds a diploma of secondary education, obtained at an English-language institution for secondary education in or outside the Netherlands; *or*

c. holds a diploma in higher vocational training; *or*

d. has passed one of the following tests:

· TOEFL with a score of 575 or higher for the paper version;

· TOEFL with a score of 232 or higher for the computer version;

· TOEFL with a score of 90 or higher for the Internet-based version;

· IELTS with a score of 6.5 or higher;

· Cambridge examinations: a CAE or CPE exam with a C-grade or higher.

Article 2.5 Flexible admission into the Master programme

1. Upon request and insofar as the available capacity allows, the Board of Examiners may decide to already admit a student enrolled in the Bachelor's programme Biomedical Sciences to programme components and corresponding examinations of the Master's programme Biomedical Sciences for the duration of the academic year before the bachelor programme has been successfully completed.

2.A request is eligible if:

a. The first-year examination of the Bachelor's program has been completed successfully;
b. A sufficient mark has been obtained for the final aptitude test (bachelor's final paper);
c. At least 168 ECs have been earned for the remaining tests of the post- propaedeutic phase of the Bachelor's program, in which received ECs for exemptions are to be taken into account as well.

3.In exceptional cases the Board of Examiners may deviate from the conditions for flexible admission as stated in paragraph 2c in favour of the student.

4.Students who are admitted to examinations of the master's programme under this article are not entitled to sitting the final examination of the master's programme or starting the final aptitude test, as long as the bachelor's degree has not been obtained or the bridging programme has not been completed and he has not been enrolled in the master's programme.

Article 2.6 Entry requirements for specific programme components

There are no entry requirements for components of the master programme. The MSc student is allowed to take courses and sit relevant examinations. In such cases the student is obligated to inquire into the level of knowledge required by the lecturer prior to the start of the course. In case of any hiatus in prior knowledge it is the student's responsibility to achieve the desired entry level through self-study.

Paragraph 3 Structure and form

Article 3.1 Examinations, degrees, academic achievement

1. The programme is concluded with the master's examination.
2. Said examination grants the right to carry the titles 'Doctorandus' or 'Master of Science' and gives access to promotion.
3. To the successful candidate of the degree program, an academic distinction may be awarded by the Examination Board. The rules for awarding such distinctions are appended to these regulations in Appendix 2.

Article 3.2 Programme-specific exit qualifications

General learning objectives

The MSc:

1. combines broad fundamental knowledge on the mechanisms underlying health and disease processes in the full width of the biomedical sciences with specialist knowledge in a specific field of expertise within the biomedical sciences[1], e.g. molecular life sciences, clinical neurosciences or population research;
2. gains in-depth, expert understanding of a (new or unfamiliar) biomedical topic on the basis of a literature thesis and describes the state of the art concerning a disease, mechanism or methodology;
3. explores the context of health (care) problems and translates fundamental knowledge into biomedical research that aims towards prevention, therapy or diagnostics of disease;
4. conducts biomedical research independently, keeping up with international standards
5. establishes him- or herself as a member of a professional network of scientists; including
   a. the competence to participate in scientific discussions and present his/her work in the English language to an international scientific audience
   b. the capacity to write a scientific article at the level of international peer-reviewed journals
6. integrates the societal and ethical impact of scientific research in relevant situations in his/her professional career

[1] Specific fields of expertise are profoundly embedded in the three research institutes of the Radboudumc

- Radboud Institute for Health Sciences (RIHS):
  The focus of the RIHS is to improve clinical practice and public health by providing evidence about the efficacy and efficiency of existing and new tests, treatments and policies, by training young researchers in the methodology to obtain such evidence, and by developing new methodology for more optimal research in this field.
- Radboud institute for Molecular Life Sciences (RIMLS):
  The mission of the Radboud Institute for Molecular Life Sciences (RIMLS) is to achieve a greater understanding of the molecular mechanisms of disease. By integrating fundamental and clinical research, the institute obtains multifaceted knowledge of (patho)physiological processes. To have a significant impact on healthcare, these findings are translated into diagnostics, therapeutics and personalized treatment strategies.
- Donders Centre for Medical Neuroscience (DCMN)
  Through its translational research into both the healthy and diseased brain, the Donders Institute is able to identify the brain basis of a healthy lifestyle and its consequences on the brain, and to advance prevention, recognition and treatment of brain diseases. As part of the personalized healthcare mission of the Radboud University Medical Centre, we specifically aim for precision diagnostics and treatment for individual patients with neural, psychiatric or sensory disorders.

Research profile

The MSc is proficient to move into an international PhD programme or to participate in research projects at health care institutions or e.g. pharmaceutical companies.

