EDUCATION AND EXAMINATION REGULATIONS

BACHELOR OF SCIENCE APPLIED MATHEMATICS

A. UNIVERSITY PART

B. PROGRAMME SPECIFIC PART

2026-2027 academic year

Introduction to the Education and Examination Regulations for Bachelor's degree programmes at the Faculty of Electrical Engineering, Mathematics and Computer Science.

General

The Dutch Higher Education and Research Act (Wet op het hoger onderwijs en wetenschappelijk onderzoek, WHW) of 1993 requires a broad outline of the teaching programme and examining for each degree programme to be recorded in the Education and Examination Regulations (EER (Dutch: OER)).

In accordance with Section 7.13, Paragraph 1, of the WHW, the EER must contain sufficient and clear information about the degree programme or group of programmes to which they apply. Section 7.13, Paragraph 2, of the WHW lists those issues that must, as a minimum, be stipulated in the EER with respect to procedures, rights and responsibilities relating to the teaching and examinations that are part of each degree programme or group of programmes. The WHW also includes a number of separate obligations relating to the inclusion of rules within the EER.

The model EER is subdivided into two sections (Section A and Section B), which together form the EER. Section A, which can be seen as the university section, includes provisions that apply to all Bachelor's degree programmes. Section B contains the provisions that are specific to the particular Bachelor's degree programme.

Contents

A University part **5**
Section 1 General provisions . . . 6
Article 1.1 Applicability of these regulations . . . 6
Article 1.2 Definitions . . . 6
Section 2 Contents and structure of the degree programme . . . 8
Article 2.1 Intended learning outcomes and structure of the degree programme . . . 8
Article 2.2 The degree programme's language of instruction . . . 9
Article 2.3 Exemption . . . 10
Article 2.4 Individualised programme . . . 10
Section 3 Teaching and Assessment . . . 10
Article 3.1 General . . . 10
Article 3.2 Online assessment . . . 11
Article 3.3 Results . . . 11
Article 3.4 Modules . . . 12
Article 3.5 Registration . . . 12
Article 3.6 Description of modules and assessment schedule . . . 12
Article 3.7 Oral assessments . . . 13
Article 3.8 Assessment deadline, examination and test date . . . 13
Article 3.9 Period of validity of results . . . 13
Article 3.10 Right of inspection and discussion . . . 14
Article 3.11 Teaching evaluation . . . 14
Section 4 Final examinations and diploma . . . 14
Article 4.1 Examination Board . . . 14
Article 4.2 Final examination and degree . . . 14
Article 4.3 Diploma . . . 15
Section 5 Student guidance . . . 16
Article 5.1 Student guidance . . . 16
Article 5.2 Special facilities . . . 16
Article 5.3 Studying with a functional impairment . . . 17
Article 5.4 Request for facilities . . . 17
Section 6 (Binding) recommendation on continuation of studies (BSA) . . . 17
Article 6.1 Preliminary recommendation on continuation of studies . . . 17
Article 6.2 (Binding) recommendation on continuation of studies . . . 18
Article 6.3 Discontinuation of the programme . . . 19
Article 6.4 Postponement of recommendation on continuation of studies . . . 19
Section 7 Amendments, transitional arrangements, appeals and objections . . . 19
Article 7.1 Conflicts with the regulations . . . 19
Article 7.2 Administrative errors . . . 20
Article 7.3 Amendments to the Regulations . . . 20
Article 7.4 Transitional arrangements . . . 20
Article 7.5 Assessment of the education and examination regulations . . . 20
Article 7.6 Appeal and objections . . . 21
Article 7.7 Hardship clause . . . 21
Article 7.8 Publication . . . 21
Article 7.9 Entry into force . . . 21

B Programme specific part **22**
Section 8 General properties of the programme . . . 22
Article 8.1 General objective of the programme . . . 22
Article 8.2 Content of the programme and the associated examinations . . . 22
Article 8.3 Programme Intended Learning Outcomes . . . 22

Article 8.4 Specific rules regarding Binding Recommendation (BSA) 23
Article 8.5 Structure of the programme 23
Section 9 Specific characteristics of the programme 23
Article 9.1 Language of instruction 23
Article 9.2 Registration of results 23
Article 9.3 Final Examination regulations 23
Article 9.4 Cum Laude (with distinction) 24
Article 9.5 BSA procedure 24
Article 9.6 Electives and Minor 24
Article 9.7 Bachelor's Assignment 25
Article 9.8 Double Degree programmes 25
Article 9.9 Evaluation of education 25
Section 10 Transitional arrangements 26
Article 10.1 Students of Cohort 2021 and earlier 26
Section 11 Bachelor's programme AM 26
Article 11.1 Curriculum AM 26
Section 12 Annex to the EER for the double degree programme AM and AP 28
Article 12.1 Study programme AM-AP 28
Article 12.2 Transitional arrangements 29
Article 12.3 Safety 29
Article 12.4 Minor and Bachelor's Assignment 29
Article 12.5 Teaching evaluation 29
Article 12.6 Final examination regulations 30
Article 12.7 Cum Laude 30
Article 12.8 Binding Recommendation (BSA) 30
Section 13 Annex to the EER for the double degree programme AM and TCS 31
Article 13.1 Study programme AM-TCS 31
Article 13.2 Minor and Bachelor's Assignment 32
Article 13.3 Teaching evaluation 33
Article 13.4 Final examination regulations 33
Article 13.5 Cum Laude 33
Article 13.6 Binding Recommendation (BSA) 34
Article 13.7 Transitional arrangements 34

Part A

University part

Section 1 General provisions

Article 1.1 Applicability of these regulations

1. This general section of the education and examination regulations applies to all students enrolled in the programmes Applied Mathematics, Business Information Technology, Creative Technology, Electrical Engineering and Technical Computer Science.
2. Students attending courses that are not part of the student's curriculum (see Article 1.2) are subject to the rules laid down in the appropriate documents, such as the rules laid down in the assessment schedule of the relevant study unit, or the rules laid down in the programme-specific part of the EER of the coordinating degree programme. The decision on special facilities in accordance with Article 5.2 may only be taken by the Examination Board of the degree programme for which the student is enrolled.
3. Each degree programme has its own programme-specific part.
4. For each degree programme, this general section and the programme-specific part together form the education and examination regulations for the programme concerned.
5. The general section and the programme-specific part of the education and examination regulations are determined by the Faculty Board.
6. The institute section of the Student Charter includes a definition of what the University of Twente considers to be academic misconduct (fraud). The rules and regulations of the Examination Board for the programme in question include additional rules about academic misconduct (fraud), such as which measures the Examination Board may take if it establishes misconduct (fraud).
7. The rules and regulations of the Examination Board of the programme in question include provisions about the rules of order during tests and rules in case of emergencies.
8. The following applies in respect of the language used in the education and examination regulations and the rules and regulations of the Examination Board:
   a) In case of uncertainty or discrepancy, the Dutch version of this general section is binding.[1]
   b) English versions of the programme-specific part of the education and examination regulations and the examination board's rules and regulations should be available for English-taught bachelor's programmes.
   c) Where the programme-specific part of the EER and the rules and regulations of the Examination Board of the bachelor's programme concerned are available in both Dutch and English, each version must, for the sake of clarity, state which version is binding.
9. Requests to deviate from provisions laid down in the education and examination regulations must be submitted to the Examination Board or the programme director of the student's main programme, as laid down in the relevant articles of these Regulations.

Article 1.2 Definitions

The terms used in these Regulations should be interpreted as follows:

Academic year: The period beginning on 1 September and ending on 31 August of the following year.

Assessment: A systematic process of fostering, evaluating and certifying student learning. The process includes the design, development and implementation of assessment tasks, and the judgement and reporting of student learning performance and student's achievement of specified intended learning outcomes. Assessment can be used to foster the student's learning process and development (formative) or to evaluate the student's performance (summative).[2]

[1] The Dutch version of Section A can be found here.

[2] In accordance with the UT Framework for Assessment Policy http://www.utwente.nl/en/service-portal/educational-support/about-ut-education/assessment-policy-ut-framework

Assessment schedule: A schedule showing how and when the learning objectives of the module or the study units of the module are assessed and when they are attained (see Article 3.6).

(Binding) recommendation on continuation of studies (Bindend studieadvies, BSA): A recommendation on continuation of studies as referred to in Article 7.8b, paragraph 1 and 2 WHW involving expulsion from the degree programme in accordance with Article 7.8b, paragraph 3 WHW, issued by the programme director, as mandated by the Institutional Board.

Canvas: University of Twente's digital learning environment.

Core programme: The same study units from the curriculum that apply to all the students enrolled in the degree programme. The minor phase is excluded.

Credit: A unit of 28 study workload hours, in accordance with the European Credit Transfer System. A full-time academic year consists of 60 credits, equal to 1680 hours of study (Article 7.4 WHW).

Curriculum: The aggregate of required and elective study units constituting a degree programme as laid down in the programme-specific part.

Degree programme: Bachelor's degree programme as referred to in the programme-specific part to these education and examination regulations. In this document, also referred to as the programme.

Examination: An evaluation, performed to conclude a study unit, of the student's knowledge, understanding and skills as well as a judgement of the outcomes of that evaluation (Article 7.10 WHW), in relation to the intended learning outcomes, that results in one final grade for the completed study unit. An examination may consist of a number of tests (see footnote[3]).

