

Education and Examination Regulations

2023-2024

Bachelor Chemistry

Radboud Universiteit



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PART I GENERAL PROVISIONS BACHELOR

Section 1. General provisions

Article 1.1 Applicability of these regulations

1. These Education and Examination Regulations (EER) apply to the Bachelor's programmes (the degree programme in which the student is enrolled is hereinafter referred to as 'the programme'), including all their components, of the Faculty of Science. These EER outline the applicable procedures, rights and obligations concerning teaching, interim examinations and final examinations.
2. The present regulations apply to all students enrolled in the programme in the 2023-2024 academic year. Students who started the degree programme before 1 September 2016 and have been continuously enrolled in this programme may appeal to the EER that were active at the time of their initial enrolment in the programme.
3. Course components provided by different faculties or institutions are subject to the rules applicable at the faculty or institution in question. Components offered by the Faculty of Science are subject to the regulations described in at least one of the EER of the Faculty of Science at all times.
4. The faculty offers the following Bachelor's programmes:
 - a. Biology;
 - b. Chemistry;
 - c. Computing Science;
 - d. Molecular Life Sciences;
 - e. Physics and Astronomy;
 - f. Science;
 - g. Mathematics.
5. The degree programmes have a study load of 180 EC.
6. The degree programmes are offered exclusively as full-time programmes.
7. The Biology, Chemistry, Computing Science and Molecular Life Sciences study programmes are taught in English. The other programmes have English components. An overview of this is provided in Article 7.2.

Article 1.2 Executive Board Guidelines

1. In view of the organisation and coordination of the provisions in these regulations, the Executive Board has established the following guidelines: The guidelines can be found in the Appendix:
 - a. Distinction Regulations.
 - b. Fraud Regulations.
 - c. Regulations on and Guidelines for Study Advice in the first year.

Article 1.3 Definition of terms

1. The terms used in these EER, which are also used in the Higher Education and Research Act (Wet op het hoger onderwijs en wetenschappelijk onderzoek, hereinafter, 'the Act') will have the same meaning as in the Act.
2. Apart from the terms referred to in clause 1, the terms below will be understood to have the following meaning:
 - a. Degree programme: the Bachelor's programme, as referred to in Article 7.3a, paragraph 1 of the Act;
 - b. Component: an educational unit as referred to in Article 7.3 paragraphs 2 and 3 of the Act;
 - c. Student: anyone enrolled at Radboud University for participation in a degree programme or in the partial examinations or final examinations of a programme;
 - d. Academic year: the period from 1 September in a given year until 31 August of the following year;
 - e. practical: a practical exercise as referred to in Article 7.13, paragraph 2 under D of the Act;
 - f. Interim examination: an examination testing the knowledge, understanding or skills of the student in relation to a certain unit of study, as well as the assessment of the results of this examination, which is administered by at least one examiner designated by the Examining Board;
 - g. Partial examination: an examination of the knowledge, insight and skills of the student, as well as the assessment of the results of the examination, which in conjunction with one or more other partial examinations constitute the interim examination as referred to under clause f. In these regulations, when the term 'examination' is used; this can also be read as 'partial examination', unless explicitly indicated otherwise;
 - h. Resit: an opportunity to retake a particular examination as referred to in Article 7.10, paragraph 1 of the Act. In these regulations, when the term examination is used this can also be read as resit, unless explicitly indicated otherwise;
 - i. Final examination: an assessment, on the basis of which the Examining Board determines whether all the components pertaining to the Bachelor's programme have been completed successfully. The Examining Board may decide that the final examination also includes an investigation by the Examining Board into the knowledge, insight and skills of the candidate, as well as the assessment of the outcomes of that investigation (in accordance with Article 7.10 WHW);
 - j. Final paper: The final paper is an academic aptitude test with respect to the study programme's specific discipline. The programme-specific part of the EER defines what combinations of products and/or assessments are involved in the study programme's final paper. Final papers involve two examiners;
 - k. Fraud: any behaviour or negligence on the part of the student that, by its nature, is directed toward making it partly or entirely impossible to properly assess the knowledge, insights and skills of the student or of another student;
 - l. Examining Board: the examining board of a degree programme, established in accordance with Article 7.12 of the Act. Also see the Radboud University Structural Regulations;

- m. Examiner: the person designated by the Examining Board to administer the interim examinations, in accordance with Article 7.12 of the Act;
- n. EC: European Credits, i.e. the study load unit in accordance with the European Credit Transfer System;
- o. Work day: Mondays to Fridays, with the exception of official holidays and any other days designated by Radboud University as collective holidays;
- p. Awarding of the degree certificate: the formal confirmation that all the final examination requirements have been met;
- q. Study guide: the guide containing specific information about one of the Faculty of Science's Bachelor's degree programmes;
- r. The University: Radboud University;
- s. The faculty: The Faculty of Science;
- t. The education institute: the organisational unit responsible for the degree programme;
- u. Minor: a cohesive selection of components;
- v. Free elective: a freely-selected, academic, assessable component;
- w. Dual Bachelor's programme: an integrated programme of two study programmes, which allows students to substitute mandatory components of one Bachelor's programme with components from the other Bachelor's, specified in the EER. The study programmes are run simultaneously. See article 3.3.16 for dual Bachelor's programmes;
- x. Rules and regulations: the rules in which the Examination Board explains how it works in accordance with the Education and Examination Regulations.

PART II GENERAL PART

Section 2. Admission to the degree programme and education

Article 2.1 Admission and admission requirements

1. To be admitted to the programme, students must meet the statutory (additional) prior education requirements set out by the Act.
2. Decisions regarding admission are made by the education institute on behalf of the dean.
3. The programme-specific part of these EER lists the admission requirements students must meet to be admitted to the degree programme.

Article 2.2 Substitute requirements for insufficient prior education

Students who have a VWO diploma that does not meet the prior education requirements referred to in Article 2.1 may still enrol, with due observance of the provisions of Article 7.25 paragraph 5 of the Act, on condition that comparable requirements have been met in terms of content, subject to further assessment. The assessment procedure and the requirements are specified in the programme-specific part of these regulations.

Article 2.3 Language requirements

1. Sufficient command of Dutch is required to participate in the programme and to sit examinations in Dutch. Non-Dutch students have met the language requirement for sufficient proficiency in Dutch if they have passed the state examination of Dutch as a second language, level 2.
2. In certain cases, the education institute may assess whether a student is sufficiently proficient in Dutch.
3. Sufficient command of the English language is required to participate in the programme and to sit examinations in English. This requirement is met if the student:
 - a. comes from one of the following countries: Australia, Canada (with the exception of Quebec), Ireland, New Zealand, Singapore, the United Kingdom, the United States, and South Africa; or
 - b. is in possession of a pre-university education (VWO) diploma; or
 - c. is in possession of a pre-university education diploma obtained at an English-language institution in the Netherlands or elsewhere; or
 - d. has a pre-university education diploma obtained at a German secondary education institution, with English as Grundkurs/Hauptfach; or
 - e. has a Bachelor's diploma from a university of applied sciences (HBO); or
 - f. has a Bachelor's diploma from a Dutch university; or
 - g. meets the requirements in the opinion of the programme; or
 - h. has passed one of the assessments listed below:
 - i. the TOEFL with a score of 575 or higher for the paper version;
 - ii. the TOEFL with a score of 90 or higher for the Internet version with none of the sub-scores below 20;

- iii. the IELTS with a score of 6.5 or higher, where none of the sub-scores are lower than a 6.0;
- iv. the Cambridge CAE or CPE with a score of C or higher.

Section 3. Structure and design

Article 3.1 Final examination, degree and distinctions

1. All Bachelor's programmes conclude with the Bachelor's examination.
2. Students who pass the examinations of the Bachelor's degree programme will be awarded a Bachelor of Science (BSc) degree.
3. The degree referred to in paragraph 2 is awarded exclusively if the student has earned at least half of the EC for their degree programme at this University.
4. The Examination Board can award distinctions to students who have successfully passed the degree programme final examination. The rules for awarding distinctions can be found in the annex in the Distinction Regulations.

Article 3.2 General learning outcomes

1. The degree programme has the following learning outcomes for students:
 - a. acquire knowledge, understanding and skills in the relevant area;
 - b. develop academic competences;
 - c. prepare for further study or a future career.
2. Students who have completed one of the faculty Bachelor's programmes, as referred to in Article 7.10a paragraph 1 of the Act, shall be granted unconditional admission to at least one of the Master's programmes at the University.

