

EDUCATION AND EXAMINATION REGULATIONS

BACHELOR OF SCIENCE ELECTRICAL ENGINEERING

A. UNIVERSITY PART

B. PROGRAMME-SPECIFIC PART

2024-2025 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.

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SECTION A: GENERAL PART

A1. 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 bachelor's 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 core programme (see Article 1.2) are subject to the rules laid down in the appropriate documents, such as the assessment 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 programme for which the student is enrolled.
3. Each programme has its own programme-specific part.
4. For each programme, this general section and the programme-specific part together form the education and examination regulations for the bachelor's 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 bachelor's 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 bachelor's 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 binding¹.
 - 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 for exemptions in respect of provisions laid down in the education and examination regulations should be submitted to the examination board or the programme director of the student's own bachelor's 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 schedule: A schedule showing the method of assessment for a module.

(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

¹ The Dutch version of Section A can be found here: <https://www.utwente.nl/en/eemcs/education/rules-guidelines/eer-b/eer-b2022/eemcs-bachelor-oer-2022-nl.pdf>

involving expulsion from the programme in accordance with Article 7.8b, paragraph 3 WHW, issued by the programme director on behalf of the institutional administration.

Canvas: University of Twente's digital learning environment.

Core programme: The same study units from the curriculum that apply to all the students following a 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.

Examination: An evaluation, performed to conclude a study unit, of the student's knowledge, understanding and skills as well as an assessment of the outcomes of that evaluation (Article 7.10 WHW); an examination may consist of a number of tests.

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 administration: 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 offer outside the programme.

Module: A total of 15 credits of one or more study units, in which the student's programme-specific knowledge, skills and attitude are developed and assessed as far as possible in an integrated and/or coherent manner. A modules can be coherent or integrated, or a mix of those. The programme specific part states if a module is integrated, coherent or mixed.²

- *Coherent:* A coherent modules consists of study units that together comprise 15 credits. Each study unit is concluded with an examination, resulting in receiving a grade and obtaining credits when that study unit is successfully passed.
- *Integrated:* An integrated module consists of one study unit of 15 credits. The study unit contains one or more tests, resulting in one grade for the study unit, in this case the module. All tests of an integrated study unit must be successfully passed in order to obtain the credits.
- *Mixed:* A mixed module consists of multiple study units.

MyTimetable/TE viewer: The application used at the University of Twente to view and download the timetable of the study programme.

² In accordance with the information on the website for students about organisation of education and modules www.utwente.nl/en/educational-systems/about-the-applications/osiris/manuals-for-students/#about-modules.

Study unit: A programme component as defined in Article 7.3, paragraph 2 and 3 WHW. Each study unit is concluded with an examination. An examination can consist of multiple tests.

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

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: The person appointed by the faculty board to administer the programme (Article 9.17 WHW).

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

Study advisor: 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. This 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. This period may sometimes not be the same as a quarter (a quarter of an academic year).

Test: An evaluation of the student's knowledge, understanding and skills as well as an assessment of the outcomes of that evaluation. A test is part of an examination. 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. A test can consist of subtests.

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.

A2. Contents and structure of the programme

Article 2.1 Final attainment levels and structure of the programme

Explanatory note: Article 7.13 WHW

1. The qualities relating to the knowledge, understanding and skills that the student should have acquired upon completing the programme (aims and learning outcomes) are set out in the programme-specific appendix.
2. The programme consists of 180 credits.
 - a) The 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 educational programme is specified in the programme-specific appendix.
 - 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.
 - e) Students generally complete their minor phase in the first semester of their third year of study.
 - f) The 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 at a minimum have completed the core of the bachelor's programme to be admitted to the graduation phase.
 - j) The examination board³ 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.
3. 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 programme's language of tuition

1. The official language of tuition is the language in which education is given, in which teaching material is provided and in which tests and examinations are held. Bachelor's programmes taught in Dutch will generally use study materials in English or Dutch.
2. The choice of the official language for an educational programme or components of an educational programme lies with the programme director, subject to the right of consent of the programme committee. The educational programme's language of tuition is specified in the programme-specific appendix.

³ It is important that the student is still able to achieve the final attainment levels of the 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.