Communication profile

The MSc

1. understands mechanisms and processes that are involved in the perception and interpretation of scientific information by lay persons.
2. is able to design a communicative intervention on the basis of a thorough understanding of the target group.
3. is able to evaluate the effectiveness of communicative interventions.

Consultancy profile

The MSc

1. is able to effectively work with stakeholders in an advisory project to solve a policy problem the solution of which requires biomedical expertise.
2. acquires the communicative skills to effectively manage human interaction in the context of policy making, including possible differences in stakeholder views, and associated resistance.
3. is able to write an advisory report that matches client needs and expectations.

Article 3.3 Study load

The programme has a study load amounting to a minimum of 120 ECs.

Article 3.4 Form

1. The programme is taught exclusively as a full-time study course.
2. At the student's request, the board of examiners may, on the basis of special personal circumstances, (temporarily) establish an adjusted programme insofar as this is compatible with the nature of said programme.

Article 3.5 Language

1. The Master programme Biomedical Sciences is taught in the English language. All courses and examinations are in English, unless the Board of Examiners decides otherwise.
2. Approval of the Board of Examiners for following external electives implies approval for the language in which the subject is taught.

Article 3.6 Composition of the programme

With due observance of the provisions in the general part of these regulations, the programme includes the following components:

1. The student chooses one of three research institutes at Radboudumc:
   a. Radboud Institute for Molecular Life Sciences (RIMLS);
   b. Radboud Institute for Health Sciences (RIHS);
   c. Donders Centre for Medical Neuroscience (DCMN).
2. The student must choose one of the following **profiles**:
   a. the research profile;
   b. the communicative profile;
   c. the consultancy profile.
3. The Master's programme Biomedical Sciences (BMS) comprises multiple programme components, whose minimum required scope is specified in the tables below.

Table: Compulsory exam components for BMS Master, Research profile, and corresponding minimal study load:

Compulsory exam component	**Number**	**Scope in ECs**	**Explanation in article:**
Modules BMS	8	≥24	3.6.4
Literature thesis	1	6	3.6.5
Scientific integrity Colloquia scientific integrity Thinking critically about science (n.a. for BSc in biomedical sciences of RU)	1 or 2	 0 3	3.6.6
Research internship	2	≥60	3.6.7
Of which at least 1 research internship		≥30	

Table: Compulsory exam components for BMS Master, Communicative or Consultancy profile, and corresponding minimal study load:

Compulsory exam component	**Number**	**Scope in ECs**	**Explanation in article:**
Profile-specific modules	4	12	3.6.4
Other modules BMS	6	≥18	3.6.4
Literature thesis	1	6	3.6.5
Scientific integrity Colloquia scientific integrity Thinking critically about science (n.a. for BSc in biomedical sciences of RU)	1 or 2	 0 3	3.6.6
Research internship	1	≥30	3.6.7
Profile internship	1	≥30	3.6.7

4. A list of BMS elective modules and (profile-specific) compulsory modules is included in an appendix to these regulations (appendix 3).
5. A literature thesis with a scope of 6 ECs is a compulsory component of the master programme. The requirements for the literature thesis can be found on the Radboudumc website.
6. Scientific integrity is an obligatory component of the BMS Master's programme. Students have to participate in the Colloquia Scientific integrity and students, who have not previously completed the course MED-B3WI, have to participate in the course MED-BMS01.
7. Internships have a study load of 24, 30, 36, 42, 48 or 60 EC (see table). Internships can only be attended after approval by the Board of Examiners.

Table: Extend of internships

ECTS	Weeks	Study load in hours (sbu)
24	16	672
30	20 (half academic year)	840
36	24	1008
42	28	1176
48	32	1344
60	40 (academic year)	1680

8. Electives can be fulfilled with additional placement or theoretical courses. Existing modules within Radboudumc or courses from other university programmes can be chosen. Developing individual modules is possible (i.e. courses customised for one or more students). Up to 12 ECs of electives within Radboudumc can be at bachelor level (provided that said components are not part of the student in question's Bachelor's degree). Besides biomedical electives every student has the right to spend 12 ECs within the electives in courses on an academic level, which are not necessarily related to biomedical sciences. The scope of each course must be 2.5 ECs or more, which applies to all elective courses. Elective courses can only be attended after approval by the Board of Examiners.
9. The programme's Board of Examiners determines the definitive composition of any individual exam programme. To this end, the student compiles a proposed curriculum of education modules, a literature thesis, electives, and placements in an academic plan, discusses it with his/her mentor, and submits it to the Board of Examiners for approval. The Board of Examiners checks whether the curriculum as laid down in the academic plan fits within the domain of the programme and will review said plan, considering the programme's objectives, in terms of level and coherence.
10. In addition to the compulsory study load as described in this article, the student is allowed to expand the exam programme with extracurricular exam components in the form of placements or electives. Any student wishing to expand the exam programme with extracurricular exam components must submit an application (by means of the academic plan) to the Board of Examiners. The application will be reviewed in terms of level and total scope in relation to the programme. Additional exam components which have been approved by the Board of Examiners are included as individual parts in the exam programme of the student involved, with the obligation to conclude them with a sufficient result. No rights with respect to enrolment can be derived from the approval of the Board of Examiners for inclusion of additional tests in the programme. Students should therefore determine prior to application whether they will suffer any adverse consequences after approval.
11. In 'Rules and Regulations' the Board of Examiners provides further details on the manner in which the academic plan is to be submitted and approved.