Article 3.3 Curriculum

1. The degree programme-specific part of these regulations describes all the components that make up the degree programme.
2. For each section, the lecturer must make a study guide available prior to the start of the academic year, which includes a description of the course, tests with weighting factors and deadlines. Contrary to the above provisions, the course description, weighting factors and course deadlines completed in periods 3 and 4 may still be changed until the start of period 2 with the permission of the programme coordinator. The information in the study guide takes precedence.
3. Some modes of instruction have attendance/participation requirements. If this is the case, this will be mentioned in the course description of the study guide. Regular lectures and seminars do not have attendance/participation requirements.
4. The Bachelor's programmes include a component with a study load of 3 EC for the purpose of reflecting on study performance and planning, as well as boosting the development of academic skills.
 - a. A condition for obtaining the course credits (EC) mentioned above is participation in the Academic Language Proficiency course and the corresponding test in the first year of the programme. This does not apply to students who have already completed the course and associated test at Radboud University.

- b. The completion of the Academic Language Proficiency test with a passing grade is not required. A resit for the language test is possible if desired by the student.
5. The degree programme includes a free elective component with a minimal study load of 6 EC. The electives cannot have substantial overlap in content with other components in the nominal space of the study programme.
6. Every programme has a minor component of at least 15 EC in which students can participate in at least one minor.
7. If a minor is not accessible to students of a specific Bachelor's programme, this is mentioned in the programme-specific part of these EER.
8. The minors offered by Radboud University can be found in the study guide. The approval of the Examination Board must be requested if a student wishes to do a minor that is not offered by Radboud University. This minor will be labelled as a "free minor" and needs to meet the following requirements:
 - a. the minor encompasses at least 15 EC and at most 30 EC;
 - b. the minor is thematically coherent;
 - c. there should be no substantial overlap with other parts of the Bachelor's degree programme.
9. The degree programme also includes one or more components of a philosophical nature, in total amounting to at least 3 EC, as well as a writing skills component of 3 EC.
10. Finally, the degree programme includes an individual final aptitude test (hereinafter referred to as the 'Bachelor's thesis') with a study load of 12 EC.
11. In addition to the provisions of paragraph 10, the Bachelor's thesis can be expanded. In all cases where expansion is possible, this will be stated in the programme-specific part of these EER.
12. The composition of the Bachelor's programme compiled by the student must be presented for approval to the Examining Board no later than three months before the expected examination date. The Examining Board will decide whether to grant approval within a month of receiving the submitted programme.
13. Students are permitted to add components to the examination programme. If these components mean that the student exceeds the total study load of 180 EC of the Bachelor's programme, these components are always regarded as extracurricular. This is not an issue if courses have to be split for this purpose. Extra-curricular components do not count towards the determination of the distinction.
14. If a student has a choice between components within the curriculum and the student has passed more than one of these components, then the student can decide which components will count toward their distinction if one or more of the components are extra-curricular.
15. Extracurricular components are admissible if, in the opinion of the Examining Board, the course is testable at an academic level.
16. The two double Bachelor's on offer are: 1) Mathematics, Physics and Astronomy and 2) Mathematics and Computing Science. For students starting in the 2023-2024 academic year and after, there is at most a one-year time difference for starting the study programmes, and certificates have to be applied for separately.

Article 3.4 Sequence of education and interim exams

1. Students may not start the final aptitude assessment (Bachelor's thesis) before obtaining a minimum of 120 EC of the degree programme, including the components of the first year.
2. The programme-specific part of these EER may contain further criteria for the order in which components may be taken and the related interim examinations.

Article 3.5 Types of interim exam

1. Each component of the degree programme is concluded by an interim examination. Interim examinations may comprise more than one modular partial examination and may consist of the following assessment forms:
 - a. written test and/or
 - b. oral test and/or
 - c. presentation and/or
 - d. skills test and/or
 - e. the creation of a discipline-specific product and/or assignment.
2. Prior to the beginning of the academic year, information will be provided in the study guide on each individual component regarding how the interim examinations will be administered and how their results will be determined, taking the weighting of any partial exams into account. At the request of the student or the examiner, the Examining Board may allow an exam to be taken in a form other than precisely announced, if this is not to the detriment of the student.
3. In cases where an interim examination has admission requirements, the admission requirements will be published in the prospectus before the start of the academic year, see Article 3.4, paragraph 2. This requires permission from the programme coordinator. Contrary to the above provisions, the admission requirements for the courses completed in the third and fourth period may still be changed up until the start of the second period, with permission from the programme coordinator.
4. An interim examination has no entry requirements. If students are enrolled in a component, they are admitted to all sub-components, including the interim examination.
5. Students with functional impairments are given the opportunity to take exams in a manner appropriately suited to their impairment. The Examining Board shall, if necessary, seek expert advice and counsel prior to reaching its decision. If the students in question require certain facilities for their interim examinations, they must request these from the Education and Examination Administration of the faculty no later than two weeks before the interim examination.
6. During oral examinations, no more than one person is tested at a time, unless decided otherwise by the Examination Board.
7. Oral interim examinations are not public, unless the Examining Board has deemed otherwise in exceptional cases. Oral exams are recorded or a second examiner or designated observer will be present.

Article 3.6 Exemptions

1. At the request of the student and having heard the examiner involved, the Examination Board may exempt the student, either partially or fully, from sitting for an interim examination if the student:
 - a. has completed a course in a relevant subject at a university or institute of higher vocational education (HBO);
 - b. demonstrates that they have adequate knowledge and skills regarding the component in question as a result of relevant work or professional experience.
3. If the degree programme allows group exemptions, then these are included in the programme-specific part of these regulations.
4. Only one grade for each course may be registered for a single degree programme. If a course is also part of another examination programme, this course will be listed on the qualification as an exemption on the other diploma.
5. Students who were first enrolled after 1 September 2017 can never have more than 70 EC of exemptions, as stated in paragraph 1.
6. All results for a degree programme achieved before the date of the first enrolment are stated as exemptions on the degree programme's diploma. These exemptions do not count towards the 70 EC as stated in clause 4 if the courses are only included in one examination programme.
7. Exemptions as referred to in paragraph 1 cannot be granted for the Bachelor's thesis.
8. As an exception to the provision in paragraph 6, students who do dual Bachelor's programmes can receive exemptions for a Bachelor's thesis if they have completed a Bachelor's thesis for another programme within the Faculty of Science.

Article 3.7 Term of validity for successfully completed interim exams

1. The term of validity of successfully completed interim examinations is unlimited.
2. Passed partial exams are valid indefinitely, unless the lecturer specifies otherwise. The interim examinations are valid at least until the end of the academic year.
3. A successfully passed examination may be taken again. If a student resits an exam, the last result obtained is always valid for the study programme in which the exam is resit.

Article 3.8 Elective programmes

The programme Examining Board shall decide on a request for authorisation to follow a free elective as referred to in Article 7.3d of the WHW. The Examination Board will verify whether the programme fits within the domain of the degree programme under the authority of the Examination Board, whether it is sufficiently cohesive, and whether the level is adequate in the context of the programme's exit qualifications. The programme-specific part of these EER may contain further criteria for the order in which components may be taken and the related interim examinations.

Section 4. Examinations

Article 4.1 Frequency of interim examinations

1. Students are given the opportunity to take the examinations at least twice per academic year per interim examination.

2. Contrary to the provisions of paragraph 1, a degree programme coordinator may decide to offer only one opportunity for an interim examination or partial examination. If only one opportunity is given to take an interim examination or partial examination, this is stated in the programme study guide before the start of the academic year.
3. Notwithstanding the provisions in the first paragraph, there will be at least one opportunity in the following year to take an interim examination for a course that was taught for the final time in a particular academic year.
4. If a certain component is not given in a particular academic year, the opportunity to take the corresponding examination will be offered once in that academic year, as long as the interim examination is administered in written or oral form.

Article 4.2 Registration for course examinations

1. Students who register through Osiris for a component are automatically registered for the first interim examination opportunity in the relevant academic year. This does not apply to students whose enrolment in the degree programme has not yet been completed.
2. Students can register for an examination right up until 11:59 pm on the day prior to a period of five working days before the date of the examination. Registration is no longer possible after this date, unless the head of Education Centre decides otherwise in special cases on behalf of the dean.