3. If programme components deviate from the language of tuition, then this is to take place in accordance with the Code of Conduct for Languages of the University of Twente and Article 7.2 WHW.
4. For bachelor's programmes taught in Dutch, components of study units may be taught and assessed in English, if:
 - a) a lecturer or tutor in the unit of study is not a native speaker of Dutch, or
 - b) students from the relevant bachelor's programme take the module together with students from an English-taught bachelor's programme, or
 - c) the programme director considers it necessary in order to fulfil one of the attainment targets or objectives of the educational programme in question in the area of English language communication skills.

Article 2.3 Exemption

1. The examination board may grant an exemption to students at their request for one or more examinations or tests. To this end, the student should 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 a personal moral dilemma. 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

The examination board decides on requests for permission to take an individualized programme as referred to in Article 7.3 WHW. The examination board assesses whether an individualised programme is appropriate and consistent within the domain of the educational programme and whether the level is high enough in light of the attainment targets of the programme.

A3. 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.
4. The programme director publishes at least the following details of the study units in Osiris not less than four (4) weeks in advance: scope, learning objectives and content, language of tuition and assessment, prerequisites, required and recommended study materials, design of teaching methods and assessment.
5. The possibility of unconditional access to at least one resit⁴ must be offered for each study unit in the same academic year. An exception may be made for practical exercises (such as practical classes and projects).

Article 3.2 Online assessment

1. If an examination or test is administered using *online surveillance*⁵ or *online proctoring*⁶, the examination board may set further rules and conditions for online (proctored) assessment.
2. Further information and detailed rules on online assessment can be found on the university's website.

Article 3.3 Results

1. Results of examinations, tests or components of tests must be announced to students. Osiris is used for the formal⁷ registration of grades for examinations and in some cases also for tests.
2. 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 their keys and the norm for assessment.
3. The time allotted to administering a test may not exceed three hours. Exceptions in this regard are listed in section 7.2.
If the examiner wishes to use a form of assessment that requires more than three hours, the examiner must, with due regard for article 3.1.4, ask the examination board for approval to deviate from the above.
4. Test results are expressed in a grade from 1 to 10 with a single decimal, or as 'pass' / 'fail'.
5. The examination result of a study unit, as determined by the examiner, is expressed in half grades from 1.0 to 5.0 and from 6.0 to 10.0⁸, with grades only being rounded in the final phase⁹ of the assessment of a study unit and in accordance with the schedule below:

⁴ This means resits of all the tests within a study unit.

⁵ Camera surveillance of the student or students during an unrecorded test, using for example Canvas, Teams, etc.

⁶ Surveillance of the student or students using special *proctoring* software, such as Proctorio.

⁷ 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.

⁸ In Osiris, a comma is used, based on the Dutch grading system (e.g. 7,0).

⁹ Final phase: when all grades are known.

If figure before the decimal (n) ≠5	
Figure ≥n,00 en <n,25	⇒ n,0
Figure ≥n,25 en < n,75	⇒ n,5
Figure ≥n,75 en <(n+1),00	⇒ (n+1),0
If figure before the decimal =5:	
Figure ≥5,00 en <5,50	⇒ 5,0
Figure ≥5,50 en <6,00	⇒ 6,0

6. Examination results of 6.0 or higher are a pass.
7. 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 5.
8. Credits may only be issued for a study unit if the study unit has been completed with a pass mark.
9. If more than one examination or test result has been recorded in Osiris for one and the same unit of study, the highest grade will apply.

Article 3.4 Modules

1. Each module has a module coordinator, appointed by the programme director.
2. If a module comprises a single study unit then the examiner of that study unit will also be the module examiner.

Article 3.5 Registration

1. Registration in Osiris is required prior to participating in a module or study unit¹⁰.
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. The student is automatically de-registered from the resit opportunity if a sufficient grade is obtained for the first test opportunity. In such case, the student still has the opportunity to re-register 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 opportunity¹¹.

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 applicable¹², the number of tests and their relative weighting;
 - c) the language of tuition and assessment (Dutch-language programmes only);
 - d) the manner in which the examinations and/or tests are sat (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;

¹⁰ The applicable registration deadlines are mentioned on the webpage www.utwente.nl/en/education/student-services/education/courses-and-modules/

¹¹ www.utwente.nl/en/ces/sal/exams/participants/

¹² As with integrated modules or larger study units.

- b) the period of validity of the result of the test or tests;
 - c) in which weeks examinations, tests, resits and discussions (Article 3.10) are held (the precise times and dates will be announced via MyTimetable/TE viewer;
 - d) any required minimum grade per test; a minimum grade for a test may not be set higher than 5.5;
 - e) 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.