Examination Board: The body that objectively and professionally assesses whether a student meets the conditions laid down in the education and examination regulations regarding the knowledge, understanding and skills required to obtain a degree (Article 7.12 WHW).

Examiner: The individual appointed by the Examination Board to administer examinations and tests and to determine the results, in accordance with Article 7.12 paragraph c WHW.

Exemption: The decision of the Examination Board that the student has knowledge and skills which are comparable in terms of content, scope and level with one or more study units or components of study units. An exemption is granted on the basis of acquired competencies, i.e. previously passed examinations in higher education or in view of knowledge and skills attained outside higher education.

Faculty Board: Head of the faculty (Article 9.12, paragraph 2 WHW). Final examination: A degree programme is concluded with a final examination. If the study units in the degree programme have been completed successfully, then the final examination will be deemed to have been completed (Article 7.10 WHW).

Higher Education and Research Act (abbreviated to 'WHW'): The Higher Education and Research Act, Bulletin of Acts and Decrees 1992, 593, and its subsequent amendments.

Honours Programme: Institution-wide bachelor's Honours programme.

Institution: University of Twente (Universiteit Twente).

Institutional Board: The Executive Board of the University of Twente (Article 1.1 WHW).

Minor phase: Elective space conferring 30 credits that the student can also fill with an offer outside the programme.

Module: One or more study unit(s) that together comprise 15 credits in which the student's knowledge, understanding and skills are developed and assessed in a coherent manner.[3]

Osiris: System designated by the Institutional Board for registration and for providing information on all relevant data related to the students and the degree programme, as referred to in the WHW.

[3] More information about organisation of education and modules can be found on the website: http://www.utwente.nl/en/educational-systems/student-applications/osiris/manuals-for-students/#about-bachelor-modules.

Practical exercise: A practical exercise as referred to in Article 7.13, paragraph 2d WHW is a study unit or a study unit component emphasising an activity that the student engages in, as described in the programme-specific part.

Programme Committee (OLC): Committee referred to in Article 9.18 WHW.

Programme Director (OLD): The person appointed by the Faculty Board to administer the degree programme (Article 9.17 WHW).

Retention period: The amount of time that certain types of information or documents must be kept by universities and university medical centers.[4]

Student: Anyone enrolled in a degree programme in accordance with Article 7.34 and 7.37 WHW.

Study unit: A programme component as defined in Article 7.3, paragraph 2 and 3 WHW. Each study unit concludes with an examination, resulting in receiving a result and obtaining credits when that study unit is passed.

Study adviser: Person appointed by the Faculty Board who acts as contact between the student and the university, and in this role represents the interests of the student, as well as fulfilling an advisory role.

Study workload: The time an average student needs to learn the course material. The study workload comprises project work, independent study, lectures and writing assignments, for example. The study workload is expressed in ECTS credits according to the European Credit Transfer System.

Teaching period: The period in which a study unit is offered. The teaching period starts in the first week in which an educational activity takes place for the study unit concerned and ends in the final week in which an educational activity takes place and/or a test is administered for the study unit concerned. Resits are not part of the teaching period. An academic calendar is provided.

Test: An evaluation of the student's knowledge, understanding and/or skills as well as a judgement of the outcomes of that evaluation, in relation to the intended learning outcomes. A test is part of an examination. A test is registered as such at the level of 'test' in Osiris (see footnote[3]). If the examination for a study unit consists of a single test then the result of that test will count as the result of the examination.

TimeEdit viewer: The application used at the University of Twente to view and download the timetable of the degree programme.

UT: University of Twente.

Working day: Any day from Monday to Friday with the exception of official holidays and the prearranged compulsory holidays ('brugdagen') on which the staff are free.

The definition of all other terms used in these Regulations is in accordance with the definition accorded by the main text of this document, the programme-specific section of the EER, the Student Charter or the WHW.

Section 2 Contents and structure of the degree programme

Article 2.1 Intended learning outcomes and structure of the degree programme

Explanatory notes: Article 7.13 WHW

1. The programme director is responsible for the content, structure, organisation and evaluation of the degree programme. This includes the coherence and correlation of the education, and the assessment of education, in the way that is suitable for the relevant programme for assessing

[4] These periods are defined in a schedule called the "Universities and University Medical Centres 2020 Retention and Disposition Schedule." The University of Twente follows this schedule, which was officially adopted by the Minister for Primary and Secondary Education and Media on January 27th, 2020. The University also refers to retention periods in the Assessment Policy (UT Framework).

theoretical knowledge and practical skills.[5]

2. The qualities relating to the knowledge, understanding and skills that the student should have acquired upon completing the degree programme (aims and intended learning outcomes) are set out in the programme-specific appendix.[6]
3. The degree programme consists of 180 credits.
    a) The degree programme consists of a core programme of 120 credits, a minor phase of 30 credits and a graduation phase totalling at least 15 credits.
    Exceptions are the Advanced Technology and Technical Medicine programmes, which have electives instead of minors, or have no minors, but do have a core programme of more than 120 credits.
    b) The core programme of the degree programme is specified in the programme-specific part.
    c) The core programme consists of modules.
    d) Before the start of a study unit, the student must meet the prior knowledge prerequisites for that study unit, as described in the Osiris Course Catalogue, taking into account Article 3.1 paragraph 4.
    e) Students generally complete their minor phase in the first semester of their third year of study.
    f) The degree programme for which the student is enrolled may set conditions for the number of credits required to be eligible for admission to the minor course. These conditions are specified in the relevant programme-specific appendix.
    g) Students are limited in their choice of minor by the provisions of paragraph d and f. The choice of minors available can be viewed on the minor website.
    h) In principle, the second semester of the third year of studies is devoted to the graduation phase, which comprises a minimum of 15 credits.
    i) The student must have completed the core of the bachelor's programme to be admitted to the graduation phase.
    j) The Examination Board[7] is authorised in individual cases to deviate from paragraph d, f, h and i, if strict adherence to those provisions would result in an unacceptable delay in study progress. In consultation with the study adviser, the student may submit a proposal to the Examination Board for this.
4. The programme-specific appendix describes the degree programme in accordance with Article 7.13, paragraph 2, a to e, i, l, s, t and v WHW.

Article 2.2 The degree programme's language of instruction

1. The official language of instruction is the language in which education is given and in which tests and examinations are held.
2. The choice of the official language for a degree programme or components of a degree programme lies with the programme director, subject to the right of consent of the programme committee. The degree programme's language of instruction is specified in the programme-specific appendix.
3. The choice of the official language for a degree programme, or any deviation from that choice for

[5] Subject to the responsibility of the Faculty Board to establish the EER for the programme, and the institutional rules about the validity of grades (Art. 3.9).

[6] More information about the organisation of education and modules can be found on the website: https://www.utwente.nl/en/educational-systems/student-applications/osiris/manuals-for-students/#about-bachelor-modules.

[7] It is important that the student is still able to achieve the final attainment levels of the degree programme. In light of this consideration, this authorisation has been formally conferred to the Examination Board, as they are the ones to ensure that a student who achieves the final attainment levels is able to graduate.

programme components is to take place in accordance with language policies of the University of Twente and relevant articles of the WHW, such as Article 7.2 WHW.

Article 2.3 Exemption

1. The Examination Board may grant students an exemption for one or more examinations or tests at their request. To this end, the student must demonstrate having sufficient knowledge and skills in relation to the examination concerned or the test in question.
2. An exemption granted by the Examination Board will be registered in Osiris under the study unit or study units, or components thereof, by means of an EX (exemption).
3. Students cannot be compelled to take additional study units or components of study units in their curriculum instead of an exemption that has been granted.
4. Students may also be exempted from practical exercises if they can demonstrate that a required practical exercise will likely give rise to challenges related to their ethical or moral beliefs. In such cases, the Examination Board will determine whether the component can be completed in another manner and in what way.

Article 2.4 Individualised programme

1. Any student can compile an individualised programme, for which a degree and diploma is awarded, as referred to in Article 7.3j WHW.
2. The Examination Board decides on requests for permission to take an individualized programme as referred to in Article 7.12b WHW. The Examination Board assesses whether an individualised programme is appropriate and consistent within the domain of the degree programme and whether the level is equivalent to the programme intended learning outcomes.[8] If necessary, the Institutional Board will select the Examination Board that is responsible for granting permission.

Section 3 Teaching and Assessment

Article 3.1 General

1. Each study unit concludes with an examination.
2. The examination consists of one or more tests.
3. A test or examination may take several forms, e.g. a written test, an assignment, an oral test, practical exercises or a combination of the aforementioned. Tests and examinations can be administered online.[9]
4. The programme director publishes at least the following details of the study units in Osiris not less than four (4) weeks in advance of the start of the study unit: scope, learning objectives and content, language of instruction and assessment, prerequisites, required and recommended study materials, design of teaching methods and assessment.
5. The possibility of unconditional access to one resit[10] must be offered for each test in the same academic year. An exception may be made for practical exercises (such as practical classes and projects). Article 5.2 paragraph 2 applies.
6. The student has the right to inspect model test questions, such as akin tests, past tests, or tutorial assignments that are representative of the test or examination, as well as the corresponding answers and the standard for determination of the result.