Paragraph 4 Testing

Article 4.1 Form of interim examinations

1. For each exam component described in Article 3.6 with the exception of *Research internship*, *Profile internship* and *Electives*, the examiner establishes a testing regulation which requires approval by the Board of Examiners. Said testing regulations describe the form of the examination, including any deviations in the re-sit of the examination within the academic year. Testing regulations are announced to students before the start of the teaching period of the exam component in question.
2. The following interim examinations will be taken in the manner indicated below:
   a. *Research internship*, referred to in Article 3.7: Carrying out scientific research, producing a concept research paper thereof, and providing an oral report.
   b. *Profile internship*, referred to in Article 3.7: Carrying out a practical placement in an area relevant to the programme, producing a written report thereof, and providing an oral report.
   c. *Electives*: Examination depends on the nature of the exam component and is part of the approval procedure.
3. At a student's request the Board of Examiners may allow an interim examination to be taken in a different manner than stated in 4.1.1 or 4.1.2.
4. In case of oral examinations at the request of the student or the first appointed examiner the Board of Examiners may appoint a second examiner. Not more than one person is given an oral exam at the same time, unless the testing scheme referred to in paragraph 1 of the present article states otherwise. Oral examinations are public, unless the student has objected or the testing scheme referred to in paragraph 1 states otherwise.
5. Students with physical or sensory disabilities will be offered the opportunity to take the exams in a manner adapted to their individual disability as much as possible, insofar as this is compatible with the nature of the programme. If necessary, the Board of Examiners will seek expert advice prior to making a decision.

Article 4.2 Frequency of interim examinations

Interim examinations for the modules described in Paragraph 7 can be taken twice per year, with the proviso that

a) interim examinations can be taken for the first time within the education period set for the relevant examination component;
b) if an interim examination has not been taken, or has yielded an insufficient result on the first occasion, it can be re-sat within a timeframe to be determined by the examiner.

Article 4.3 Re-sits of interim examinations

1. A successfully completed placement cannot be retaken.
2. A successfully completed interim examination can be retaken with permission of the Board of Examiners.
3. When an interim examination is retaken, in all cases the last mark obtained is decisive.

Article 4.4 Validity term

1. The validity term of any exam component that has been passed is indefinite.
2. If a student wishes to resume their studies after a gap of more than one academic year, the Board of Examiners may inquire into said student's knowledge, insight, and skills to determine whether there should be additional or substitute requirements in light of the current exam programme.

Article 4.5 Determining and publishing interim results

1. Interim examination results are expressed in whole or half numbers from 1-10. As an exception to this rule, results cannot be expressed as 5.5.
2. Exceptions to that which is described in paragraph 1 of the present article include:
    a. Individual exam components which are followed within Radboud University but outside Radboud University Medical Centre can be administrated as decimal numbers.
    b. Results of individual exam components followed outside of Radboud University but in the Netherlands can be administrated with the number of decimals as provided.
    c. Results of individual exam components followed outside of the Netherlands can be administrated as decimal numbers.
    d. Exemptions are administrated as "VS".
3. If the result of an examination or internship is greater than or equal to 6, it has been passed. If the result of an examination or internship is less than or equal to 5, it has not been passed.
4. The examiner determines the result immediately after an oral examination and gives the students a written statement, a copy of which is provided for the student administration of Radboud University Medical Centre.
5. The examiner determines the result of a written examination within four weeks of the day on which it was completed and provides the student administration of Radboudumc with the data necessary for publication of the results to the student. In deviation from this, for examinations which consist exclusively of multiple-choice questions the examiner determines the result within three weeks of the day on which the examination was completed.
6. Notwithstanding the above, the examiner will determine the result of a written test at least 15 days before a scheduled re-sit.
7. Regarding any examination other than oral or written ones the Board of Examiners determines in advance how and when the student will receive a written confirmation of the result.
8. The written confirmation of the results of an examination will inform the student on the right of inspection referred to in Article 5.8, as well as the possibility of objection to the Board of Appeal for Examinations.