Article 3.7 Oral examinations

1. If the student or the examiner wishes a third party to be present when administering an oral examination, 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.
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 examiner is to inform the student of the result of an oral examination within one working day, unless, for the examiner, 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.
2. The result of a test is to be disclosed to the student within ten working days after the test date, with due regard for paragraph 8 below.
3. The examination result of a study unit is to be disclosed to the student within ten working days after the conclusion of the teaching period during which the study unit is offered.
4. The examination date is the date on which the test is taken with which the student definitively passes the study unit.
5. The test date is the date on which a written or oral test is taken.
6. 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 test).
7. If a test resit is planned shortly after the first test, the results of the first test will be published at least five working days before the resit to give the student time to prepare.
8. Should the examiner not be able to meet the deadline referred to in paragraphs 1, 2, 3, 4 and 7 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 an examination that has been passed remain valid indefinitely. The period of validity of an examination that was passed may only be limited if the tested knowledge or understanding is demonstrably outdated or the tested skills are demonstrably outdated.
2. Results of tests of a study unit that was failed expire after the academic year. The study unit must be repeated in its entirety in the next academic year. Any exceptions are listed in the programme specific part and mentioned in the assessment schedule in accordance with Article 3.6 paragraph 5.
3. If the period of validity of a result of an examination is limited as described in paragraph 1, 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/

Article 3.10 Right of discussion and inspection

1. Student are entitled to discuss and review their test 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.
2. Individual and groups discussions must take place no later than five weeks after the publication of the test or samiantion results, but at least three working daus prior to the next test opportunity, in the (online) presence of the examiner or a substitute designated 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. Individual and group discussions must take place no later than five weeks after the publication of the test results, but at least three working days prior to the next test opportunity, in the presence of the examiner or a substitute designated for that purpose.
6. Students are to be given the opportunity to inspect their assessed work for a period of two years following the assessment.

Article 3.11 Retention period for tests

1. The retention period for test assignments, keys, papers and the assessments of written tests is two years.
2. The retention period for final bachelor's projects is a minimum of seven years.

Article 3.12 Teaching evaluation

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

A4. Examinations

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 educational programme or group of programmes;
 - b) examination boards determine 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 bachelor's final examination is considered to be complete when the student has passed all study unit examinations in the bachelor's programme. The examination board may, under conditions that it has set, determine that not every examination has to be completed successfully to determine that the bachelor's 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 cases¹³, 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 note: 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 administration 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);

¹³ 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.

- 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 programme was last accredited or the date on which the programme passed the new 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 programme and the name of the university;
 - b) that the programme was offered at an institution for academic education;
 - c) a description of the programme content; an indication of any specialisation and/or minor, if applicable;
 - d) the study workload of the programme;
 - 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 on the bachelor's 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.¹⁴ 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, 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.

¹⁴ 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.

A5. Study guidance

Explanatory notes: Article 7.13 paragraph 2u and Article 7.59 WHW

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 study 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 programme.
7. A systematic method on how students are monitored and obstruction in study progress is signalled is documented by the programme (for example in a policy plan or an annual cycle).
8. Information about the guidance facilities of the study programme is in any case available on the website of the study 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.
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.

A6. (Binding) recommendation on continuation of studies

Explanatory note: Article 7.8b WHW

Article 6.1 Preliminary recommendation on continuation of studies

1. Students will receive a preliminary recommendation on continuation of studies by calendar week 52 at the latest of their first year of enrolment in the programme and a second recommendation on continuation of studies by calendar week 10 at the latest. These recommendations can be positive, negative or neutral and are not binding. Students with a postponed recommendation on continuation of studies receive a warning in their second year of enrolment in the degree programme when their study progress is jeopardized.
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).
3. Deviation from paragraph 1 is only allowed in case a UT degree programme, offered at the Vrije University ('VU-UT programme'), wants to issue only one preliminary advice, since the VU works with semesters. All other rules still apply. If and how the programme deviates is described in the programme specific part.

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 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 administration mandates the programme director to issue recommendations on continuation of studies.
2. The recommendation on continuation of studies includes:
 - a) the results of examinations and tests from the first year of the programme that remain valid the following academic year;
 - 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 attained¹⁵.

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 not suited to the educational programme, or 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.