[8] For example: an individualised programme that meets the required study load but, for example, consists entirely of introductory courses, lacks the required level.

[9] Practical information available on the university's website, such as: http://www.utwente.nl/en/learning-teaching/assessment/additional-topics/Efficiency_assessment/.

[10] This means resits of all the tests within a study unit

7. The time allotted to administering a test may not exceed three hours. Exceptions in this regard are listed in Article 5.4.
8. If the examiner wishes to use any form of assessment that requires more than three hours, the examiner must, with due regard for paragraph 4, ask the Examination Board for approval to deviate from the above.

Article 3.2 Online assessment

1. The Examination Board may set further rules and conditions for online assessment.

Article 3.3 Results

1. Results of examinations or tests must be announced to students. Osiris is used for the formal[11] registration of grades for examinations and tests.
2. If the examination for a study unit consists of a single test then the result of that test will count as the result of the examination.
3. Test results are expressed in a grade from 1 to 10 with a single decimal, or as *'pass' / 'fail'*.
4. After the examiner determines the result of assessments, Osiris automatically calculates and rounds the grade of the study unit, expressed in half grades from 1.0 to 5.0 and from 6.0 to 10.0[12], or as *'pass' / 'fail'*. Rounding occurs only in the final phase[13] of the assessment of a study unit and follows the schedule below:

If figure before the decimal $(n) \neq$**5**	
Grade ≥n.00 and <n.25	⇒ n.0
Grade ≥n.25 and <n.75	⇒ n.5
Grade ≥n.75 and <(n+1).00	⇒ (n+1).0
If figure before the decimal =5:	
Grade ≥5.00 and <5.50	⇒ 5.0
Grade ≥5.50 and <6.00	⇒ 6.0

5. Examination results of 6.0 or higher are a pass.
6. Examination results, if a pass, obtained at foreign universities will be registered as a P (pass). Examination results obtained at Dutch universities will be adopted one-to-one, with due regard for the provisions in paragraph 3.
7. Credits may only be issued for a study unit if the study unit has been completed with a pass mark.
8. If more than one result for the same examination or test has been recorded in Osiris for one and the same unit of study, the highest grade will apply.
9. The examiner is to inform the student of the result of an oral examination within one working day, unless the oral examination is part of a series of oral examinations of the same study unit which are administered on more than one working day. In that case, the examiner is to determine and announce the result within one working day following the conclusion of the series of oral examinations.
10. The result of a test is to be disclosed to the student within ten working days after the test date, with due regard for Article 3.8 paragraph 2.
11. The examination result of a study unit is to be disclosed to the student through Osiris within ten working days after the conclusion of the teaching period during which the study unit is offered.

[11] In case of any discrepancy between results published in Osiris and results communicated via any medium other than Osiris (e.g. Canvas, email), the results in Osiris will prevail. Article 8.2 still applies.
[12] In Osiris, a comma is used, based on the Dutch grading system (e.g. 7,0).
[13] Final phase: when all grades are known.

Article 3.4 Modules

1. Each module has a module coordinator, appointed by the programme director.

Article 3.5 Registration

1. Registration in Osiris is required prior to participating in a module or study unit.[14]
2. Upon registering for the module or study unit, the student will automatically be registered for the assessments associated with the teaching period of the module/study unit. Thee student is automatically de-registered from the resit opportunity if a sufficient grade us obtained for the first test opportunity. In such case, the student still have the opportunity to re-registered for the resit on their own initiative if they wish to make use of that resit opportunity, despite having obtained a sufficient grade for the first test opportunity.

Article 3.6 Description of modules and assessment schedule

1. The programme-specific part contains a description of each module.
2. The module description must include:
    a) the study units comprising the module and the number of related credits;
    b) if applicable, the number of tests and their relative weighting;
    c) the language of instruction and assessment (Dutch programmes only);
    d) the manner in which the examinations and/or tests are administered (oral, written or an alternative manner).
3. The assessment schedule of a module is drawn up by the examiner or examiners and is determined by the programme director. The Examination Board provides advice on the assessment schedule.
4. The assessment schedule must be published in Canvas at least two weeks before the start of the module.
5. The assessment schedule of a module must include:
    a) how the learning objectives of the module or the study units of the module are assessed and when they are attained;
    b) in which weeks examinations, tests, resits, and discussions (Article 3.10) are held (the precise times and dates will be announced via TimeEdit viewer;
    c) any required minimum grade per test; a minimum grade for a test may not be set higher than 5.5;
    d) if applicable: information on resits (such as conditions, compensation options and grading periods).
6. The programme director may modify the assessment schedule during the module or study unit:
    a) The assessment schedule may only be changed in consultation with the module coordinator and the examiner of the study unit.
    b) The programme director will consult the Examination Board before any changes to the form or manner of administering an examination or one or more tests. If the change only involves moving tests to a timeslot other than as shown in the timetable, the programme director will inform the Examination Board of the decision as soon as possible.
    c) Students are to be informed immediately of the change.
7. Changes to the assessment schedule may not put students at an unreasonable disadvantage. The Examination Board may take special measures in individual cases.

[14] The applicable registration deadlines are mentioned on the webpage https://www.utwente.nl/en/education/student-services/education/courses-and-modules

Article 3.7 Oral assessments

1. Oral assessment is generally not public, but if the student or the examiner wishes a third party to be present when administering an oral assessment, then a request to this end must be submitted to the programme director at least fifteen working days prior to the oral examination. The student and the examiner will be notified of the programme director's decision not less than five working days in advance. The programme director must inform the Examination Board of the decision. Public graduation symposia, public presentations and group tests are excluded from this provision. Any decision regarding the public nature of orally administered assessments is subject to the authority of the examination board to decide otherwise in special cases (art. 7.13 paragraph 2n WHW).
2. If the Examination Board has decided that members of the Examination Board or an observer on behalf of the Examination Board is to be present during the administration of an oral examination, then the Examination Board is to make this known to the examiner and the student at least one working day before the oral examination.

Article 3.8 Assessment deadline, examination and test date

1. The examination date is the date on which the test is taken with which the student definitively passes the study unit.
2. The test date is the date on which a test is taken.
3. If a test assessment is (among other things) dependent on completing one or more assignments or writing a paper or thesis, then the test date will be the deadline of submission of the final component (or the date of the last written or oral assessment).
4. If a test resit is planned, the results of the first test will be published at least five working days before the resit to give the student time to prepare.
5. Should the examiner not be able to meet the deadline referred to in paragraphs 1 to 4 of this Article, or in paragraph 9, 10 or 11 of Article 3.3 due to exceptional circumstances, then the examiner is to notify the Examination Board, providing reasons for the delay. The student concerned is to be informed of the delay immediately, and a new deadline for publication of the results will be set and notified to them. If the Examination Board is of the opinion that the examiner has not met the obligations, it may appoint another examiner to ascertain the result of the examination or test and determine the grade.

Article 3.9 Period of validity of results

1. The results of examinations and tests as defined in Article 1.2, passed or failed, remain valid indefinitely. This period of validity may only be limited if the tested knowledge or understanding is demonstrably outdated or the tested skills are demonstrably outdated.
2. For limiting the period of validity of results as stated in paragraph 1, the Faculty Board establishes rules for initiating the necessary investigation to determine if, for an individual student, tested knowledge, insights and skills are outdated, and if so, for limiting the period of validity appropriately. If the period of validity of a result of an examination is limited, at least the rules in Article 6.2 paragraph 6 of these regulations and Article 7.10 paragraph 4 WHW are taken into account by the Examination Board when assessing the extension of the limited validity period.[15]
3. In organising coherence and correlation of education and assessment within the programme (see Article 2.1 paragraph 1 of these regulations), the institutional rules mentioned in these regulations about validity of grades must be taken into account. More information for students about the institutional organisation of education and modules can be found on the website: http://www.

[15] Subject to the authority of the Examination Board to extend the limited period of validity in individual cases in accordance with Article 7.10, paragraph 4 of the WHW.

utwente.nl/en/educational-systems/student-applications/osiris/manuals-for-students/#about-bachelor-modules.

Article 3.10 Right of inspection and discussion

1. Students are entitled to discuss and review their administered tests together with the examiner, and the examiner is to explain the assessment. This can be done individually or in a group setting, either in person or by using an online tool. The examiner chooses the setting of methods and tools for discussion and informs the students in a timely manner.
2. Individual and groups discussions must take place no later than five weeks after the publication of the test or examination results, but at least three working days prior to the next test opportunity, in the (online) presence of the examiner or a substitute designated for that purpose.
3. If the examiner organises a group discussion of the assessment, the student must use that opportunity to exercise the right to discussion referred to in paragraph 1. If a student cannot attend the group discussion or if the student is not given the opportunity at the group discussion to discuss the reasons for the examiner's assessment of the test with the examiner, the student may submit a request for individual discussion with the examiner no later than on the first working day following the working day of the group discussion. Students are informed about the group discussions and the aforementioned deadline. The individual discussion is to take place no later than three working days prior to the next test opportunity.
4. If there is no group discussion of the test, then a student may submit a request to the examiner for an individual discussion within ten days after publication of the results. The individual discussion is to take place no later than three working days prior to the next test opportunity.
5. Students are to be given the opportunity to inspect their assessed work for a period of 12 months following the date of the assessment.