Article 4.3 Confirmation of examination results

1. The result of an interim examination is determined by an examiner in the form of a grade on a scale from 1 (lowest possible grade) to 10 (the highest possible grade), consisting exclusively of whole numbers or half numbers. However, a grade of 5.5 is never given. When rounding off between 5 and 6, the rule is that a grade lower than 5.5 is rounded down to a five (5) which is an insufficient grade, meaning the educational component has not been successfully completed; while a 5.5 and higher is rounded up to a six (6), meaning that the educational component has been successfully completed. In addition to results that take the form of a grade, an assessment of 'completed' ('voldaan' - V), 'not completed' ('niet voldaan' - NV), 'pass' ('voldoende' - VLD), 'fail' ('onvoldoende' - OV), 'good' ('goed' - G) and 'very good' ('zeer goed' - ZG) may also be awarded.
2. Notwithstanding the provisions of paragraph 1, partial examinations may also be graded to one decimal point on a scale of 1 to 10. Rounding off of grades is only done for the final grade of the component.

Article 4.4 Publication of results

1. The examiner shall determine the result of the Bachelor's final project within 15 working days after the presentation of the Bachelor's final project has taken place and after the final project has been submitted, using the method specified in the study guide.
2. The examiner shall determine the result of a written interim examination within 10 working days of the date it was administered for interim examinations in the first year of the degree programme, and within 15 working days for interim examinations in the other years of the

degree programme. Here, the precondition applies that there must be at least ten working days between the date of the publication of the result in Osiris and the date of the resit.

3. Contrary to the provisions in paragraph 2, the examiner shall determine the result of an interim examination in the fourth period no later than nine days before the scheduled date of the corresponding resit. The lecturer always has at least five working days after the written examination to determine the result.
4. Contrary to the provisions set out in paragraph 2, the examiner shall determine the result of an oral examination within two working days of the date it was administered.
5. In special cases, the Examination Board may extend the term in which the result must be determined as referred to in paragraph 2 and 3 by a maximum of 10 working days. This is not possible for the interim examinations in the second period of the first year and for the interim examinations in the fourth period. The lecturer will inform students of this extension.
6. In this statement of the result of an interim examination, the student is also informed of their right to inspection, referred to in Article 4.5 as well as about the right of appeal to the Examination Appeals Board.
7. Students may submit an appeal of a decision by the Examination Board to the Examination Appeals Board within six weeks.

Article 4.5 Right of inspection and explanation

1. Students may request access to review and inspect all graded work within at least 30 working days following publication of a written interim examination result. For the results of interim examinations with 'open' questions, at their request, the student shall be granted a copy of their graded work at cost.
2. During the period referred to in paragraph 1 of this Article, any student who has taken an interim examination may review the questions and assignments of the interim examination in question, as well as the standards on which the result was based.
3. Students must be offered at least one opportunity to inspect or have their examinations explained, as referred to in paragraphs 1 and 2. If the student demonstrates that they are or were unable to attend an inspection, they may request the Examination Board to allow them another opportunity to inspect the examination, within the period referred to in paragraph 1 if possible. In all cases, the inspection must take place at least five working days before the resit of an interim examination. For examinations in the fourth period, students may view their work until one working day before the resit.
4. The examiner shall retain all written interim examinations and related papers (assignments or otherwise) that count towards the final result for a period of two years following the date when the examination was administered. Bachelor's final projects must remain available for visitations, accreditations and inspections, and shall be kept for seven years.

Article 4.6 Confirmation of examination results

1. Students are given the opportunity to take the final examination after they have provided sufficient proof of passing the components leading up to the final examination.
2. Examinations are scheduled each month.
3. The Examining Board will determine the result of the final examination, as well as the rules in relation to the manner in which the result of the examination is determined. The result of the

examination is determined by the Examining Board within five weeks following the student's request. If the examination took place in July, the results will be determined no later than 31 August. Where needed in relation to entry requirements for a subsequent programme or the acceptance of a job, a statement can be released within 5 days indicating that the student has met the requirements of the examination. This is only possible if the student has met the criteria specified in clause 1.

4. Prior to determining the result of the final examination, the Examination Board may evaluate and assess the student's knowledge with respect to one or more components or aspects of the programme, if and to the degree to which the results of the related interim examinations justify this.

Article 4.7 Awarding distinctions

The guidelines concerning distinctions can be found in the Appendix of the Distinction Regulations.

Section 5. Study performance, guidance, counselling and evaluation of education

Article 5.1 Study performance and support

1. The faculty dean is responsible for recording student results in such a way that, upon request, the Examination Board can respond by providing the student with an overview of the progress of the study programme within a reasonable time frame.
2. The Dean is responsible for providing adequate student counselling.

Article 5.2 Binding study advice regulations

1. On behalf of the dean, the First-year Study Advice Committee (Commissie Studieadvies Eerste Jaar) will advise students on continuing their degree programme. This will occur at the end of the first year, but no later than 31 August, assuming the student has been registered for the full-time Bachelor's programme as referred to in Article 7.8b of the Act.
2. The First-year Study Advice Committee shall issue positive advice to students who have completed at least 39 EC of the first-year curriculum.
3. The First-year Study Advice Committee will issue negative advice to students if they do not meet the requirements referred to in paragraph 2, unless one or more of the (personal) circumstances, as referred to in Article 5.4, are applicable.
4. In case of a binding rejection, the First-year Study Advice Committee shall formulate a plan to inform the student of negative binding study advice and provide the student with the opportunity to be heard before the binding study advice is issued.
5. In order to determine whether the required number of EC, as referred to in paragraph 2, have been obtained, EC granted for exemptions will be taken into account.
6. If students have registered for a full-time programme after 31 January, the First-year Study Advice Committee will give binding study advice at the end of their second study year. The Committee on Binding Study Advice for First-Year Students will give a positive advice to students if all components from the first year are concluded successfully.

7. Students who switch degree programmes after 31 January, within the Bachelor's programmes Chemistry, Molecular Life Sciences and Science will receive the binding study advice as referred to in paragraph 1 at the end of the first academic year.
8. Students who terminate their enrolment before 1 March will not receive binding study advice. If they re-enrol for the same programme in the following academic year, they will receive binding study advice at the end of the relevant academic year. The second sentence, paragraph 6 shall apply *mutatis mutandis*.
9. A student may appeal negative binding study advice to the Examination Appeals Board within six weeks. The appeal does not suspend the validity of the binding study advice.

Article 5.3 Preliminary recommendations

1. In anticipation of the advice referred to in Article 5.2, the First-year Study Advice Committee will issue preliminary study advice at the end of the first semester (no later than 28 February) on the basis of the results of the student to date.
2. The preliminary study advice is intended as a warning for students who have failed to make adequate progress. The students in question will be invited for an interview with the student advisor to discuss how their study results could be improved on or what other alternative programmes would suit them better.

Article 5.4 Special (personal) circumstances

1. The First Year Study Advice Committee shall take into account special (personal) circumstances in their decision on binding study advice, as stated in Article 2.1 of the Act's Implementation Decree, insofar as these circumstances have been reported to the student advisor, a student dean or another designated person by the student or by someone else on behalf of the student. The student may be asked to further substantiate or justify claims of personal circumstances.
2. Only the circumstances mentioned in or supported by the Act are eligible under special (personal) circumstances.

Article 5.5 Duration of the period of rejection

1. Students who have received negative binding study advice may not re-enrol in the relevant Bachelor's programme for a period of three years, or for any other Bachelor's programmes that the dean has determined fully or partially share the first year. In any case, this concerns the Bachelor's programmes in Chemistry, Molecular Life Sciences and Science.
2. In the event that a student registers again for the degree programme after the period referred to in paragraph 1, this registration will be considered to be the first registration for the purposes of this section.

Article 5.6 No negative binding study advice or deferral of the decision

1. On the basis of the circumstances referred to in Article 5.4 of these regulations, the dean, having heard the First Year Study Advice Committee, may decide not to attach a binding rejection to the negative study advice. Having heard the Committee on Binding Study Advice for First-Year Students, the dean may also decide to not yet attach a binding rejection to the negative study advice, on the basis of the circumstances referred to in Article 5.4.

2. If negative study advice is not yet subject to a binding rejection pursuant to paragraph 1, the First Year Study Advice Committee will issue a binding rejection, as stipulated in Article 5.2, before the end of the second study year if, by that time, the student has yet to obtain the 60 EC from the first year.

Article 5.7 Method of evaluating education

In compliance with the quality assurance system of the university as described in the Handboek Kwaliteitszorg Onderwijs Radboud Universiteit (Radboud University Quality Assurance Manual), the dean shall ensure that the education of the degree programmes is evaluated systematically.