Article 4.6 Rules and regulations Board of Examiners

1. The Board of Examiners has powers and duties specified in the law, including guaranteeing the quality of examinations and the establishment of guidelines and instructions on evaluating the results of said examinations within the framework of these regulations.
2. The Board of Examiners lays down rules on the execution of the power and duties referred to in paragraph 1 and about measures it may take in this regard.

Article 4.7 Right of inspection

1. For 20 workdays after publication of the results of a written examination the student may inspect his or her own work upon request.
2. During the period stated in paragraph 1 of the present article the questions and assignments of the examination in question and the norms applied in its assessment may be perused.
3. Notwithstanding the above, the examiner can determine that inspection occurs for all students on a specified date, moment and place.
4. In all cases the inspection of own work occurs at least 5 days before a scheduled re-sit.

Article 4.8 Retention periods

The examiner will retain the examinations and other components weighing into the determination of the result, such as papers, assignments and such, for at least two years after the moment of examination. Reports of master placements are to be retained for at least seven years.

Article 4.9 Examination results

1. The Board of Examiners determines the result of the Master's examination, after the student has obtained sufficient results for all exam components described in article 7.6, where applicable, and approved by the Board of Examiners. Results of electives of the master programme are sufficient if a mark of 6 or higher has been obtained for the examinations of exam components which, according to the Board of Examiners' decision on the academic plan of the student inquiring into his or her results, are part of his or her exam programme.
2. Prior to determining the result of an examination, the Board of Examiners may itself conduct an examination into the student's knowledge, insight and skills pertaining to one or more programme components or aspects.
3. In " Rules and Regulations" the Board of Examiners provides instruction regarding organisational affairs for the purpose of graduation.

Paragraph 5 Other provisions

Article 5.1 Study progress and student counselling

1. The dean is responsible for the registration of the study results in such a way that every student is provided, upon request and within a reasonable period of time, with an updated overview of the results obtained.
2. The dean is responsible for providing adequate student counselling.

Article 5.2 Exemptions

1. The board of examiners may exempt a student upon his request from sitting an interim examination if this student:
   a) has completed an equivalent component at a university or higher professional education programme in the Netherlands or abroad, which is similar in terms of contents, level, and scope; or,
   b) can provide proof to the satisfaction of the Board of Examiners, of activities in the field of Biomedical Sciences for an extended period of time.
2. An exemption is considered a sufficient result under the regulations as laid down in article 8.5.

Article 5.3 Deadlines

In case of a student request as referred to in these regulations the Board of Examiners will either communicate its decision to the student within four weeks of receiving said request, or will communicate the number of weeks within which a decision will be communicated within four weeks.

Article 5.4 Judicium Abeundi

1. In case of gross misconduct or otherwise reprehensible behaviour and/or utterances of a student as referred to in WHW article 7.42a the Executive Board may terminate a student's enrolment after consulting the Board of Examiners or the Dean.
2. Paragraph 1 will only enter into effect after a careful consideration of the interests of both the student and the institution has taken place, and after it has proven plausible that a student's behaviour has demonstrated an incapacity to exercise one or more professions for which their education trains them, or for the practical preparation for professional practice.

Article 5.5 Fraud

In accordance with the regulation for fraud of Radboud University, the Board of Examiners describes in the rules and regulations the measures that take into action in case of fraud.

Article 5.6 Transitional provisions

Transitional provisions can be found in appendix 4 of this regulations.

Article 5.7 Evaluation

With due observance of the institution's quality management system, as described in the Handbook of Quality Assurance Education, Radboud University, the dean ensures that the contents of the programmes are systematically evaluated

Paragraph 6. Final provisions

Article 6.1 Adoption and amendments

1. Amendments to these regulations are made by the dean by separate decision.
2. Any amendments to these regulations will not take effect in the current academic year, if the interests of the student are compromised thereby.
3. Amendments may not to the detriment of students affect the approval of examination programs granted by the Examination Board to students or other decisions which have been taken by the examination board with respect to students under this scheme.

Article 6.2 Publication

The dean is responsible for appropriate publication of these regulations, of the rules and guidelines laid down by the board of examiners, and of any amendments.

Article 6.3 Precedence of the Dutch version

Where provisions in this English version are in contradiction with the stipulations in the Dutch language version of these Education and Examination Regulations, the text applies as provided in the Dutch version.

Article 6.4 Implementation

These regulations enter into effect on 1 September 2018. The education and examination regulations laid down previously will expire on that date.