Article 3.11 Teaching evaluation

1. The programme director is responsible for the overall quality of the degree programme.
2. The programme director is responsible for monitoring and evaluating the degree programme.
3. The programme-specific part details how the education in the degree programme is evaluated.

Section 4 Final examinations and diploma

Article 4.1 Examination Board

1. In line with Articles 7.12a and 7.12b WHW:
    a) the Faculty Board appoints an Examination Board for each degree programme or group of degree programmes;
    b) the Examination Board determines the rules and regulations for the examiners, examinations and final examinations without further consultation.

Article 4.2 Final examination and degree

Explanatory notes: Article 7.10, paragraph 2 and Article 7.11 WHW

1. The final examination is considered to be complete when the student has passed all study unit examinations in the degree programme, as registered in Osiris. The Examination Board may, under conditions that is has set, determine that not every examination has to be completed successfully to determine that the final examination has been successfully completed (Article 7.12b paragraph 3 WHW).

2. The date of the final examination is the date on which the student completes the final study unit of the degree programme.
3. A student may submit a written request, giving reasons, to the Examination Board to postpone the final examination, and thus to postpone the awarding of the diploma. The maximum duration of any postponement that can be granted is twelve months, in principle. In exceptional cases [16], the student may have valid reasons for requesting that the awarding of the diploma be postponed for more than twelve months.
4. If the student has requested postponement based on the provisions of paragraph 3, then the date of the examination will be the date on which the Examination Board decides that the student has passed the final examination subsequent to the postponement.
5. Students who have successfully met all requirements for the bachelor's final examination will be awarded a Bachelor of Science (BSc) degree.
6. The degree conferred is stated on the diploma.

Article 4.3 Diploma

Explanatory notes: Article 7.11 WHW

1. The Examination Board will award a diploma as proof that the student has satisfied all the requirements of the final examination once the Institutional Board has confirmed that the procedural requirements for awarding the diploma have been met. The date indicated on the diploma (i.e. the date of the final examination) is the date on which the student completed the final study unit of the degree programme.
2. The diploma will be signed by the chair of the Examination Board. If the Chair is absent, one of the members of the Examination Board may also sign the diploma.
3. The following information is to be stated on the diploma:
    a) the student's name and date of birth;
    b) the name of the institution and the degree programme as stated in the register referred to in Article 6.3 WHW;
    c) the date of the final examination;
    d) the study unit components of the final examination;
    e) the degree conferred (in accordance with Article 7.10a WHW);
    f) where appropriate, the specific qualifications associated with the degree (with due consideration for Article 7.6, paragraph 1 WHW);
    g) the date on which the degree programme was last accredited or the date on which the programme passed the new degree programme assessment (Article 5a.11 WHW).
4. An International Diploma Supplement is to be appended to the diploma. This supplement is intended to provide insight into the nature and content of the degree programme to promote the international recognition of the programme, among other aspects. The diploma supplement is to include the following information at a minimum:
    a) the name of the degree programme and the name of the university;
    b) that the degree programme was offered at an institution for academic education;
    c) a description of the degree programme content; an indication of any specialisation and/or minor, if applicable;
    d) the study workload of the degree programme;

[16] Some examples (by way of illustration, not to exclude other situations): the student follows a double bachelor's programme, the student needs more time for a pre-Master's programme, an extensive extra-curricular activity requires more than twelve months.

e) the final examination components and results, based on the registration of grades in Osiris;

f) examinations passed by the student that are not part of the final examination;

g) if the student has successfully completed an honours programme while in the degree programme, then this fact will be stated on the diploma supplement as an extracurricular programme;

h) the student's average grade, weighted by credits (Grade Point Average, GPA). The diploma supplement indicates how the average grade is calculated.

5. The programme director determines if a special distinction (such as cum laude) is applicable to the degree programme, and determines the requirements to qualify for a special distinction. Information about the rules, requirements and considerations for awarding cum laude is available to the student upon starting the programme. Awarding the diploma and (the consideration for) awarding a distinction such as cum laude lies with the Examination Board[17]. If the Examination Board has awarded a specific distinction (e.g. cum laude) to the student, then this is to be mentioned on the diploma.
6. Students who have successfully completed more than one examination but cannot be awarded a diploma as referred to in paragraph 1 of this article, will receive, at their own request, from the Student Services Desk a statement prepared by or on behalf of the Examination Board which in any case will state the results of the examinations the student in question has passed.

Section 5 Student guidance

Explanatory notes: Article 7.13 paragraph 2u and Article 7.59 WHW, and Article 7.13 paragraph 2m WHW and Article 2 of the Equal Treatment of Disabled and Chronically Ill People Act (WGBH/CZ).

Article 5.1 Student guidance

1. The Faculty Board is responsible for student guidance.
2. Student support and guidance includes 'decentralized' guidance, as provided within degree programmes, and 'central' guidance, as provided by the Centre for Educational Support.
3. Student guidance includes guidance with questions or problems with regard to career orientation and career choices and guidance with problems that affect study progress. Students are offered personal and professional student (career) guidance for optimal study progress. Where possible, needs for specific guidance are met.
4. Each student is assigned a study adviser.
5. The study adviser supervises students and advises them on all aspects of the studies, also on personal circumstances that may be affecting the student's studies.
6. The opportunity for an introductory interview will be offered to each student before 1 November of the first year of enrolment in the degree programme.
7. The programme director establishes a systematic method for monitoring students and identifying obstacles in study progress (for example in a policy plan or an annual cycle).
8. Information about the guidance facilities of the degree programme should be available on the website of the degree programme.

Article 5.2 Special facilities

1. If students wish to exercise their right to specific supervision or special facilities, they should contact the study adviser. The study adviser will record the agreements made with the student in Osiris.

[17] Personal circumstances are taken into account. If it considers activism, an acknowledged fulltime board year is excluded from the calculation of the nominal study load for cum laude.

2. A student is entitled to special facilities in case of demonstrable circumstances beyond the student's control or extenuating personal circumstances. The facility may provide for dispensation from or an additional opportunity to sit examinations or tests to be granted and/or for specific facilities to be made available. Such dispensation and additional resits may only be granted by the Examination Board (Article 1.1, paragraph 2).

Article 5.3 Studying with a functional impairment

1. A functional impairment is defined as having an illness, condition, impairment or disability that might impede or otherwise constitute a barrier to the student's academic progress.
2. Facilities are to be aimed at removing individual barriers following the degree programme and/or when it comes to taking examinations and tests. These facilities may be related to access to infrastructure (buildings, classrooms and teaching facilities) and study materials, adjustments to the form of assessment, alternative learning pathways or a customised study plan.

Article 5.4 Request for facilities

1. The study adviser and the student concerned will discuss the most effective facilities that can be provided for the student, where necessary with support or input of a student counsellor.
2. Based on the discussion referred to in paragraph 1, the student is to submit a request for facilities. This request should be submitted to the study adviser, who has been mandated by the Faculty Board, preferably three months before the student is to participate in classes, examinations and tests for which the facilities are required.
3. The request should be supported by documents that are needed to enable an assessment to be made.
4. The study adviser will decide on the admissibility of the request and will inform the student of the decision within twenty working days after receipt of the request, or sooner if the urgency of the request dictates.
    a) Should the request be granted, the period of validity will also be indicated.
    b) If the request is not granted, or only partly granted, the study adviser will inform the student of the justification for not granting the request as well as the possibilities for filing an objection and an appeal with the Complaints Desk.
    c) Students who are dyslexic, will be granted a maximum of 15 extra minutes for each hour that a test or examination is officially scheduled.
5. The study adviser shall inform the relevant parties in good time about the facilities that have been granted.
6. The applicant and the study adviser will evaluate the facilities before the end of the period for which they have been granted. During this evaluation, the parties discuss the effectiveness of the facilities provided and whether they should be continued. No evaluation takes place of facilities granted to students because of the functional impairment dyslexia.

Section 6 (Binding) recommendation on continuation of studies (BSA)

Explanatory notes: Article 7.8b WHW

Article 6.1 Preliminary recommendation on continuation of studies

1. Students will receive a general information letter about study progress and the binding recommendation on continuation of studies by calendar week 52 at the latest of their first year of enrolment

in the degree programme. They will receive a preliminary recommendation on continuation of studies on 25 February of the following calendar year at the latest. This recommendation can be positive, negative or neutral and is not binding. Students with a postponed recommendation on continuation of studies receive a timely warning in their second year of enrolment in the degree programme (in accordance with Article 6.2, paragraph 4) if their study progress proves insufficient.

2. Students who receive a negative recommendation on continuation of studies will be invited for an interview with the study adviser to discuss their study methods and review their choice of specialisation. A negative preliminary recommendation on continuation of studies is considered as a warning (Article 6.2, paragraph 4).

Article 6.2 (Binding) recommendation on continuation of studies

1. Students receive a written recommendation on continuation of studies, at the latest by the end of the first year of enrolment in the degree programme, about continuing their studies. This recommendation is based on the student's results: the student may be allowed to continue on the programme, or may be required to leave the programme, with due regard for Articles 6.3 and 6.4. The Institutional Board mandates the programme director to issue recommendations on continuation of studies.
2. The calculation for the recommendation on continuation of studies includes:
   a) the credits obtained for examinations from the first year of the degree programme;
   b) the exemptions for examinations and tests in the first year that were granted to the student.