PART III PROGRAMME-SPECIFIC PART

Section 6. Admission to the study programme and education

Article 6.1 Prior education requirements

The following students are admissible to the programme.

1. Students who have a qualification from pre-university education (VWO), including the courses English, Physics, Chemistry and Mathematics B at least; or
2. Students who have a related Bachelor's qualification from a university of applied sciences (HBO) or an equivalent qualification from a university of applied sciences.

Article 6.2 Substitute requirements for inadequate prior education

1. Deficiencies in prior education as referred to in the general section of these EER are met by sitting the test at the level of VWO final examination, to be determined in more detail, to the satisfaction of the educational institution: English, Physics, Chemistry and Mathematics B.
2. The educational institute will appoint one or more examiners with the responsibility of administering the test(s) referred to in paragraph 1. Examiners are appointed by the Examining Board.

Article 6.3 Colloquium doctum

The entrance examination, referred to in Article 7.29 of the Act, is in relation to the following courses at the stated level: English, Physics, Chemistry and Mathematics B.

Article 6.4 HBO first year

Admission on the basis of an HBO first year is only allowed if certificates at VWO level or equivalent have been obtained in the following school subjects: English, Physics, Chemistry and Mathematics B.

Section 7. Structure and design

Article 7.1 Programme-specific learning outcomes

In addition to the general learning outcomes described in the general part of these EER, the Chemistry study programme aims to train students so that in the end they are competent in the following aspects:

Knowledge and understanding

- Major aspects of chemical terminology, nomenclature, conventions, and units
- The major types of chemical reactions and the main characteristics associated with them
- The principles and procedures used in chemical analysis and the characterisation of chemical compounds
- The principal techniques of structural investigations, including spectroscopy
- The characteristics of the different states of matter and the theories used to describe them.

- The principles of thermodynamics and their applications to chemistry
- The principles of quantum mechanics and their application to the description of the structure and properties of atoms and molecules;
- The kinetics of chemical change, including catalysis; the mechanistic interpretation of chemical reactions
- The characteristic properties of elements and their compounds, including group relationships and trends within the Periodic Table
- The structural features of chemical elements and their compounds, including stereochemistry
- The properties of aliphatic, aromatic, heterocyclic and organometallic compounds
- The nature and behaviour of functional groups in organic molecules;
- Major synthetic pathways in organic chemistry, involving functional group interconversions and carbon-carbon and carbon-heteroatom bond formation
- The relation between bulk properties and the properties of individual atoms and molecules, including macromolecules (both natural and man-made), polymers and other related materials
- The structure and reactivity of important classes of biomolecules and the chemistry of important biological processes.

Applying knowledge and understanding

- The capacity to apply knowledge in practice, in particular problem-solving competences, relating to both qualitative and quantitative information
- Numeracy and calculation skills, including such aspects as error analysis, order-of-magnitude estimations, and correct use of units
- Information management competences, in relation to primary and secondary information sources, including information retrieval through online computer searches.
- Information technology skills, such as word-processing and spreadsheet use, data logging and storage, subject-related internet use.
- Skills in planning and time management.

Making judgements

- Ability to analyse material and synthesise concepts
- Ability to include aspects of safety and environment, ethical, societal and economic consequences of chemical, biochemical and technological changes in the design of products
- The capacity to adapt to new situations and to make decisions

Communication

- Interpersonal skills, relating to the ability to interact with other people and to engage in teamwork.
- Communication competences, covering both written and oral communication, in one of the major European languages (English, German, Italian, French, Spanish).

Lifelong learning skills

- Study competences needed for continuing professional development. These will include in particular the ability to work autonomously.
- Ethical commitment

Article 7.2 Programme language

The language of instruction of the Bachelor's programme is English and the exams and interim examinations are administered in English. Notwithstanding the above provisions, elective courses that are (also) part of a different study programme may be taught in Dutch.

The course NWI-FCEM02B Writing about Science is taught in both Dutch (Schrijven over Wetenschap) and in English.

Article 7.3 Composition of the first year

Subject to the general part of these EER, the study programme consists of the following components:

1. Mandatory components (60 EC):

Course code	Course name	EC
NWI-MOL120	Structure of Atoms and Molecules	3
NWI-MOL121	Chemical Analysis 1	3
NWI-MOL122	Chemical Analysis 2	3
NWI-MOL123	Chemical Analysis Lab	3
NWI-MOL124	Organic Chemistry 1	6
NWI-MOL125	Synthesis Lab 1a	3
NWI-MOL126	Synthesis Lab 1b	3
NWI-MOL127	Biochemistry	6
NWI-MOL128	Essentials of Biochemistry Lab	3
NWI-MOL003	Mechanics 1	3
NWI-MOL014	Electricity & Magnetism 1	3
NWI-MOL131	Mathematics	9
NWI-MOL135	Thermodynamics	3
NWI-MOL136	Physical Concepts of Chemical Processes	3
NWI-MOL139	Sustainable Chemistry	3
NWI-MOL140	Molecular Sciences Lab	3
NWI-MOL0861	Academic Skills first year*	0

* NWI-MOL0861 Academic Skills first year is part of the course NWI-MOL086 Academic Skills (3 EC), which is followed throughout the Bachelor's. NWI-MOL0861 contains the mandatory components of year 1, including the midterm progress test and reflection on the RADAr language test.

2. Substitute first-year programme

The first-year programmes Molecular Life Sciences and Science of the Radboud University also apply as the first-year programmes for the study programme, on the understanding that in the ultimate Bachelor's programme in Chemistry at least the following courses must be included: NWI-MOL122 Chemical Analysis 2, NWI-MOL136 Physical Concepts of Chemical Processes, NWI-MOL139 Sustainable Chemistry and NWI-MOL126 Synthesis Lab 1b.

If a student has enrolled during or before the 2018-2019 academic year, the first-year programme of the Molecular Life Sciences study programme can also be used as a replacement for the first-year programme. The same provision applies to the Science study programme, provided it includes NWI-MOL005 or NWI-MOL006 Reactions and Kinetics Project, or provided this project is included in the elective space of the study programme.

Article 7.4 Composition of the second and third years of the programme

1. Mandatory components (69 EC):

Course code	Course name	EC
NWI-MOL150	DATA: Programming and statistics	6
NWI-MOL151	DATA: Techniques and analysis	6
NWI-MOL016	Linear Algebra	3
NWI-MOL155	Quantum mechanics	6
NWI-MOL056	Chemical bonding	3
NWI-MOL160	Mechanics, Electricity, and Magnetism 2	6
NWI-MOL161	Organic Chemistry 2	3
NWI-MOL162	Inorganic Chemistry	3
NWI-MOL163	Synthesis Lab 2	6
NWI-MOL032	Crystal structure	3
NWI-MOL165	Biochemistry 2	3
NWI-MOL040	Thermodynamics 2	3
NWI-MOL157	Physical Organic Chemistry	3
NWI-MOL170 or NWI-MOL170A or NWI-MOL170B	Panorama Science and Society 1	6
NWI-MOL086	Academic Skills	3
NWI-FCEM02B	Writing about Science	3
NWI-FFIL100 or NWI-FFIL101	Introduction to Philosophy and Ethics (of Science)	3

2. Elective components (33 EC)

A minimum of 12 EC must be chosen from the BC1 list. Other components can be chosen from all the Bachelor's programmes taught at the NWI faculty. A minor can be followed within this elective space, EER 23-24 BA Chemistry [English version]

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as described in Article 3.3, paragraph 6 till 8. If the student chooses to do so, at least half of the remaining space needs to be taken up by components from the BC1 list.