Appendix 1: Additional prior education requirements

(belonging to the Education and Examination Regulations Master Biomedical Sciences, amended as of 1 September 2018)

The following programme of additional prior education requirements applies to candidates mentioned in article 4.1 – paragraph 2, in possession of a bachelor's degree based on successfully completing the final examination of the bachelor's programme Medicine at Radboud University Nijmegen.

Table: Pre-master programme Biomedical Sciences for students of Medicine starting in the academic year 2018-2019

Components	**ECs**
Premaster minor: Biomedical Research Methods	12
Elective ninth quarter	3
Minor	12
Bachelor research placement	17
Thinking critically about science	3
Total:	47

The following programmes of additional prior education requirements apply to candidates in possession of proof of admission into the Master's programme mentioned in article 4.1 – paragraph 3 (graduates of Physical Therapy, Higher Laboratory Education in Chemistry and Biotechnology, Higher Laboratory Education in Medicine, or Medical Imaging and Radiotherapeutic Techniques).

Table: Pre-master programme Biomedical Sciences for graduates of HLE, Physical Therapy, and MBRT

Components	**ECs**
Premaster Minor: Biomedical Research Methods	12
Biomedical evidence in practice (seventh quarter)	5.5
Personalised health care (eighth quarter)	5.5
Context, science and innovation, fourth semester	5
Minor	12
Project report scientific research	7
Thinking critically about science	3
Total:	50

Table: HAN-RU minor Movement Sciences

Components	**ECs**
Premaster Minor: Biomedical Research Methods	12
Minor Moving Questions: An introduction to clinical human movement sciences	12
Biomedical evidence in practice (seventh quarter)	5.5
Context, science and innovation, fourth semester	5
Thinking critically about science	3
Bachelor research internship	17
Total:	57.5

Appendix 2: Academic Distinctions

Academic distinctions

1. With due observance of this article the Board of Examiners is the body which decides whether an academic distinction is granted, and, if so, which.
2. The academic distinction
    a. "cum laude" is granted if the weighted average result of the final assessment of the components referred to in paragraph 3 equals or is greater than 8.0, or
    b. "summa cum laude" is granted if the weighted average result of the final assessment of the components referred to in paragraph 3 equals or is greater than 9.0.
3. The academic distinction is calculated including all components of the exam programme awarded with a mark on a scale of 1 to 10.
4. A distinction as described under 2a or 2b is only granted if internships are graded with an 8.0 or higher and the mean of all theoretical components is at least 8.0.
5. The number of ECs of each component referred to in paragraph 3 counts as the weighting factor in the calculation of the weighted average result.
6. The academic distinction is not granted if two or more components of the exam programme have been retaken, or if any single component has been retaken more than once, unless the Board of Examiners justifies deciding otherwise.
7. The academic distinction is not granted if fraud has been detected in any component of the entire exam programme.

Appendix 3: Modules Master Programme Biomedical Sciences (BMS)

(belonging to the Education and Examination Regulations Master Biomedical Sciences, amended as of 1 September 2018)

A. BMS modules

Period	Code	Title	ECs
3c-5c	MED-B3WI	Thinking critically about science	3.0
	MED-BMS..		
1a	24	Introduction to Neuroimaging I: Conceptual basics and anatomy	3,0
1a	53	Orthopaedic biomechanics in motion	3,0
1a	58	Cost-effectiveness analysis in health care	3,0
1a	59	Prediction models in health science	3,0
1a	64	Molecular and cellular toxicology	3,0
1a	73	Infectious diseases and global health	3,0
1a	75	Advanced tools in molecular biology	3,0
1b	32	Molecular and cellular neuroscience	3,0
1b	42	Targeting cellular processes to treat disease	3,0
1b	43	From target to therapy	3,0
1b	47	Biomarkers in population-based research	3,0
1b	56	Health outcome measurement	3,0
1b	63	Biodynamic and toxicokinetic modeling	3,0
2a	25	Introduction to Neuroimaging II: Functional Imaging	3,0
2a	33	Neural stem cells to model neurological disorders	3,0
2a	48	Clinical trials	3,0
2a	54	Applied exercise physiology	3,0
2a	67	Chemical mutagenesis and carcinogenesis	3,0
2b	27	Higher-order cognition and emotion	3,0
2b	38	Biomarkers: let's get personal	3,0
2b	60	Human health risk assessment	3,0
2b	62	Advanced modelling in economic evaluation	3,0
2b	72	Cancer development and immune defense	3,0
1-2c	11	BROK	1,5
3-4c	11	BROK	1,5
3a	19	Vision: From molecule to perception and treatment	3,0