   The programme director may set programme-specific requirements which must be met. These requirements are specified in the programme-specific part. Programme-specific requirements may not state that all study units of a certain curricular course must be attained.
3. The programme director may decide that a recommendation on continuation of studies should involve expulsion. A *recommendation on continuation of studies that involves expulsion* is referred to as a *binding recommendation on continuation of studies* (bindend studieadvies, BSA). The programme director will take the student's personal circumstances of which the university is aware into consideration when making a decision. The recommendation on continuation of studies may only involve expulsion if the programme director considers the student as unsuited to the educational programme, because the student's results do not meet the required standard, i.e. if:
   a) the student has obtained fewer than 45 credits of the first year, or
   b) the student has obtained 45 or more credits of the first year, but does not meet the programme-specific requirements (as referred to in paragraph 2 of this article). The decision notification relating to a binding recommendation on continuation of studies must inform the students of their right to file an objection and appeal via the Complaints Desk.
4. Before issuing a binding recommendation on continuation of studies, the programme director must first issue a warning to the student giving him/her a reasonable term in which to improve the course results, to the programme director's satisfaction (Article 6.1 paragraph 2), and the programme director will give the student the opportunity to be heard.
5. Students may file a request (supported by documentary evidence) for assessment of their personal circumstances to the Personal Circumstances Committee (CPO). This request is to be filed in consultation with the study adviser. The CPO will assess the validity, nature, severity and duration of the personal circumstances and will issue an advisory opinion on these matters. The CPO's advisory opinion, issued to the programme director and the study adviser concerned, will be taken into account in the programme director's decision-making referred to in paragraph 3.
6. Personal circumstances include illness, physical, sensory or other functional disability or pregnancy of the student involved, extenuating family circumstances, participation in top-level sports or arts and membership of the university council, faculty council, programme committee or a Category 3 or 4 board (student activism) in accordance with the StOF Regulations.

7. Students who have received a binding recommendation on continuation of studies (BSA) may not enrol in the same degree programme for a period of three consecutive academic years. If a student re-enrols in the relevant programme after this period, this enrolment is designated as a first-year enrolment and the relevant provisions of this section apply in full.

Article 6.3 Discontinuation of the programme

1. The degree programme is considered to be discontinued if the student stops taking courses or any form of tests for the programme, and where the student:
    a) submits a request to the University of Twente to terminate the enrolment, or
    b) submits a request to terminate the enrolment for one programme at the University of Twente and enrols in another programme at the University of Twente, thus switching to another programme at the University of Twente, or
    c) continues the studies at another institute of higher education with a proof of tuition fees paid (*bewijs betaald collegegeld*, BBC).
2. A recommendation on continuation of studies will not be issued if the request to terminate enrolment is received through Studielink before March 1st in the first year of enrolment for the degree programme and the student does not re-enrol for the same programme in that same academic year. If the student re-enrols in the same programme in a following academic year, this enrolment is designated as the first-year enrolment.
3. Students who de-enrol as per 1 March for a degree programme at the University of Twente will receive a recommendation on continuation of studies, as referred to in Article 6.2 paragraph 1, from the degree programme they discontinued.

Article 6.4 Postponement of recommendation on continuation of studies

1. The recommendation on continuation of studies as referred to in Article 6.2 paragraph 1 may be postponed if:
    a) the student has enrolled in the degree programme on or after 1 October of the relevant academic year and on 31 August at the latest has not met the norm, or
    b) if personal circumstances preclude an assessment of the student's suitability at the end of the first year of enrolment in the degree programme.

    In the event of postponement pursuant to the provisions under a), the recommendation on continuation of studies will be issued by the degree programme in which the student is newly enrolled.
2. If the student whose recommendation has been postponed re-enrols in a subsequent academic year in the same degree programme, then the recommendation on continuation of studies for the relevant programme will be issued by the end of the second year of enrolment. The same norm as set out in Article 6.2 paragraph 3 applies to this recommendation.
3. If a student transfers to another UT degree programme prior to 1 October, then the recommendation on continuation of studies will not be postponed based on transfer and the norm will not therefore be adjusted as referred to in Article 6.2, paragraph 3.

Section 7 Amendments, transitional arrangements, appeals and objections

Article 7.1 Conflicts with the regulations

If other additional regulations and/or provisions pertaining to education and/or examinations conflict with these education and examination regulations, the provisions in these education and examination

regulations will prevail.

Article 7.2 Administrative errors

If, following the publication of a result, a marks sheet, or a student's progress report a manifest error is discovered, the discoverer, be it the university or the student, is required to make this known to the other party immediately upon finding the error and to cooperate in rectifying the error.

Article 7.3 Amendments to the Regulations

1. Substantive amendments to these Regulations are enacted by the Faculty Board in a separate decision.
2. In principle, substantive amendments to these Regulations do not apply to the current academic year. Amendments to these Regulations may apply to the current academic year if the interests of the students are not prejudiced within reasonable bounds, or in situations of force majeure.
3. Amendments to these Regulations have no effect on earlier decisions by the Examination Board.

Article 7.4 Transitional arrangements

1. In the case of amendment of these education and examination regulations, the Faculty Board will adopt a transitional arrangement, as necessary.
2. The transitional arrangement is to be published on the degree programme's website.
3. Changes to the curriculum are to be announced prior to the academic year in which the changes take effect. No guarantee can be made that all programme study units that were part of the curriculum when students enrolled in a degree programme will continue to be part of the curriculum. The final examination is to be based on the curriculum most recently adopted by the Faculty Board.
4. The transitional arrangement will always include:
    a) requirements or rules on following the study units which are equivalent to the study units mentioned in the programme-specific part that will no longer be part of the curriculum;
    b) an indication that if a study unit that does not involve a practical exercise is dropped from the curriculum, then students are to have at least two opportunities in the following academic year to take a written or oral test or examination or to undergo another form of assessment;
    c) an indication that if a study unit with practical exercises is dropped from the curriculum and there is no opportunity in the subsequent academic year to complete the practical exercises concerned, then at least one study unit will be designated that may be completed as a substitute for the study unit that has been dropped;
    d) the period of validity of the transitional arrangement.
5. The transitional arrangement must be approved by the Examination Board.
6. In exceptional cases and to the student's benefit, the Examination Board may deviate from the prescribed number of opportunities to sit examinations and/or tests related to study units that have been dropped from the curriculum.

Article 7.5 Assessment of the education and examination regulations

1. The Faculty Board is responsible for the regular assessment of the education and examination regulations, with specific emphasis on the study workload.
2. Based on Article 9.18 WHW, the programme committee has a partial right of consent of and a partial right to be consulted on parts of the education and examination regulations.
3. The programme committee is responsible for the annual assessment of the manner in which the education and examination regulations are implemented.

Article 7.6 Appeal and objections

An appeal and objections must be submitted in writing to the University of Twente Complaints Desk within six weeks after notification of a decision to the student.

Article 7.7 Hardship clause

In cases of demonstrable unreasonableness and unfairness of a predominant nature, the Examination Board or the programme director may allow the provisions in these Regulations to be deviated from. This depends on which body is authorised or has the duty according to these Regulations to take a decision on or make an exception to a provision in these Regulations.

Article 7.8 Publication

The education and examination regulations and the Examination Board's rules and regulations are to be published on the degree programme's website.

Article 7.9 Entry into force

These Regulations enter into force on 1 September 2026 and replace the Regulations dated 1 September 2025.

Adopted on xxxx by the Faculty Board, having regard to Article 9.5, 9.15 paragraph 1a, 7.13 paragraph 1 and 2, 9.38b, 9.18 paragraph 1a and 7.59 WHW, and after approval by the faculty council.

Part B

Programme specific part

Section 8 General properties of the programme

Article 8.1 General objective of the programme

The objective of the bachelor's programme in Applied Mathematics is to train and educate its students to become academics who practice mathematics from the perspective of applications, in a societal and multidisciplinary context.

Graduates are well-prepared to continue their education in a master's programme for Applied Mathematics.

Article 8.2 Content of the programme and the associated examinations

The study units comprising the bachelor's programme in Applied Mathematics are given in Table 1, Table 2 and Table 3 in Article 11.1. The rules regarding the Final Examination are given in Article 9.3.

Section 12 contains a curriculum that has been adjusted for the combined final degree audit for Applied Mathematics and Applied Physics.

Section 13 contains a curriculum that has been adjusted for the combined final degree audit for Applied Mathematics and Technical Computer Science.

Article 8.3 Programme Intended Learning Outcomes

The programme covers four fields of competence:

a. domain expertise;

b. research and modelling skills;

c. professional skills;

d. academic reflection.