BC1 list: Elective courses in the Chemistry curriculum; Not all listed courses are taught every year

Course code	Course name	EC
NWI-BB017C	Advanced Molecular Biology	6
NWI-MOL152 or NWI-MOL075	Data: Structural Bioinformatics Bioinformatics A	3 3
NWI-MOL043	Bioinorganic Chemistry	3
NWI-MOL034	Condensed Matter Lab	3
NWI-MOL050	Condensed Matter	3
NWI-MOL053	Pharmacochemistry	6
NWI-MOL054	Toxicology	6
NWI-MOL059 or NWI-MOL0591 + possibly NWI- MOL0592	Statistical Thermodynamics Statistical Thermodynamics 1 Statistical Thermodynamics 2	6 3 3
NWI-MOL064	Spectroscopy of Atoms and Molecules	3
NWI-MOL065	Chemometrics	6
NWI-MOL071	Crystal Growth	3
NWI-MOL087C	Synthesis Lab 3	6
NWI-MOL091	Sustainable Chemistry 2	3
NWI-MOL093	Stereoselective Synthesis	3
NWI-MOL094 or NWI-MOL171	Physical Organic Chemistry Physical Organic Chemistry 2	3 3
NWI-MOL095	Organic Chemistry	6
NWI-MOL096	Metal Organic Chemistry	3
NWI-MOL106	Applied Quantum Chemistry	3
NWI-MOL108 or NWI-MOL058 or NWI-MOL110 or NWI-MOL057	Magnetic Resonance in Chemistry Introduction to Magnetic Resonance Applied Magnetic Resonance Magnetic Resonance I	3 3 3 3
NWI-MOL111	Biophysical Chemistry	3
NWI-MOL112 or NWI-MOL174 + possibly NWI- MOL176	Quantum Theoretical Chemistry Computational and Theoretical Chemistry 1 Computational and Theoretical Chemistry 2	3 3 3
NWI-MOL169	Catalysis	3
NWI-MOL173	Chemical Biology Lab	3
NWI-MOL177	Polymer Chemistry	3

The courses below are mutually exclusive due to overlapping content:

For other electives, content overlap is not allowed either:

Course code	Course name	EC
NWI-MOL050	Condensed Matter	3
NWI-NB072B	SdM: Vaste stoffysica	3
NWI-MOL041	Quantum Mechanics 1	3
NWI-MOL100	Spectroscopy of Biomolecules	3
NWI-MOL155	Quantum Mechanics	6
NWI-NB013C	Kwantummechanica 1	6
NWI-MOL065	Chemometrics	6
NWI-MOL109	Chemometrics for Molecular Life Sciences	6
NWI-MOL087(C)	Advanced Synthesis Lab (Synthesis Lab 3)	6
NWI-MOL087A/B	Synthesis Lab ((In)Organic)	3
NWI MOL162/ NWI-MOL102	Inorganic Chemistry/Inorganic Chemistry 1	3
NWI-MOL172/ NWI-MOL105	Inorganic Chemistry in Biological Systems / Inorganic Biochemistry	3
NWI-MOL035	Chemistry and Society	3
NWI-MOL170	Panorama Science and Society 1	6

3. Free electives (6 EC)

The study programme includes a free elective space with a minimum study load of 6 EC, to be filled with assessable courses at an academic level.

4. Bachelor's Internship NWI-MOL200A (12 EC)

This consists of theoretical and/or practical research and a report. The internship proposal must be submitted for approval to the internship coordinator in advance. Every year, the study programme publishes a list of approved internship departments in the course guide.

Article 7.5 Definition of final paper

The Bachelor's internship NWI-MOL200A counts as the final paper for the Bachelor's programme as referred to in Article 1.3.2 paragraph j.

Students work on an academic research question under supervision. An oral and written report of this research is created. This also includes a description of the context of the research and a critical reflection on the results with regard to the rules surrounding academic integrity.

Assessment of the final work is based on the research work (theoretical or practical), a written report and an oral presentation.

Article 7.6 Unauthorised minors

The following minors offered within the Faculty of Science may not be part of the Chemistry examination programme:

1. Physical organic chemistry
2. Bio-organic chemistry
3. Sustainable chemistry

Section 8. Transitional provisions

The following transitional provisions apply: even if replacement courses differ in scope, the Bachelor's programme must always contain at least 180 EC.

Students will, in some cases, need to include an additional elective or one less elective in the programme.

The first-year component NWI-MOL0861 is not mandatory for students from cohorts that started before 2019.

Article 8.1 Transitional provisions cohort 2018-2019

This is the curriculum for students who started the programme in the 2018-2019 academic year: Paragraph 8.1.3 provides a complete overview of the substitute courses:

8.1.1 Composition of the first year (60 EC)

Course code	Course name	EC
NWI-MOL001A	Chemical Analysis	3
NWI-MOL004	Mathematics 1	3
NWI-MOL005	Reactions and Kinetics Project	6
NWI-MOL007	Reactions and Kinetics	3
NWI-MOL008A	Biochemistry	6
NWI-MOL009A	Mathematics 2-3	6
NWI-MOL010	Biochemistry Project	6
NWI-MOL014	Electricity & Magnetism 1A	3
NWI-MOL017	Thermodynamics	3
NWI-MOL018	Thermodynamics Project	6
NWI-MOL019	Spectroscopic Techniques	3
NWI-MOL020	Environmental Chemistry and Sustainability	3
NWI-MOL079	Structure of Atoms and Molecules	3
NWI-MOL080	Molecular Structure	3
NWI-MOL003 or: NWI-MOL003B	Mechanics 1A Mechanica 1B	3 3

The first year of the Radboud University study programme Molecular Life Sciences and the first year of the Radboud University programme Science also apply as the first year (propaedeutic phase) of the programme if they include the *Reacties en Kinetiek* (reactions and kinetics) project, of at least 3 EC (NWI-MOL005/NWI-MOL006), or if the Reactions and Kinetics Project is included in the elective space of the following years.

8.1.2 Composition of the second and third years of the programme

1. Compulsory components (63-66 EC)

Course code	Course name	EC
NWI-MOL027	DNA Technology	3
NWI-MOL016	Linear Algebra	3
NWI-MOL040	Thermodynamics 2	3
NWI-MOL033	Programming in Matlab	3
NWI-MOL028	Statistics	3
NWI-MOL032	Crystal Structure	3
NWI-MOL012	Mechanics 2A	3
NWI-MOL041	Quantum Mechanics 1	3
NWI-MOL102	Inorganic Chemistry	3
NWI-MOL044	Inorganic Chemistry Lab	3
NWI-MOL046	Quantum Mechanics 2	3
NWI-MOL042	Fourier Analysis	3
NWI-MOL045	Microscopic Techniques	3
NWI-MOL047	Synthesis of Biomolecules	3
NWI-MOL056	Chemical Bonding	3
NWI-MOL086	Academic Skills	3
NWI-FCEM02B	Writing about Science	3
NWI-FFIL101 or: NWI-FFIL100	Introduction Philosophy and Ethics of Science	3
NWI-MOL025 and NWI-MOL050 or: NWI-BB017C	Electricity and Magnetism 2A Condensed Matter Biochemistry-Molecular Biology II	3 3 6
NWI-MOL048A or NWI-MOL049A or NWI-MOL034	Organic Chemistry Lab Chemical Biology Project Condensed Matter Lab	6 6 3

2. Elective components (36-39 EC)

Within the elective components, at least 15-18 EC need to be chosen from list BC1, in such a way that the total of 7.4.1 plus the total of the components from list BC1 list amount to at least 81 EC.

BC1 list: Elective courses within the Chemistry curriculum

Course code	Course name	EC
NWI-MOL029	Bioinformatics	3
NWI-MOL035	Chemistry and Society	3
NWI-MOL043	Bioinorganic Chemistry	3
NWI-MOL053	Pharmacochemistry	6
NWI-MOL054	Toxicology	6
NWI-MOL059	Statistical Thermodynamics	6

Or NWI-MOL0591 + possibly		
NWI-MOL064	Spectroscopy of Atoms and Molecules	3
NWI-MOL065	Chemometrics	6
NWI-MOL071	Crystal Growth	3
NWI-MOL075	Bioinformatics A	3
NWI-MOL087A	Synthesis Lab (Organic Chemistry)	3
NWI-MOL087B	Synthesis Lab (Inorganic Chemistry)	3
NWI-MOL091	Green Chemistry	3
NWI-MOL093	Stereoselective Synthesis	3
NWI-MOL094	Physical Organic Chemistry	3
NWI-MOL095	Organic Chemistry	6
NWI-MOL096	Metalorganic chemistry (if available)	3
NWI-MOL106	Applied Quantum Chemistry	3
NWI-MOL108	Magnetic Resonance in Chemistry	3
NWI-MOL110	Applied Magnetic Resonance	3
NWI-MOL111	Biophysical Chemistry	3
NWI-MOL050	Condensed Matter	3
NWI-BB017C	Biochemistry-Molecular Biology II	6
NWI-MOL048A or NWI-MOL049A or NWI-MOL034	Organic Chemistry Lab Chemical Biology Project Condensed Matter Lab	6 6 3

The remaining 21 EC need to be filled with Bachelor's courses from the Faculty of Science, at post-propedeutic level (including the list above). On the understanding that the courses below are in any event mutually exclusive:

Course code	Course name	EC
NWI-MOL050	Condensed Matter	3
NWI-NB072B	SdM: Vaste stoffysica	3
NWI-MOL041	Quantum Mechanics 1	3
NWI-MOL100	Spectroscopy of Biomolecules	3
NWI-MOL155	Quantum Mechanics	6
NWI-NB013C	Kwantummechanica 1	6
NWI-MOL065	Chemometrics	6
NWI-MOL109	Chemometrics for Molecular Life Sciences	6
NWI-MOL087(C)	Advanced Synthesis Lab	6
NWI-MOL087A/B	Synthesis Lab ((In)Organic)	3
NWI MOL162/ NWI-MOL102	Inorganic Chemistry/Inorganic Chemistry 1	3
NWI-MOL172/ NWI-MOL105	Inorganic Chemistry in Biological Systems / Inorganic Biochemistry	3
NWI-MOL035	Chemistry and Society	3
NWI-MOL170	Panorama Science and Society 1	6

A minor can be followed within this elective space. If the student chooses to do so, at least half of the remaining space needs to be taken up by components from list BC1, provided above.