3a	30	Animal models for psychiatric and neurological disorders	3,0
3a	55	From vascular function to vascular failure	3,0
3a	61	Statistical modelling in observational research & Multi level data analysis	3,0
3a	65	Clinical toxicology	3,0
3a	76	Cell movements	3,0
3b	8	Qualitative research	3,0
3b	16	Causal interference in observational research	3,0
3b	29	Experimental models of stress and (mal)adaptation	3,0
3b	37	Cell death in life and disease	3,0
3b	50	Neural control of movement	3,0
3b	66	Reproductive Toxicology and Epidemiology	3,0
3c	12	Research with ionizing radiation	1,5
4a	5	Participatory approaches to innovation	3,0
4a	15	Big data in biomedical research	3,0
4a	17	Genetic association studies	3,0
4a	41	Advanced models of human disease	3,0
4a	51	Sensorimotor integration	3,0
4b	4	Policy making, health systems and public management	3,0
4b	14	Design and analysis of experiments	3,0
4b	20	Hearing: function, dysfunction and treatment	3,0
4b	31	Omics data analysis for systems biology	3,0
4b	57	Health care improvement science	3,0
5a	2	Management skills for a consultant	3,0
5a	6	Science popularisation	3,0
5a	10	Animal research (art. 9)	3,0
5a	52	Disorders of movement	3,0
5a	74	Inflammatory diseases	3,0
5b	3	Policy research	3,0
5b	9	Science presentation and visualization	3,0
5b	13	Data-analysis and modeling in MATLAB	3,0
5b	22	Vanishing boundaries between neurodevelopmental disorders	3,0
5b	23	Biomedical imaging: seeing is understanding	3,0
6a	1	Thinking critically about science	3,0
6a	7	Science communication	3,0
6a	28	Stress-related disorders	3,0

6a	49	Movement science in rehabilitation	3,0
6a	69	Tumors of the digestive tract	3,0
6b	18	Systematic reviews and meta-analyses	3,0
6b	21	Neurodevelopmental disorders: bench to bedside	3,0
6b	34	Reconstructive and regenerative medicine	3,0
6b	68	Urological cancers	3,0
7a	26	Neuroscience of sleep	3,0
7a	40	Nanomedicine	3,0
7a	45	Kidney in health and disease	3,0
7a	48	Clinical trials	3,0
7a	71	Women's cancer	3,0
7b	14	Design and analysis of experiments	3,0
7b	39	Understanding proteins in 3D	3,0
7b	44	Mitochondrial disease drug development	3,0
7b	46	Healthy vs neurogenerative brain aging	3,0

B. Compulsory modules

For all MSc students:

1. Colloquia Scientific integrity
2. Thinking critically about science (BMS01)*

* The course BMS01 is not obligatory for students with an bachelor in biomedical sciences of Radboud university medical science who have completed the courses MED-B3WI or MED-5OMB5.

For the communication profile (MED-BMS6-9)

1. Qualitative research
2. Science, communication and society
3. Science popularisation
4. Science presentation and visualisation

For the consultancy profile (MED-BMS2-5)

1. Policy making, health systems and public management in health care
2. Management skills for a consultant
3. Participatory approaches to innovation
4. Policy research

Appendix 4: Transitional provisions

Transitional provisions Master BMS, EER academic year 2017-2018

1. Students who enrolled in the master programme in 2016-2017 or earlier, but who have not yet completed components of the exam regulations of 2016-2017, are to compile a curriculum of components of the master programme according to the requirements as laid down in the EER of 2017-2018 and 2018-2019.
2. Students who have already completed components of the master programme in accordance with the exam regulations of 2016-2017 or earlier, will graduate under the requirements of the EER which was operative in the year they started the master programme (conditionally). In case of any ambiguity the student is to contact the Board of Examiners. The Board of Examiners' decision is final.
3. The scope of internships is determined by the EER under which the student will graduate. Students may either graduate under the EER of 2016-2017 or that of 2017-2018/20-18-2019. Combinations which are in between both EERs in terms of internship scope are not allowed.

Table 1: Overview of requirements in scope of internships under the Education and Exam Regulations of 2016-2017 and 2017-2018/2018-2019

EER 2016-2017	EER 2017-2018
Conditions scope of placement component of master programme:	
1. At least 2 internships. 2. At least 1 research internship; minimal scope 38 ECs. 3. Additional for communicative and consultancy profiles: at least 1 profile placement; minimal scope 25 ECs.	1. At least 2 internships; minimal total scope 60 ECs. 2. At least 1 internship placement; minimal scope 30 ECs. 3. Additional for communicative and consultancy profiles: at least 1 profile internship; minimal scope 30 ECs.
Scope of placements:	
25 ECs (18 weeks)	24 ECs (16 weeks)
	30 ECs (20 weeks)
38 ECs (27 weeks)	36 ECs (24 weeks)
	42 ECs (28 weeks)
50 ECs (36 weeks)	48 ECs (32 weeks)
	60 ECs (40 weeks)

4. As of academic year 2017-2018 a literature thesis (scope of 6 ECs) is part of the master programme (compulsory). Students working under earlier Education and Exam Regulations may incorporate said literature thesis as an elective (optional).