These fields of competence are specified further in the following Programme Intended Learning Outcomes:

1. The graduate has a solid foundation of mathematical theories in the areas of algebra, analysis, optimisation, statistics, stochastics, and discrete mathematics, and a basic understanding of the application of these theories in areas such as technology, health care and logistics (associated with domain expertise).
2. The graduate can deal with abstraction, is capable of formal reasoning and can construct mathematical proofs (associated with domain expertise).
3. The graduate can use various research methods to answer research questions (associated with research and modelling skills).
4. The graduate can design and analyse mathematical models for problems of a multidisciplinary nature and assess their usefulness in practical situations (associated with research and modelling skills).
5. The graduate is proficient in using a computer to address the size and complexity of mathematical problems. Programming, numerical methods and simulations are key applications in this regard (associated with research and modelling skills).
6. The graduate is information literate. The graduate is able to search for information and critically process the findings, also in the context of generative AI (associated with research and modelling skills and professional skills).

7. The graduate can communicate effectively both orally and in writing with colleagues and stakeholders in their field.
8. The graduate can collaborate effectively in a team, considering different perspectives and contributing to the achievement of shared goals. The graduate is capable of continuously developing collaborative skills.
9. The graduate has insight into the position of the field of applied mathematics in society and has acquired a basic understanding of the philosophy of science (associated with academic reflection).
10. The graduate can shape their learning process and competencies and develop their professional identity.

Article 8.4 Specific rules regarding Binding Recommendation (BSA)

A student of the bachelor's degree programme in Applied Mathematics will receive a positive BSA upon satisfying the following conditions (Article 6.2):

1. Successful completion of at least 45 credits.
2. Successful completion of at least six of the following study units: Linear Structures 1, Linear Structures 2, Analysis 1, Analysis 2, Probability Theory, Signals and Transforms, Numerical Mathematics and Differential Equations.

Students pursuing a double degree in Applied Mathematics and Applied Physics are subject to different BSA provisions, as given in Article 12.8.

Students pursuing a double degree in Applied Mathematics and Technical Computer Science are subject to different BSA provisions, as given in Article 13.6.

Article 8.5 Structure of the programme

The programme is designed to be followed full-time. Its core programme consists of the modules 1 to 8 (Article 2.1).

Section 9 Specific characteristics of the programme

Article 9.1 Language of instruction

English is the language of instruction - the examinations are administered in English. Exam and test questions have to be answered in English. Answers in any other language will be ignored and therefore not marked.

Article 9.2 Registration of results

In addition to Article 3.3,

1. Exemptions for examinations are assigned a numeric value of 6.0 for weighting purposes.

   The student has the option of not requesting an exemption but taking the exam and possibly earn a higher mark.
2. The exam results Pass (P) and Fail (F) have no numeric values.

Article 9.3 Final Examination regulations

Students who meet the following requirements will pass the Final Examination of the Bachelor's programme in Applied Mathematics:

a. The student has received an assessment for all study units of the Bachelor's curriculum;
b. All study units have been completed with a grade of 5.0 or higher or pass;

c. The student has no more than one grade of 5.0 for the study units of the first year of the Bachelor's curriculum and no more than one grade of 5.0 for the study units of the second and third years combined;

d. The grade for the Bachelor's Assignment is 6.0 or higher;

e. The average of all numeric grades is 6.0 or higher. This is a weighted average based on the corresponding number of ECs per study unit.

In all other cases, the student will not pass the Final Examination.

Article 9.4 Cum Laude (with distinction)

1. The Examination Board can decide that a student passes the Bachelor's Final Examination with distinction (cum laude). The degree is awarded with distinction, taking into account all of the following conditions:

    a. The student passes the Bachelor's Final Examination within four years of initial enrolment (performance requirement);

    b. All study units are completed with a passing grade.

    c. The average of all numeric grades (including EX) is 8.0 or higher. This is a weighted average based on the corresponding number of ECs per study unit. Results for study units outside the examination programme are not taken into account.

    d. No more than one study unit (including EX) may have a grade lower than 7.0;

    e. The grade for the Bachelor's Assignment is an 8.5 or higher.

    These conditions will be checked, including academic misconduct (article 9.4.3), without the need of a request to the Examination Board.

2. In exceptional cases and at the student's request, the Examination Board may award the distinction of cum laude if the student has met all requirements with the exception of the performance requirement, due to extenuating circumstances. These circumstances may involve delays recognised and provided for by the institution. It should be noted that the distinction of cum laude is never awarded automatically.

3. Students who provenly committed academic misconduct within the Bachelor Programme of Applied Mathematics can be excluded from a specification of Cum Laude.

Article 9.5 BSA procedure

The BSA rules are mentioned in Article 8.4. The programme uses the BSA module in Osiris.

1. At the conclusion of Module 2, an interim recommendation will be given, which can be positive, neutral or negative.

2. The final and binding recommendations (BSA) are issued based on the results of the study units of the first year.

3. These official recommendations are issued by the Programme Board.

4. The letters containing the binding recommendations are sent and signed digitally.

Article 9.6 Electives and Minor

Students of the bachelor's programme in Applied Mathematics may choose an elective course within Module 11 as mentioned in Table 3.

Minor profiles of Modules 9 and 10 (Table 3) can be chosen from the approved minors listed on the minors website: https://www.utwente.nl/en/education/electives/minor/

Students may propose an alternative minor composition to the Examination Board for approval. The proposal for the minor must meet the following conditions:

1. The minor's academic level must be assured (to be assessed by the Examination Board).
2. The minor's components are to be cohesive.

Article 9.7 Bachelor's Assignment

1. The assessment committee is composed as follows:
    a) The committee consists of the student's supervisor(s) and an additional examiner, to be appointed by the coordinator of the bachelor's assignment.
    b) The additional examiners must belong to a research group different from the supervisor's research group.
2. Reports of Bachelor's Assignments are in principle public documents. The Programme Board may deem a report to be confidential for a specific period based on a detailed request:
    a) The supervisor must submit a request to the Programme Board prior to the start of the final assignment.
    b) The confidential report must be accessible/available to the committee responsible for assessing the Bachelor's Assignment, the Programme Board, and representatives of bodies that have a statutory duty of overseeing the quality of the assessment or the programme as a whole.
    c) The parties mentioned above are required to respect confidentiality with regard to the report.

Article 9.8 Double Degree programmes

The programme offers two double degrees: Applied Mathematics combined with Applied Physics, and Applied Mathematics combined with Technical Computer Science. A tailored curriculum applies to students pursuing such a double degree.

All additional rules concerning the double degrees AM-AP and AM-TCS are stipulated in Section 12 and Section 13, respectively.

Article 9.9 Evaluation of education

To monitor and to improve the quality of teaching, the AM BSc programme uses information about the students' learning and teachers' experiences. This information is obtained from:

a. Internal evaluations
    - ☐ SEQ (Student Experience Questionnaire)
    - ☐ Panel discussions with students and teachers
    - ☐ Reflections by the module team or teachers
b. External sources
    - ☐ National Student Survey (NSE)
    - ☐ National Alumni Survey
    - ☐ International Student Barometer

The outcomes of these evaluations are shared and discussed with the programme committee. If improvement steps are recommended, these are documented and shared with the teacher by the programme director so that the particular course will be improved next year.

Section 10 Transitional arrangements

Notwithstanding the current Education and Examination Regulations, the following transitional provisions apply for students who started the programme under a previous set of Education and Examination Regulations. Other necessary provisions are published on the BSc AM website. The programme coordinator BSc AM will draw up a customized arrangement for the cases not explicitly mentioned here.

Article 10.1 Students of Cohort 2021 and earlier

In 2024-2025, a new curriculum for year 3 was started for Cohort 2022. For students from Cohort 2021 and earlier, whenever required (for instance, if students still need to pass first-year courses of their programme), the programme coordinator BSc AM will set up an alternative curriculum, in consultation with the examination board.

Section 11 Bachelor's programme AM

The following abbreviations are used to describe the teaching format:

Lec Lecture,
Tu Tutorial,
PR Practical,
COL Colstruction/Lectorial.

For the examination format, the following abbreviations are used:

W Written examination,
O One or more assignments: the student submits work (assignments, reports, essays, other documents) and the examiner assesses it without the student being present,
Or Oral examination,
P Practical assignment: the student creates and submits a product that can be activated and subsequently, assessed on behaviour and/or function and/or usability (e.g. a working program or a functioning prototype),
Pj Project: the student participates in a number of group activities. The student will be assessed both on his individual contribution to the activities and the group's products (report, presentation, program),
Ps Presentation: the student gives a presentation to the examiner and a group of interested people, generally fellow students.