3. Free electives (6 EC)

4. Bachelor's internship NWI-MOL200/MOL200A (12 EC)

A final aptitude test (practical work and a report) with a study load of 12 EC. Every year, the study programme publishes a list of approved internship departments for each specialisation.

8.1.3 Substitute courses for students in the 2018-2019 cohort

The following mandatory courses in the programme of chemistry, MLS or science students with year of commencement before 2019	Have been replaced by/could be replaced by:
NWI-MOL001A Chemical Analysis (3 EC) + 3 EC elective space	NWI-MOL121 Chemical Analysis 1 (3 EC) + NWI-MOL123 Chemical Analysis Lab (3 EC)
NWI-MOL004 Mathematics 1 (3 EC) + NWI-MOL009A Mathematics 2-3 (6 EC)	NWI-MOL131 Mathematics (9 EC)
NWI-MOL005 Reactions and Kinetics Project (6 EC)	NWI-MOL125 Organic Chemistry Lab 1a (3 EC) + NWI-MOL126 Organic Chemistry Lab 1b (3 EC)
NWI-MOL006 Reactions and Kinetics Project (3 EC)	NWI-MOL125 Organic Chemistry Lab 1a (3 EC)
NWI-MOL008A Biochemistry (6 EC)	NWI-MOL127 Biochemistry (6 EC)
NWI-MOL010 Biochemistry Project (6 EC) (MLS students)	NWI-MOL129 Biochemistry Lab (6 EC)
NWI-MOL010 Biochemistry Project (6 EC) (Chemistry students)	NWI-MOL128 Essentials of Biochemistry Lab + 3 EC elective
NWI-MOL017 Thermodynamics (3 EC)	NWI-MOL135 Thermodynamics (3 EC)
NWI-MOL018 Thermodynamics Project (6 EC)	NWI-MOL140 Molecular Sciences Lab (3 EC) + NWI-MOL136 Physical Concepts of Chemical Processes (3 EC)
NWI-MOL019 Spectroscopic Techniques (3 EC)	NWI-MOL122 Chemical Analysis 2 (3 EC)
NWI-MOL020 Environm. Chem. and Sustainability (3 EC)	NWI-MOL139 Sustainable Chemistry (3 EC)
NWI-MOL021 Cell Biophysics Project (6 EC)	NWI-MOL137 Cell Biophysics (6 EC)
NWI-MOL022 Aspects of Molecular Life Sciences (3 EC)	NWI-MOL139 Sustainable Chemistry (3 EC)
NWI-MOL024 Fourier Analysis and Mech. Waves (3 EC)	a 3 EC physics elective
NWI-MOL079 Structure of Atoms and Molecules (3 EC)	NWI-MOL120 Structure of Atoms and Molecules (3 EC)
NWI-MOL089 Object Orientatie (3 EC) or NWI-IPC002 Language and Automata (3 EC)	a 3 EC Computing Science elective course
NWI-MOL103B Panorama Science (6 EC)	NWI-MOL140 Molecular Sciences Lab (3 EC) + NWI-MOL136 Physical Concepts of Chemical Processes (3 EC)
NWI-MOL103B Panorama Science (6 EC)	or: NWI-MOL140 Molecular Sciences Lab (3 EC) + NWI-NP021D Golven en Optica (3 EC)
NWI-MOL103B Panorama Science (6 EC)	or: NWI-MOL140 Molecular Sciences Lab (3 EC) + NWI-NP032B Inleiding Neuroscience (3 EC)
NWI-MOL080 Molecular Structure (3 EC) + NWI-MOL007 Reactions and Kinetics (3 EC)	NWI-MOL124 Organic Chemistry 1 (6 EC)

NWI-MOL003 Mechanics 1A (3 EC) + NWI-MOL014 Electricity and Magnetism 1A (3 EC)	NWI-MOL130 Physics 1 (6 EC) only in 2019
NWI-MOL003/B Mechanics 1A/B (3 EC) + NWI-MOL012 Mechanics 2A/NWI-NP036 Rotaties en Period. Bewegingen (3 EC)	NWI-MOL133 Mechanics and Lab (6 EC)
NWI-MOL014 Electricity and Magnetism 1A (3 EC) + NWI-MOL025 Electricity and Magnetism 2A (3 EC) (science)	NWI-MOL134 Electricity and Magnetism (6 EC)
or NWI-NP037 Electriciteit en Magnetisme (6 EC)	NWI-MOL134 Electricity and Magnetism (6 EC)
NWI-MOL047 Synthesis of Biomolecules (3 EC)	NWI-MOL161 Organic Chemistry 2 (3 EC)
NWI-MOL048A Organic Chemistry Lab (6 EC)	NWI-MOL163 Synthesis Lab 2 (6 EC)
NWI-MOL049A Chemical Biology Project (6 EC)	NWI-MOL163 Synthesis Lab 2 (6 EC)
NWI-MOL044 Inorganic Chemistry Laboratory (3 EC)	NWI-MOL163 Synthesis Lab 2 (6 EC)
NWI-MOL102 Inorganic Chemistry (3 EC)	NWI-MOL162 Inorganic Chemistry 1
NWI-MOL012 Mechanics 2A (3 EC) + NWI-MOL025 Electricity & Magnetism 2A (3 EC)	NWI-MOL160 Mechanics, Electricity, and Magnetism 2 (6 EC)
NWI-MOL028 Statistics (3 EC) + NWI-MOL033/MOL076/MOL085 Programming (in) Matlab (3 EC)	NWI-MOL150 Data: Statistics and Programming (6 EC)
NWI-MOL036 General Physiology (3 EC) + 3 EC elective	NWI-MOL167 Comparative Physiology (6 EC)
NWI-MOL041 Quantum Mechanics 1 (3 EC) + NWI-MOL046 Quantum Mechanics 2 (3 EC)	NWI-MOL155 Quantum Mechanics (6 EC)
NWI-MOL042 Fourier Analysis (3 EC) + NWI-MOL045 Microscopic Techniques (3 EC)	NWI-MOL151 Data: Analysis and Techniques (6 EC)
NWI-MOL050 Condensed Matter (3 EC)	NWI-MOL157 Physical Organic Chemistry (3 EC)
NWI-MOL075 Bioinformatics A (3 EC)	NWI-MOL152 Data: Bioinformatics (3 EC)/Data: Structural Bioinformatics (3 EC)
NWI-MOL105 Inorganic Biochemistry (3 EC)	NWI-MOL172 Inorganic Chemistry in Biological Systems
NWI-MOL031 Biochemistry in the Living Cell (3 EC) and/or NWI-MOL038 Genetics (3 EC)	NWI-MOL158 Biomolecules at Work (6 EC)
NWI-MOL037 Molecular Life Sciences and Society (3 EC)	NWI-MOL170 Panorama Science and Society 1 (6 EC)
NWI-MOL092 Panorama Science 2: Energie en duurzaamheid (6 EC)	NWI-GCSE002 Energy and Sustainability (3 EC) + 3 EC elective
NWI-MOL099 Panorama Science 3: Food and Health (6 EC)	NWI-MOL175 Panorama Science and Society 2 (6 EC)

Article 8.3 Transitional provisions for cohorts 2019-2020, 2020-2021, 2021-2022, 2022-2023

The programme for these cohorts is the same as the programme described in Articles 7.3 and 7.4. However, certain subjects may have been taken in the first year instead of the second year and vice versa.