5. As of academic year 2017-2018 the course programme as laid down in the EER of 2016-2017 and prior is no longer offered. In the academic years that follow (2018 and onwards) taking interim examinations in the "old manner" is no longer possible.
6. As of academic year 2017-2018 the course programme as laid down in the EER of 2016-2017 and prior is no longer offered. Students who did not take one or more components of their compulsory profile or major programme (see EER operative in the year they started the master programme), or who (after re-sit opportunities as mentioned in the previous paragraph) did not achieve a sufficient result, are obliged to take (an) alternative component(s), to replace any missing component(s).

Table 2: Overview courses from previous curriculums and replacement courses from the new course programme

Compulsory components from prior EERs	EER 2017-2018
Communicative profile (compulsory till EER 2016-2017)	
Popularisatie van biomedische wetenschap (MED-5AM06; 5,5 EC)	Science popularisation (MED-BMS06; 3 EC; 5a) + Science presentation and visualization (MED-BMS09; 3 EC; 5b)
Effectieve communicatie over biomedische kennis (MED-5ECWO, 5,5 EC)	Qualitative research (MED-BMS08; 3 EC; 3b) + Science communication and society (MED-BMS07; 3 EC; 6a)
Consultancy profile (compulsory till EER 2016-2017)	
Popularisatie van biomedische wetenschap (MED-5AM06; 5,5 EC)	Science popularisation (MED-BMS06; 3 EC; 5a) + Science presentation and visualization (MED-BMS09; 3 EC; 5b) or alternative courses, in consultation with profile coordinator and Board of Examiners.
Beleidsanalyse en advisering (MED-5OZBC; 5,5 EC)	Management skills for a consultant (MED-BMS02; 3 EC; 5a) + Policy Research (MED-BMS03; 3 EC; 5b)
Interventie en coördinatie in de gezondheidszorg (MED-5ICHC; 5,5 EC)	Policy making, health systems and public management in health care (MED-BMS04; 3 EC; 4b) + Participatory approaches to innovation (MED-BMS05; 3 EC; 4a)

Major Human Pathobiology (compulsory till EER 2015-2016)	
Cause and effect in tissue damage (MED-5P003; 5.5 ECs)	Inflammatory diseases (MED-BMS74, 3 ECs, 5a) + Biomedical imaging: seeing is understanding (MED-BMS23; 3 ECs; 5b) or alternative course, in consultation with study leader / mentor and Board of Examiners.
Repair and regeneration of tissues and organs (MED-5P004; 5.5 ECs)	Reconstructive and regenerative medicine (MED-BMS34; 3 ECs; 6b) + additional course, in consultation with study leader / mentor and Board of Examiners.
Laboratory animal science / radiation safety (MED-5AM01; 5.5 ECs)	Laboratory animal science (MED-BMS10; 3 ECs; 5a) + Research with ionizing radiation (Radiation safety level 5b) (MED-BMS12; 1 EC; 3c) + individual custom plan for remaining 1.5 ECs (in consultation with study advisor and Board of Examiners)
Cellular communication (MED-5P005; 5.5 ECs)	2 courses, choice of: • Targeting cellular processes to treat disease (MED-BMS42; 3 ECs; 1b) • Live and let die (MED-BMS37; 3 ECs; 3b) • Mitochondrial disease drug development (MED-BMS44; 3 ECs; 7b)
Major Human Toxicology (compulsory till EER 2015-2016)	
Chemical mutagenesis and carcinogenesis (MED-5T003; 5.5 ECs)	Chemical mutagenesis and carcinogenesis (MED-BMS67; 3 ECs; 2a) + Risk assessment (MED-BMS60; 3 ECs; 2b)
Cellular, Organs and Systems Toxicology (MED-5T007; 5.5 ECs)	Molecular and cellular toxicology (MED-BMS64; 3 ECs; 1a) + Biodynamic and toxicokinetic modelling (MED-BMS63; 3 ECs; 1b)
Clinical toxicology (MED-5T006; 5.5 ECs)	Clinical toxicology (MED-BMS65; 3 ECs; 3a) + Reproductive toxicology and epidemiology (MED-BMS66; 3 ECs; 3b)
Research and development of drugs (MED-5AM08; 5.5 ECs)	2 courses, choice of: • Targeting cellular processes to treat disease (MED-BMS42; 3 ECs; 1b) • Dev. of dis. ther.: from target to therapy (MED-BMS43; 3 ECs; 1b) • Mitochondrial disease drug development (MED-BMS44; 3 ECs; 7b)