¹⁵ For example: 'The student must pass all mathematics study units from the B1 programme' is not permitted, whereas 'The student must pass three of the four mathematics study units from the B1 programme' is permitted

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 FOBOS 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 bachelor's 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 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 enrolls 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 by 31 January 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 bachelor's programme in a following academic year, this enrolment is designated as the first-year enrolment.
3. Students who de-enrol after 1 February 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 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.
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 programme, the end of the second year of enrolment in the relevant programme at the latest will be the deadline for issuing the recommendation on continuation of studies. The student will in any event be notified in writing within six weeks of the date of

enrolment before which date the programme will issue the final recommendation. 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.

A7. Studying with a functional impairment

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

Article 7.1 Studying with a functional impairment

1. A functional impairment is defined as having an illness, condition, impairment or handicap 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 7.2 Request for facilities

1. The study adviser and the student concerned will discuss the most effective facilities that can be provided for the student.
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.

A8. Amendments, transitional arrangements, appeals and objections

Article 8.1 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 8.2 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 8.3 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 8.4 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 programme will continue to be part of the curriculum. The final bachelor's examination is to be based on the curriculum most recently adopted by the faculty board.
4. The transitional arrangement will always include:
 - a) the study units, which have been dropped, that are equivalent to study units from the current curriculum as indicated in the programme-specific part;
 - b) an indication that if a study unit that does not involve a practical 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 8.5 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 8.6 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 8.7 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 8.8 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 8.9 Entry into force

These Regulations enter into force on 1 September 2024 and replace the Regulations dated 1 September 2023.

Adopted on 09-07-2024 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.

SECTION B: PROGRAMME-SPECIFIC PART

BACHELOR ELECTRICAL ENGINEERING (B-EE)

About this Part

The Education and Examination Regulations (EER) are subdivided into two parts (Part A and Part B), which together form the EER. Part A, which can be seen as the university section, includes provisions that may apply for all EEMCS Bachelor's degree programmes. Part B contains the provisions that are specific to the particular degree programme, in this case the Bachelor's programme in Electrical Engineering.

SECTION B – PROGRAMME-SPECIFIC PART ELECTRICAL ENGINEERING

B.A – GENERAL PROVISIONS

Article A1 Applicability

The following regulations form the programme-specific part of the university-wide Education and Examination Regulations as referred to in Article 7.12 of the Higher Education and Research Act (WHW), and apply to the Bachelor's degree programme in Electrical Engineering, from now on referred to as "the programme".

Article A2 Programme intended learning outcomes

The intended learning outcomes for graduates of the Bachelor's degree programme in Electrical Engineering are listed below.

1. Domain knowledge & skills

The student understands and can apply basic theoretical concepts, important methods and techniques in the fields listed below and has skills to reflect on, increase and develop these through study:

- a) elements from the electrical engineering subfields analog and digital electronics, electromagnetism and electrodynamics, control engineering, communication science and signal processing.
- b) mathematics.
- c) programming, including digital logic and computer systems.
- d) one of the elective fields of, device physics (basic quantum mechanics, electronic and optical devices and transducers) or network systems (basic principles and key protocols in communication systems, networks, and networked applications).

2. Research & Design

The student

- a) is able to handle complex research or development-oriented situations.
- b) is able to carry out studies and draw valid conclusions on a scientific basis.
- c) is able to study another academic field and is able to identify and apply research and/or design in that field.
- d) can work systematically and methodically.
- e) is able to identify sub problems and reformulate research questions and problem definitions.
- f) is able to find, assess and use scientific information.

3. Organize

The student

- a) can independently function in a disciplinary as well as in an interdisciplinary collaboration with a professional attitude.
- b) is able to define separate subproblems for team members, to assure the interconnection between these subproblems and to implement a timeline.
- c) has knowledge of and can apply planning and management of individual and team-based projects.

4 Report & Presentation

The student is able to communicate academic problems and solutions to both peers and non-specialists, and to stakeholders and users.

5 Personal Development

The student

- a) can identify own learning needs and structure his or her own learning in different learning environments.
- b) is aware of the temporal and societal context of science and technology and is able to apply this into his or her own scientific work.

Article A3 Structure of the programme

All students must follow the programme full-time.

Article A4 Language of the programme

1. The language used in the units of study of the Electrical Engineering programme is English. This applies to both teaching and examination.
2. The Examination Board can grant permission to the examiner to hold an examination in a different language.