NWI-MOL135 Thermodynamics is also called MOL135 Physical Chemistry 1

NWI-MOL136 Physical Concepts of Chemical Processes is also called MOL136 Physical Chemistry 2

NWI-MOL125 Synthesis Lab 1a is also called Organic Chemistry Lab 1a

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PART IV FINAL PROVISIONS

Section 9. Final provisions

Article 9.1 Safety net scheme and hardship clause

1. In all cases not covered fully or clearly by these regulations, the decision lies with the dean.
2. In all cases in which these regulations may result in an unreasonable or unfair situation for individual students, the Examining Board or the dean is authorised to make an exception to the provisions in these Education and Examination Regulations.

Article 9.2 Establishment and amendments

1. Contrary to the provisions in Article 7 of the Structure Regulations, these regulations are drawn up or amended by the dean after receiving advice from the programme committees and after having obtained the approval of the Joint Assembly of the faculty.
2. An amendment to these regulations has no impact on the current academic year, unless this would disproportionately damage the interest of the students.
3. Contrary to paragraph 1, the dean is authorised to drop elective components from the curriculum should the circumstances be deemed impossible for offering these courses.

Article 9.3 Entry into force

These regulations enter into force on 1 September 2023.

Article 9.4 Publication

1. The dean is responsible for publishing these regulations and any amendments thereto.
2. Interested parties may consult these regulations via the prospectus.

As established by the dean on 26-06-2023.

Appendix 1: Guideline for awarding distinctions

- a. With due observance of the provisions set out in this Article, the Examining Board is responsible for the decision of whether a distinction shall be awarded and if so, which distinction.
- b. The distinction shall be calculated on the basis of all components of the examination programme for which a mark has been awarded on a scale from 1 to 10, with the exception of extra-curricular components.
- c. The number of EC of the component referred to in paragraph b shall serve as the weighting factor for the calculation of the weighted average result, unless stipulated otherwise in the programme-specific part of the EER.
- d. The distinction 'cum laude' shall be awarded if the weighted average result of the final assessment of the components referred to in paragraph b is equal to or higher than 8.0. Both the EC-weighted average of the assessments of all exam parts with a size of **less than 20 EC** and the EC-weighted average of the assessments of all exam parts with a size **equal to or more than 20 EC** must be at least 8.0 before any rounding off.
- e. The distinction 'summa cum laude' shall be awarded if the weighted average result of the final assessment of the components referred to in paragraph b is at least 9.0. Both the EC-weighted average of the assessments of all exam parts with a size of **less than 20 EC** and the EC-weighted average of the assessments of all exam parts with a size **equal to or more than 20 EC** must be at least equal to 9.0 before any rounding off.
- f. A distinction shall not be awarded if more than 10% of the total study load of the examination programme (being one or more components) has been resat, unless the Examining Board decides otherwise, stating the reasons for this decision.
- g. A distinction shall not be awarded if exams have been resat more than once, unless the Examining Board decides otherwise, stating the reasons for this decision.
- h. A distinction is not granted if the extent of the granted exemption includes more than 50% of the programme, considering possible further restrictions to the number exemptions as stated in the EER.
- i. The distinction shall not be awarded if fraud was discovered in one of the exams of the examination programme.

Appendix 2: Fraud Regulations

Section 1. Introductory provisions

Article 1. Objective and scope of the regulations

The Dean of the Faculty of Science at Radboud University has drawn up the following regulations with a view to preventing fraud during interim and final examinations as referred to in Article 7.12b of the Higher Education and Research Act (Wet op het Hoger onderwijs en Wetenschappelijk onderzoek (hereinafter: WHW)) that are part of the teaching and exams of the study programmes in the Faculty of Natural Sciences, Mathematics and Computer Science at Radboud University.

Article 2. Definitions

The terms that are used in these regulations – in so far as these terms are also used in the WHW or the Education and Examination Regulations of the degree programme (hereinafter: the EER) – have the same meaning that is given to these terms in the WHW and the EER.

Section 2. Definition of fraud, procedure and sanctions

Article 3. Definition of fraud

1. At Radboud University, fraud is understood to mean any act or omission by a student which, by its nature, is intended to render the proper assessment of the knowledge, understanding and skills of that student or another student fully or partially impossible.
2. Fraud in general is defined as:
 - a. Fraud when taking written interim and final exams, including:
 - i. Having access to unauthorised aids as referred to in the House Rules for Radboud University Examination Rooms;
 - ii. Looking at the work of others or exchanging information;
 - iii. Impersonating someone else or allowing someone else to impersonate oneself during an interim or final exam.
 - b. Committing fraud when writing theses or other papers or completing assignments, including:
 - i. Plagiarism in the sense of using or copying someone else's texts, data or ideas without complete and correct references to sources, plagiarism in the sense of copying the work of another student and presenting this as one's own work and other specifically academic forms of plagiarism;
 - ii. The fabrication or falsification of research data;
 - iii. The submission of a thesis or other paper that has been written by someone else.
 - c. Other fraud during examination, including:
 - i. Taking possession of assignments, answer keys and the like, prior to the time the exam takes place;

- ii. Changing answers to questions on an examination after it has been submitted for assessment;
 - iii. Providing incorrect information when requesting exemption, an extension of the validity period, and other similar requests regarding an examination.
3. Any attempt at fraud will also be considered fraud in the sense of these regulations.

Article 4. Procedure for determining fraud

1. In the event that fraud is suspected, the Examining Board or the examiner will immediately inform the student. If fraud is suspected while an exam is being given, then the Examining Board or the examiner will provide the student with the opportunity to complete the exam.
2. The Examining Board or the examiner may order the student to provide the materials involved in the suspicion of fraud.
3. For the application of the provisions in paragraphs 1 and 2, 'examiner' is understood to mean the invigilator or another Radboud University staff member.
4. The Examining Board or the examiner will draw up a report of the suspected fraud. If the examiner draws up the report, they will send it to the Examining Board immediately.
5. The Examining Board will immediately make the report referred to in paragraph 4 available to the student and will begin an investigation into it. The Examining Board will provide the student with the opportunity to respond to the report in writing. The Examining Board will hear both the examiner and the student.
6. Within four weeks of making the report available to the student, the Examining Board will determine whether there is evidence of fraud. The Examining Board will inform both the student and the examiner of its decision in writing. The period of four weeks may be extended by two weeks.

Article 5. Remedial measures

If the Examining Board determines that fraud has been committed:

- a. The Examining Board will declare that the relevant exam taken by the student (or students) in question is considered invalid, and;
- b. It will document the identification of fraud and, if applicable, the sanctions imposed in the student's file.

Article 6. Sanctions

1. If the Examining Board determines an instance of fraud, it is able to:
 - a. Decide that the student is no longer able to sit for one or more exams during a period to be defined by the Examining Board, being no longer than a year;
 - b. Decide that no distinction will be granted on the student's diploma;
 - c. Make a recommendation to the Dean of the Honours Academy that the student should not be admitted to the honours programme of the university or the faculty, or recommend that the student's participation in the honours programme of the university or the faculty be terminated.
2. If the Examining Board establishes that serious fraud has been committed:

- a. the Examining Board can recommend to the Executive Board that the student's enrolment in a study programme be definitively terminated;
 - b. The Executive Board may definitively terminate the student's enrolment in a study programme at the suggestion of the Examining Board.
3. As described in the Distinction Guidelines, a distinction will not be awarded if fraud has been detected in one or more of the components in the entire examination programme.
4. The sanctions as specified in this provision will be imposed on the day following the date on which the student has been informed of the decision to impose the sanctions.

Section 3. Transitional provisions

Not applicable.

Section 4. Final provisions

Article 7. Decisions and legal protection

1. Decisions on the basis of these regulations may be sent to the student digitally or by email.
2. For decisions based on these regulations, the student is permitted to appeal the relevant decision with the Examination Appeals Board (EAB) within six weeks of the decision date.

Article 8. Adoption and amendments

1. This scheme is adopted and amended by the dean.
2. If the content of these regulations relates to duties and powers of the Examining Board of the study programme, that content must be approved by that Examining Board.

Article 9. Entry into force

These regulations enter into force on 1 September 2023. On that date, these regulations will replace the preceding regulations.

Article 10. Publication

1. The dean is responsible for publishing these regulations and for appropriately disclosing any amendments thereto.
2. For the purpose of proper and clear provision of information to students and prospective students, the dean includes these regulations as an appendix to the Education and Examination Regulations (Onderwijs- en Examenreglement (EER)).

As determined by the dean on 26-06-2023 and ratified by the Examination Board on 10-07-2023.