Major Human Risk Assessment (compulsory till EER 2015-2016)	
Molecular epidemiology (MED-5E007; 5.5 ECs)	Reproductive toxicology and epidemiology and (MED-BMS66; 3 ECs; 3b) + Hands-on: genome association analysis (MED-BMS17; 3 ECs; 4a)
Risk characterization (MED-5HRA2; 5.5 ECs)	Chemical mutagenesis and carcinogenesis (MED-BMS67; 3 ECs; 2a) + Risk assessment (MED-BMS60; 3 EC; 2b)
Disaster management (MED-5HRA3; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Health risk management (MED-5HRA4; 5.5 ECs)	Chemical mutagenesis and carcinogenesis (MED-BMS67; 3 ECs; 2a) + Risk assessment (MED-BMS60; 3 ECs; 2b)
Major Epidemiology (compulsory till EER 2015-2016)	
Molecular epidemiology (MED-5E007; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Multivariable statistical methods (MED-5E003; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Clinical epidemiology (MED-5E004; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Genetic epidemiology of Infectious disease epidemiology (MED-5E005 of MED-E006; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Major Health Technology Assessment (compulsory till EER 2015-2016)	
Policy Research (MED-5HTA4; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Health outcome measurement (MED-5HTA3; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Economic analysis in health care (MED-5HTA1; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Advanced modelling in observational research (MED-5HTA2; 5.5 ECs)	Two courses of your choice, in consultation with study leader / mentor and Board of Examiners.
Major Clinical Human Movement Sciences (compulsory till EER 2015-2016)	
Tissue: biomechanics and engineering (MED-5HM02; 5.5 ECs)	Orthopaedic biomechanics in motion (MED-BMS53; 3 ECs; 1a) + Disorders of movement (MED-BMS52; 3 ECs; 5a)
Clinical exercise physiology (MED-5HM03; 5.5 ECs)	Applied exercise physiology (MED-BMS54; 3 ECs; 2a) + From vascular function to vascular failure (MED-BMS55; 3 ECs; 3a)
Neural control of movement and posture	Neural control of movement (MED-BMS50; 3

(MED-5HM04; 5.5 ECs)	ECs; 3b) + Sensorimotor control (MED-BMS51; 3 ECs; 4a)
Clinical rehabilitation sciences (MED-5HM05; 5.5 ECs)	Movement science in rehabilitation (MED-BMS49; 3 ECs; 6a) + Disorders of movement (MED-BMS52; 3 ECs; 5a)

Additional specialisations 'Human and environmental risk assessment (HERA)' and 'Infectious diseases' (NOT compulsory)	
The research profile may be combined with two specialisations of your choice. Students whose first specialisation is HRA or TOX may choose an additional specialisation 'Human and Environmental Risk Assessment' (HERA). Students whose first specialisation is EPI, HTA, PB, or TOX may choose an additional specialisation 'Infectious Diseases' (see appendix 1, EER master BMS 2015).	No replacement courses for these additional specialisations have been listed. There are ample available modules for these specialisations in the new course programme. Attaching these additional specialisations to your degree is neither possible nor necessary anymore.

7. Students who started the master programme in 2015-2016 or earlier will follow the major structure. Where possible they will be supervised by their study leader. In cases in which the study leader is unable to maintain supervision, a mentor from the research institutes will be appointed, in consultation with the programme.
8. Transitional provisions regarding academic distinctions:

   a) Notwithstanding the provisions in appendix 2 Academic Distinctions, until 31 August 2018 the regulations for academic distinctions in effect on 14 September 2014 apply to students who enrolled in the Master programme Biomedical Sciences before 31 July 2015. To those graduating after 31 August 2018 the regulations for academic distinctions as laid down in appendix 2 to these Education and Exam Regulations apply.

   b) Notwithstanding the provisions in appendix 2 Academic Distinctions, until 31 August 2018 the provisions in paragraph 4 do not apply to students who first enrolled in the master Biomedical Sciences between 1 August 2015 and 31 August 2017. These transitional provisions expire on 31 August 2018. To those graduating after 31 August 2018, paragraph 4 of appendix 2 Academic Distinctions in these regulations does apply, subject to the Board of Examiners' authority to decide otherwise on a motivated basis.