Article A5 Laptop

Students should have access to a notebook (laptop) when they start their studies. The Notebook Service Centre (NSC) of the University of Twente offers a laptop that fulfils the minimum requirements.

Article A6 Binding recommendation on continuation of studies

In accordance with article 6.2.2.c of the general section of the Education and Examination Regulations the programme director is allowed to set additional content-related requirements for the binding recommendation. A student can receive a binding recommendation on discontinuation of studies if:

- a. the student has obtained less than 75% of the first-year study load, counted by the ECs of the study units as mentioned in B1.1;
- b. the student has obtained more than two insufficient grades in category A, as mentioned in B1.1;
- c. the student has obtained more than one insufficient grade in category B, as mentioned in B1.1;
- d. the student has obtained more than two insufficient grades in category C, as mentioned in B1.1.

Article A7 Quality assurance

1. The programme director is responsible for the evaluation of the programme.
2. The programme has installed an independent evaluation committee. On request of the programme committee, the programme director, or via the student organization ETSV Scintilla, this evaluation committee will organize an evaluation, consisting of at least two panel discussions. A panel discussion consists of five to ten students participating in the module that is being evaluated, the module coordinator and / or lecturers involved in the module that is being evaluated and a chair from the evaluation committee.
3. For the internal quality assurance, the following instruments are used:
 - a. the UT Student Experience Questionnaire (UT-SEQ);
 - b. overview of quantitative results, such as passing rates;
 - c. lecturer panel meetings in which the lecturers; points of discussion are the evaluations mentioned in points a and b, and when applicable the panel discussions.
4. The outcomes of the internal quality assurance are published in the following ways:
 - a. for each module, based on the minutes of the lecturer panel meetings, an evaluation report is set up; this evaluation report is sent to the involved lecturers, the staff of the programme and the programme committee;

- b. overviews of the quantitative results of the UT Student Experience Questionnaire (UT-SEQ) are published on the learning management system (Canvas) of the University of Twente.
5. The following internal and external evaluations are used to evaluate the curriculum and the entire programme:
 - a. an exit-survey about the entire bachelor's programme;
 - b. the National Student Survey (NSE).

The programme director gives a response to these evaluations, accommodated with a plan for improvement. The evaluations and plan for improvement are submitted to the programme committee.
6. Each year, the programme director sets up a plan for improvement, which is based on internal and external evaluations and new insights.
 - a. The plan for improvement will be discussed in the programme committee;
 - b. The plan for improvement will be included in the faculty's annual plan.

B.B - Various types of assessment and the degree programme

Article B1 The content of the programme

The teaching methods used are, lectures, tutorials, lab work, assignments, project work, presentations and problem-based learning. Projects and lab work are carried out individually or by groups of students according to the regulations of the individual modules. Module 11 is a mixed module, module 12 is an integrated module; all others are coherent.

Subjects are tested by means of written exams, oral exams, reports, lab journals, presentations and posters.

1. The first year consists of the following units of study, with the indicated study load in credits:

Module	Name /	Study Units	Category *	EC
1	Electronics, Sensors and Actuators	Circuit Analysis 1	A	6
		Calculus 1	B	4
		Sensors & Actuators Project	C	5
2	Electric Circuits	Circuit Analysis 2	A	4
		Calculus 2	B	4
		Power electronics Project	C	4
		Programming in C	C	3
3	Electronics	Low Frequency Electronics	A	5
		Electro- and MagnetoStatics	A	5
		Vector Calculus	B	2
		Electronics Project	C	3
4	Wireless Transmission	High Frequency Electronics	A	4.5
		Electrodynamics	A	3
		Linear Algebra	B	3
		Wireless Transmission Project	C	4.5

* The categories A, B, C are used in article A6

2. The second year consist of the following units of study, with the indicated study load in credits:

Module	Name	Study Units	EC
5	Computer Systems for EE	Computer Architecture and Organisation	4
		Digital Hardware	6
		Continuous Linear Systems	5
6	Systems & Control	Engineering System Dynamics	5
		Control Engineering	5
		Project System & Control	5
8	Signal Processing and Communications	Communication Systems	6
		Digital Signal Processing	5
		Probability Theory	4

And one of the two elective modules

Module	Name	Study Units	EC
7A	Device Physics	Semiconductor Physics	3
		Semiconductor Devices	3
		Single Electron Transistor	1.5
		Transduction & Mechanical Devices	3
		Optical Devices	1.5
		Project	3
7B	Network Systems for EE	Network Systems	12
		Programming 2	3