Appendix 3: Regulations First Year Study Recommendation

Section 1. Introductory provisions

Article 1. Legal basis for the regulations

The regulations are based on article 7.8b of the Higher Education and Research Act (*Wet op het hoger onderwijs en wetenschappelijk onderzoek*), hereinafter to be referred to as 'the Act', and the guidelines adopted by the executive board dated 11 October 2022, the Guidelines First Year Study Recommendation (*Richtlijn Studieadvies eerste jaar*).

Article 2. Purpose of the regulations

These regulations include the implementation rules referred to in article 7.8b, sixth paragraph, of the Act.

Article 3. Scope of the regulations

These regulations apply for students who have not yet completed the propaedeutic phase of the bachelor's degree programme, including former students in the academic year in which they were registered for the propaedeutic phase of a bachelor's degree programme.

Article 4. Definitions

1. The terms that are used in these regulations – in so far as these terms are also used in the Act – have the same meaning that is given to these terms in the Act, unless paragraph 2 provides otherwise.
2. Without prejudice to the provisions in paragraph 1, the following terms have the following meaning in these regulations:
 - a. rejection: a rejection attached to a recommendation as referred to in article 7.8b, third paragraph, of the Act, on the basis of which the registration of the student for the relevant degree programme is terminated and reregistration is not possible;
 - b. propaedeutic phase: the first period in a bachelor's degree programme with a study load amounting to 60 European Credits (hereinafter: ECs);
 - c. recommendation: a study recommendation as referred to in article 7.8b, third paragraph, of the Act regarding the continuation of the degree programme;
 - d. study progress standard: the requirements with respect to the study results as referred to in article 7.8b, third paragraph, of the Act expressed in a number of ECs;
 - e. Implementation Decree: Implementation Decree Higher Education and Research Act (*Uitvoeringsbesluit WHW (Wet op het hoger onderwijs en wetenschappelijk onderzoek) 2008*).

Section 2. Recommendation and rejection

Article 5. Making recommendations regarding the continuation of studies

1. In the propaedeutic phase of a bachelor's degree programme, the dean issues a recommendation to every student regarding the continuation of their studies. The point in time the recommendation is made is laid down in section 3.
2. The recommendation to be made by the dean may be construed as:
 - a. A 'positive recommendation' as referred to in article 6, i.e. a recommendation to students to continue their degree programme, or
 - b. A 'negative recommendation' as referred to in article 7, i.e. a recommendation to students not to continue their degree programme.
3. Contrary to the provisions of paragraph 1, no recommendation is issued to students who terminated their registration for the degree programme before 1 March of the first year of registration.
4. Contrary to the provisions of paragraph 1, no recommendation is issued to students who were registered for the first time for the degree programme after 31 January and who have not reregistered for the next academic year.

Article 6. Positive recommendation

The dean issues a 'positive recommendation' if the student has met the relevant study progress standard referred to in section 3.

Article 7. Negative recommendation

The dean issues a 'negative recommendation' if the student has failed to meet the relevant study progress standard referred to in section 3.

Article 8. Rejection following negative recommendation

1. The dean attaches a rejection to the 'negative recommendation' referred to in article 7, unless the student has failed to meet the study progress standard as a result of one or more personal circumstances listed and referred to in section 4.
2. The rejection referred to in paragraph 1 has a duration of three years.
3. The dean may only attach a rejection to a recommendation if:
 - a. such facilities have been made available in the propaedeutic phase of the relevant degree programme that the opportunities for proper study progress have been safeguarded, and
 - b. the dean has issued a warning, as referred to in article 21, to the student.
4. The rejection referred to in paragraph 1 may extend to degree programmes with the same propaedeutic year.
5. If the dean should attach a rejection to a negative recommendation, the student is not deemed suitable for the degree programme.

6. [optional, insert if applicable:] The provisions in this article do not apply for part-time students.

Article 9. Postponed decision on recommendation

1. If no opinion can be given on the student's unsuitability for the degree programme because of personal circumstances that have occurred in the first year of study, the dean postpones issuing the recommendation.
2. In exceptional circumstances, the dean may decide, stating reasons, to postpone the recommendation once again.

Section 3. Study progress standard

Article 10. Study progress standard upon first registration before 31 January

Students who have registered for the first time for the propaedeutic phase of a bachelor's degree programme receive the recommendation at the end of the same academic year, at the latest on 31 August of that academic year. The following study progress standards apply:

- a. for a full-time bachelor's degree programme: 39 ECs.

Article 11. Study progress standard upon first registration after 31 January

Students who have registered for the first time in the previous academic year after 31 January for the propaedeutic phase of a bachelor's degree programme receive the recommendation at the end of the next academic year, at the latest on 31 August of that academic year. The following study progress standards apply:

- a. for a full-time bachelor's degree programme: 60 ECs.

Article 12. Study progress standard upon reregistration after discontinuation of studies

Students who have not received, with due consideration of article 5, paragraph 3 or 4, a recommendation in a previous first year of registration and who reregister for the degree programme within a period of three years, receive the recommendation at the end of the academic year in which the student has reregistered for the degree programme, at the latest on 31 August of that academic year. The following study progress standards apply:

- a. for a full-time bachelor's degree programme: 60 ECs.

Article 13. Study progress standard after postponed decision on recommendation

Students for who the decision concerning the recommendation, with due consideration for article 9, has been postponed receive the recommendation at the end of the next following academic year, at the latest on 31 August of that academic year. The following study progress standards apply:

- a. for a full-time bachelor's degree programme: 60 ECs.

Article 14. Decision whether the standard has been complied with

In order to determine whether the study progress standards referred to in this section have been complied with, only ECs are taken into account that have been obtained for components in the examination programme of the propaedeutic phase of the relevant bachelor's degree programme, including ECs that have been granted for exemptions for the relevant components.

Article 15. Dual degree programmes

If required, the dean may depart from the provisions in this section with regard to students who have registered for an approved dual degree programme.

Section 4. Provisions for study progress; personal circumstances

Article 16. Facilities for study progress

The degree programme offers facilities to safeguard the opportunities for proper study progress. For these facilities, we refer you to the student advisor who is available to every student.

Article 17. Personal Circumstances - Implementation Decree

When deciding on attaching a rejection to a negative recommendation, the dean takes into consideration personal circumstances as referred to in article 2.1 of the Implementation Decree (*Uitvoeringsbesluit*).

Article 18. Personal Circumstances - Radboud University

In addition to the provision of article 17, the dean, when issuing the recommendation, also takes into consideration the following personal circumstances as personal circumstances:

- a. the student's taking part in sports at top level;
- b. the student's being a top talent in arts or culture.

Article 19. Prompt notice of personal circumstances

In the event a student cannot (possibly) meet the study progress standard as a result of any circumstances referred to in this section, the student must inform the study advisor as soon as possible. Upon prompt notice of personal circumstances that are prejudicial to study progress, the institute may take measures to safeguard the study progress as much as possible.

Article 20. Burden of proof personal circumstances

The student may be requested to substantiate the claim of personal circumstances in more detail or to make a plausible case for these circumstances.

Section 5. Procedure and decision making

Article 21. Preliminary recommendation and interview

As soon as possible after the end of the first semester in which the student is registered for a degree programme, the dean issues a preliminary recommendation on the basis of the results registered at that moment. The preliminary recommendation is meant as a warning for students who have failed to make adequate study progress. The relevant students are advised to make an appointment with the study advisor to discuss in which way their performance could be improved or which other degree programme could be an alternative.

Article 22. Information by study advisor in writing

1. If the student has failed to meet the applicable study progress standard, the dean obtains information, prior to the decision on the recommendation, from the study advisor with respect to the student's personal circumstances, as referred to in section 4. The study advisor may then advise the dean on the recommendation to be issued.
2. The study advisor supplies the information referred to in the previous paragraph in writing. The student receives a copy of it.

Article 23. Intended recommendation

1. In view of the information provided by the study advisor referred to in article 22, the dean drafts an intended decision on the recommendation.
2. The dean communicates the intention referred to in paragraph 1 to the student and offers the student the opportunity to be heard before the decision is made.

Article 24. Hearing the student

1. In view of the provisions of article 23, the student is heard, upon request, by the dean.
2. In the event the student does not make use of the opportunity to be heard, the dean automatically converts the intended decision referred to in article 23 in an identical decision on the recommendation.
3. In the event the student makes use of the opportunity to be heard, the dean decides on the recommendation with due observance of what was discussed during the hearing.