Article 11.1 Curriculum AM

Table 1: The first academic year

Study Units			Study load (EC)	Teaching method	Form of assessment
Code	**Quartile**	**Name**			
202200141	Q1	Linear Structures 1	5 EC	Lec+Tu	W
202500460	Q1	Analysis 1	5 EC	Lec+Tu	W
202200142	Q1	Modelling and Programming 1	5 EC	PR	O+P+Pj
202200236	Q2	Linear Structures 2	4 EC	Lec+Tu	W
202400660	Q2	Analysis 2	6 EC	Lec+Tu	W
202200238	Q2	Systems Theory	5 EC	Lec+Tu+PR	W+P
202001344	Q3	Probability Theory	5 EC	Lec+Tu	W
202500559	Q3	Signals and Transforms	5 EC	Lec+Tu	W
202200239	Q3	Modelling and Programming 2	5 EC	PR	O+P+Pj
202200242	Q4	Differential Equations	5 EC	Lec+Tu	W
202200241	Q4	Numerical Mathematics	5 EC	Lec+Tu+PR	W+P
202200243	Q4	Modelling and Programming 3	5 EC	PR	O+P+Pj+Ps
Entire academic year			**60 EC**		

Table 2: The second academic year

Study Units			Study	Teaching	Form of
Code	**Quartile**	**Name**	**load (EC)**	**method**	**assessment**
202600381	Q1	Mathematical Statistics 1	7 EC	Lec+Tu	W+Pj
202300017	Q1	Analysis 3	5 EC	Lec+Tu	W
202300018	Q1	Reflection 1	3 EC	PR	O+P+Pj
202300026	Q2	Mathematical Statistics 2	5 EC	Lec+Tu	W+P
202600060	Q2	Linear Optimisation	5 EC	Lec+Tu	W
202300028	Q2	Nonlinear Optimisation and Learning	5 EC	Lec+Tu+PR	W+P+Pj
202500366	Q3	Algorithmic Discrete Mathematics	3 EC	Lec + Tu	W
202600412	Q3	Algorithms and Data Structures	2 EC	Lec + Tu	W
202500368	Q3	Languages & Machines	3 EC	Lec + Tu	W
202600413	Q3	Algebra	4 EC	Lec + Tu	W
202001362	Q3	Implementation Project on Graph Isomorphism	3 EC	PR	Pj
202200336	Q4	Markov Chains	4 EC	Lec + Tu	W
202200337	Q4	Stochastic Models	4 EC	Lec + Tu	W
202200338	Q4	Stochastic Simulation	4 EC	Lec + PR	Pj
202200339	Q4	Project Stochastic Models in Practice	3 EC	PR	Pj + Ps
Entire academic year			**60 EC**		

Table 3: The third academic year

Study Units			Study	Teaching	Form of
Code	**Quartile**	**Name**	**load (EC)**	**method**	**assessment**
	Q1+Q2	Minor profile[a]	30 EC		
202400631	Q3	Graph Theory	4 EC	Lec + Tu	W
202400632	Q3	Introduction to PDE	4 EC	Lec + Tu	W
202400633	Q3	Reflection 2[b]	3 EC	Lec	O
		Master Orientation Elective (1 of 3):			
202400634	Q3	Mathematics behind Data-Driven Methods	4 EC	Lec + Tu + PR	Pj + Ps + Or
202400635	Q3	Topics in Sequential Decision-Making	4 EC	Lec + Tu	O + W
202400636	Q3	Model Reduction	4 EC	Lec + Tu + PR	Pj + W
201500405	Q4	Complex Function Theory	3 EC	Lec + Tu	W
202400348	Q4	Reflection 3[c]	2 EC	Lec	O
202001379	Q4	Bachelor's Assignment[c]	10 EC	PR	P + Ps
Entire academic year			**60 EC**		

[a] Sequence requirement 1: students may only start participating in (part of) these study units once they have gained at least 75 EC.

[b] Sequence requirement 2: students may only participate in this study unit once they have passed all the study units of the first two years.

[c] Sequence requirement 3: students may only participate in these study units once they have passed the study unit *Reflection 2*.

Section 12 Annex to the education and examination regulations for the double degree programme Applied Mathematics and Applied Physics

This annex describes the rules regarding the double degree programme Bachelor's in Applied Mathematics and Bachelor's in Applied Physics. The study requirements are based on the Rules of the Examination Board AM and the AP Examination Board[18].

Article 12.1 Study programme AM-AP

The tailored programme for the double degree Bachelor's in Applied Mathematics and Bachelor's in Applied Physics is summarised in Tables 4, 5 and 6 below:

Table 4: The first academic year for the double degree AM-AP

Quartile	Applied Mathematics components		Applied Physics components	
Q1	Linear Structures 1	5 EC	Dynamics & Relativity	4.5 EC
(17 EC)	Analysis 1	5 EC	Project Dynamics & Relativity	2.5 EC
Q2	Linear Structures 2	4 EC	Thermodynamics	4 EC
(18 EC)	Analysis 2	6 EC	Project Thermodynamics	4 EC
Semester 1			Lab Course	4 EC
(7 EC)			Programming and Data Processing	3 EC
Q3	Probability Theory	5 EC	Instrumentation	4 EC
(19 EC)	Signals and Transforms	5 EC		
	Modelling 2 + Project AP	5 EC		
Q4	Numerical Mathematics	5 EC	Quantum Matter	5 EC
(19 EC)	Differential Equations	5 EC	Geometric Optics	2.5 EC
			Project ES	1.5 EC
Entire academic year: 80 EC				

Table 5: The second academic year for the double degree AM-AP

Quartile	Applied Mathematics components		Applied Physics components	
Q5	Mathematical Statistics 1	7 EC	Models	4.5 EC
(20.5 EC)	Analysis 3	5 EC	Classical Mechanics	4 EC
Q6	Linear Optimisation	5 EC	Optics Theory	4.5 EC
(17 EC)			Optics Practical	2.5 EC
			Quantum Mechanics	5 EC
Q7	Algebra	4 EC	Solid State Physics	7 EC
(19 EC)			Statistical Physics	5 EC
			Intro Electrodynamics	3 EC
Q8	Markov Chains	4 EC	Physics of Fluids Theory	4.5 EC
(21 EC)	Stochastic Models	4 EC	Physics of Fluids Practicals	2.5 EC
			Electrodynamics	6 EC
Entire academic year: 77.5 EC				

[18] In the event of a change to the double degree programme as stated in Article 12.1 of this annex, individual agreements will be made with the students by the examination committees of both programmes

Table 6: The third academic year for the double degree AM-AP

Quartile	Applied Mathematics components		Applied Physics components	
Q9 *(20 EC)*	**Minor + 5 EC Elective**			
Q10 *(20 EC)*	**Minor + 5 EC Elective**			
Q11 *(20 EC)*	Introduction to PDE Master orientation elective Graph Theory	4 EC 4 EC 4 EC	Preparation B.'s Assignment Master orientation elective	3 EC 5 EC
Q12 *(20 EC)*	Complex Function Theory Reflection 3	3 EC 2 EC		
	Bachelor's Assignment			15 EC
Entire academic year:			**78 EC**	

Article 12.2 Transitional arrangements

In 2024-2025 a new curriculum for year 3 was started for Cohort 2022. For students from Cohort 2021 and earlier, whenever required (for instance, if students still need to pass first-year courses of their programme), the programme coordinator BSc AM will set up an alternative curriculum, in consultation with the examination board and the programme coordinator BSc AP.

Article 12.3 Safety

Safety requirements are compulsory while working in a laboratory. The student is obliged to follow these rules.

Article 12.4 Minor and Bachelor's Assignment

a. The minor consists of 15 EC (a quartile) up till cohort 2021. The minor consists of 30 EC as of cohort 2022. The permitted minor offer is stated on the minor website: https://www.utwente.nl/en/education/electives/minor/

b. Before starting a minor, the student is expected to meet the prior knowledge requirements, as described in the minor's course catalogue.

c. Before starting (part of) a minor, the student must have obtained at least 100 EC from the first two years of the Bachelor's programme.

d. The student can only start with the Bachelor's Assignment if he has fully passed the first year programme and if he obtained a minimum of 60 EC from the second and third year programme excluding the minor.

e. After the advice of the Examination Board, at the request of the student, the Programme Board may grant exemption from the condition referred in Paragraph a., Paragraph b., Paragraph c. and Paragraph d. of this article. This may cause a delay in the study progress.

Article 12.5 Teaching evaluation

1. All study units of the programme are parts of some modules. The online Student Experience Questionnaire (SEQ) is used for evaluation purposes at the conclusion of modules;
2. At least once a year there will be a panel discussion with students participating in the double degree;
3. Additionally, there will be an extra panel discussion after the first semester of the first year.

Article 12.6 Final examination regulations

1. Students will pass the Bachelor's final degree audit for the AM and the AP programme if all study units have a passing grade.
2. Otherwise, the student will not pass the final degree audit for AM and AP and will not receive the Bachelor's degrees.

Article 12.7 Cum Laude

1. The AM Examination Board can decide that a student passes the Bachelor's final degree audit for AP and AM with distinction (cum laude) for AM. The degree is awarded with distinction, taking into account all of the following conditions:
    a. The student passes the Bachelor's final degree audit for AP and AM within four years of initial enrolment (performance requirement).
    b. All study units are completed with a passing grade.
    c. The average of all numeric grades (including EX) is 8.0 or higher. This is a weighted average based on the corresponding number of ECs per study unit. Results for study units outside the examination programme are not taken into account.
    d. No more than one study unit may have a grade lower than 7.0.
    e. The grade for the Bachelor's Assignment is 8.5 or higher.

    These conditions will be checked, including academic misconduct (article 12.7.4), without the need of a request to the Examination Board.
2. In exceptional cases, and at the student's request, the Examination Board may award the distinction of cum laude if the student has met all requirements with the exception of the performance requirement, due to extenuating circumstances. These circumstances may involve delays recognised and provided for by the institution.
3. Cum laude for one programme does not automatically imply cum laude for another programme of a double degree.
4. Students who provenly committed academic misconduct within the Bachelor Programme of Applied Mathematics or Applied Physics can be excluded from a specification of Cum Laude.

Article 12.8 Binding Recommendation (BSA)

A student pursuing the double degree programme, as stipulated in Article 12.1 of this annex, will receive a positive recommendation on continuation of the study programme in Applied Mathematics upon satisfying the following conditions (Article 6.2):

1. Successful completion of at least 45 credits from the first year's study units.
2. Successful completion of at least six of the following study units: Linear Structures 1, Linear Structures 2, Analysis 1, Analysis 2, Probability Theory, Signals and Transforms, Numerical Mathematics and Differential Equations.
3. A maximum of 15 EC incomplete from the total ECs associated with the first year's AM-study units of the double degree programme. See Article 12.1 for the AM-study units.

Section 13 Annex to the education and examination regulations for the double degree programme Applied Mathematics and Technical Computer Science

This annex describes the rules regarding the double degree programme Bachelor's in Applied Mathematics and Bachelor's in Technical Computer Science. The study requirements are based on the Rules of the Examination Board AM and the TCS Examination Board[19].

Article 13.1 Study programme AM-TCS

The tailored programme for the double degree Bachelor's in Applied Mathematics and Bachelor's in Technical Computer Science is summarised in Tables 7, 8 and 9 below, where the column Division indicates the programme a course belongs to, which is relevant for Article 13.4.b.

Table 7: The first academic year for the double degree AM-TCS

Course name	Q	EC	Division
Linear Structures 1	1A	5	AM
Analysis 1	1A	5	AM
Software Diamond	1A	3	TCS
Information Diamond	1A	3	TCS
Hardware Diamond	1A	3	TCS
Cybersecurity and Law Diamond	1A	3	TCS
Linear Structures 2	1B	4	AM
Analysis 2	1B	6	AM
Introduction to Programming	1B	3	TCS
Advanced Programming	1B	3	TCS
Software System Implementation Project	1B	3	TCS
Signals and Transforms	2A	5	AM
Probability Theory AM	2A	5	AM
Network Systems part 1	2A	3	TCS
Network Systems part 2	2A	3	TCS
Network Systems part 3	2A	3	TCS
Network Systems Project	2A	3	TCS
Numerical Mathematics	2B	5	AM
Differential Equations	2B	5	AM
Secure Web Development	2B	3	TCS
Databases	2B	3	TCS
Data & Information Project for DD	2B	4	TCS
Entire academic year:		**83**	**EC**

[19] In the event of a change to the double degree programme as stated in Section 13 of this annex, individual agreements will be made with the students by the examination boards of both programmes

Table 8: The second academic year for the double degree AM-TCS

Course name	Q	EC	Division
Mathematical Statistics 1	1A	7	AM
Computer Architecture and Organisation	1A	4	TCS
Operating Systems	1A	4	TCS
Computer Systems Project	1A	4	TCS
Mathematical Statistics 2	1B	5	AM
Linear Optimization	1B	5	AM
Intro to AI and Machine Learning Theory	1B	3	TCS
Intro to AI and Machine Learning Practice	1B	3	TCS
UX Theory	1B	2	TCS
UX Project	1B	4	TCS
Algorithmic Discrete Mathematics	2A	3	AM/TCS
Algorithms and Data Structures	2A	2	AM/TCS
Languages & Machines	2A	3	AM/TCS
Algebra	2A	4	AM/TCS
Implementation Project on Graph Isomorphism	2A	3	AM/TCS
Modelling 2	2A	4	AM
Markov Chains	2B	4	AM
Stochastic Models	2B	4	AM
Stochastic Simulation	2B	4	AM
Project Stochastic Models in Practice	2B	3	AM
Modelling 3	2B	4	AM
Entire academic year:		**79**	**EC**

Table 9: The third academic year for the double degree AM-TCS

Course name	Q	EC	Division
Analysis 3	1A	5	AM
Reflection 2[a]	1A	3	AM
Data Quality and Ethics	1A	3	TCS
Machine Learning for Datatypes	1A	3	TCS
DS&AI Project	1A	4	TCS
Explainable AI	1A	2	TCS
Elective courses (1 of 2):			
Advanced Machine Learning	1A	3	TCS
Knowledge Representation and Reasoning Advanced	1A	3	TCS
Minor selection	1B	15	AM/TCS
Graph theory	2A	4	AM
Design Project	2A	15	TCS
Bachelor's Assignment Double Degree[b,c]	2B	15	AM/TCS
Reflection 3[b,c]	2B	2	AM
Complex Function Theory	2B	3	AM
Entire academic year:		**77**	**EC**

[a] Students may only participate in Reflection 2 once they have passed all the study units of eight quartiles, including all of year 1.

[b] Students may only participate in Bachelor's Assignment Double Degree and Reflection 3 after passing the study unit Reflection 2.

[c] Students have the option to do Reflection 3 and the Bachelor's Assignment Double Degree in quartile 1B and move the Minor to quartile 2B.

Article 13.2 Minor and Bachelor's Assignment

a. The minor consists of 15 EC (a quartile); The permitted minor offer is stated on the minor website: https://www.utwente.nl/en/education/electives/minor/

b. Before starting a minor, the student is expected to meet the prior knowledge requirements, as described in the minor's course catalogue.

c. Before starting (part of) a minor, the student must have completed all first year study units.

d. Students may only participate in Reflection 2 once they have passed all the study units of eight quartiles, including all of year 1.

e. Students may only participate in Bachelor's Assignment Double Degree and Reflection 3 after passing the study unit Reflection 2.

f. After the advice of the Examination Board, at the request of the student, the Programme Board may grant exemption from the condition referred to in any of Paragraph a., Paragraph b., Paragraph c., Paragraph d. or Paragraph e. of this article. This may cause a delay in the study progress.

Article 13.3 Teaching evaluation

1. All study units of the programme are parts of some modules. The online Student Experience Questionnaire (SEQ) is used for evaluation purposes at the conclusion of modules;
2. At least once a year there will be a panel discussion with students participating in the double degree;
3. Additionally, there will be an extra panel discussion after the first semester of the first year.

Article 13.4 Final examination regulations

1. Students who meet the following requirements will pass the Bachelor's final degree audit for the AM and the TCS programme:
    a The student has received an assessment for all study units of the double degree programme;
    b There is no more than one grade of 5.0 for the AM or AM/TCS study units of the first year of the AM-TCS curriculum. The grades are 6.0 or higher or pass for all other study units.
    c The grade for the Bachelor's Assignment is 6.0 or higher.
    d The average of all grades is 6.0 or higher without taking into account the pass/fail grades. This is a weighted average based on the corresponding number of ECs per study unit.
2. In all other cases not specified under paragraph 1, the student will not pass the final degree audit for AM and TCS and will not receive the Bachelor's degrees.

Article 13.5 Cum Laude

1. The Examination Board can decide that a student passes the Bachelor's final degree audit for TCS and AM with distinction (cum laude) for AM. The degree is awarded with distinction, taking into account all of the following conditions:
    a. The student passes the Bachelor's final degree audit for TCS and AM within four years of initial enrolment (performance requirement).
    b. All study units are completed with a passing grade.
    c. The average of all numeric grades (including EX) is 8.0 or higher. This is a weighted average based on the corresponding number of ECs per study unit. Results for study units outside the examination programme are not taken into account.
    d. No more than one study unit may have a grade lower than 7.0.
    e. The grade for the Bachelor's Assignment is 8.5 or higher.

    These conditions will be checked, including academic misconduct (article 13.5.4), without the need of a request to the Examination Board.

2. In exceptional cases and at the student's request, the Examination Board may award the distinction of cum laude if the student has met all requirements with the exception of the performance requirement, due to extenuating circumstances. These circumstances may involve delays recognised and provided for by the institution.
3. Cum laude for one programme does not automatically imply cum laude for another programme of a double degree.
4. Students who provenly committed academic misconduct within the Bachelor Programme of Applied Mathematics or Technical Computer Science can be excluded from a specification of Cum Laude.

Article 13.6 Binding Recommendation (BSA)

A student pursuing the double degree programme, as stipulated in Article 13.1 of this annex, will receive a positive recommendation on continuation of the study programme in Applied Mathematics upon satisfying the following conditions (Article 6.2):

1. Successful completion of at least 45 credits from the first year's study units.
2. Successful completion of at least six of the following study units: Linear Structures 1, Linear Structures 2, Analysis 1, Analysis 2, Probability Theory, Signals and Transforms, Numerical Mathematics and Differential Equations.

Article 13.7 Transitional arrangements

In 2024-2025 a new curriculum for year 3 was started for Cohort 2022. For students from Cohort 2021 and earlier whenever required (for instance, if students still need to pass first-year courses of their programme), the programme coordinator BSc AM will set up an alternative curriculum, in consultation with the examination board and the programme coordinator BSc TCS.

Transitional arrangement for AM-TCS students of cohorts 2023 and 2024

The student may choose to replace their current quartile 9,
Analysis 3 (202300017)
Reflection 2 (202400633)
Discrete Mathematics (202001234)
Master (orientation) elective,
with the quartile 9 for cohort 2026,
Analysis 3 (202300017)
Reflection 2 (202400633)
Data Quality and Ethics ()
Machine Learning for Datatypes ()
DS&AI Project ()
Explainable AI ()
Elective courses (1 of 2):
Advanced Machine Learning ()
Knowledge Representation and Reasoning Advanced ().