The third year consist of the following units of study, with the indicated study load in credits:

Module	Name	Study Units	EC
9+10		Two elective minors	30
11	Electronic System Design	Electronic System- Design System Engineering – 25% Philosophy of Technology and Design –25% Prototyping – 50%	8.5
		Embedded Signal Processing Survey Paper	5.5 1
12	Bachelor Thesis Project EE	Bachelor Thesis Project EE Scientific Quality - 50% Communication - 30% Organisation, planning & collaboration - 20%	15

Article B2 Compensation arrangements first and second year

1. A student may request to designate one and only one first-year study unit as "compensated" after having received a final Osiris grade of exactly 5.0 and having received two compensation units within the same Category as mentioned in Article B1. This means one 5.0 can be compensated by two study units with a final Osiris grade of 6.5 or higher.
2. The ECs of a compensated study unit in Year 1 will be counted towards the study progress of the student, also for the purpose of the MOMI and BSA regulations.
3. A student may request to designate one and only one second-year non-project study unit as "compensated" after having received a final Osiris grade of exactly 5.0 and having received two non-project compensation units within Modules 5-8. This means one 5.0 can be compensated by two study units with a final Osiris grade of 6.5 or higher.
4. The ECs of a compensated study unit in Year 2 will be counted towards the study progress of the student, also for the purpose of the MOMI regulations.
5. A request to designate a study unit as compensated has to be made to the Bachelor coordinator. The request can be made at any time after the grade has been registered. When granted, the compensation will be registered in Osiris.
6. The choice of a compensated study unit, once registered, cannot be undone or shifted to another study unit. (A student may always take a resit for a compensated study unit, thus possibly raising its grade and nullifying its compensated nature; however, it is not allowed to subsequently designate another study unit as compensated).

Article B3 (Re)taking study units from a lower academic year

1. The passing of the study units of the lowest academic year should be prioritised.
2. Students who have to redo (parts of) a module are not allowed to participate in more than 18 EC's of coursework in one quartile without a study plan that is developed in consultation with the study adviser and approved by the programme coordinator. Without an approved study plan, the student forfeits their eligibility for considerations for exceptions from standard rules, e.g., an extra exam opportunity due to extenuating circumstances is no longer possible.
3. Students are allowed to retake examinations to improve their grades if they have already passed a study unit. In case of lab capacity limitations (or general capacity problems), priority will be given to students who did not pass the study unit yet.
4. In individual cases the teacher decides whether part of the grade can be retained in the case a study unit is comprised of multiple tests.

Article B4 The procedure for examinations

1. There are two scheduled opportunities to take a written test. When the exam of a larger topic is divided over multiple tests, the resit opportunity may be one integral test. The resit opportunity takes place within 10 weeks after the finishing of the module.
2. The Examiner may deviate from the published examination method after approval of the Examination Board. The examiner will inform the students of this change immediately.
3. A report or paper must be written and a presentation must be given on the activities involved in the Bachelor thesis project. The Examiners for these units of study may also require interim presentations to be given.

Article B5 Prior knowledge requirements

1. Students are allowed to start with the two elective modules in the third year after having completed at least all four first year modules.
2. Students are allowed to start with module 12 in the third year after having completed at least all first and second year modules.
3. Elective modules may have prior knowledge requirements, which can be found in the Osiris description of these modules.

Students are strongly advised to have the following knowledge prior to starting the subsequent course:

4. Continuous Linear Systems prior to module 6.
5. Continuous Linear Systems prior to Digital Signal Processing.
6. Low Frequency Electronics, High Frequency Electronics, Continuous Linear Systems and Digital Signal Processing prior to starting the Electronic System Design module (module 11).

Article B6 The Minor

1. A student who is enrolled for the Bachelor's degree programme in Electrical Engineering and who meets the requirements referred to in Article B5 Paragraph 1, may take a minor offered by the University, allowed by the Examination Board and listed in the 'Minor admission review'.
2. In addition to the provisions of Paragraph 1, a student can make a proposal for a minor by combining his own selection of the units of study offered by any university (also called "free minor"). The course program for a free minor needs to be approved by the Examination Board.

Article B7 The Bachelor thesis project

1. When the prior knowledge requirements referred to in Article B5.2 are met, the student may select a research chair at any university as the site where the student will carry out the Bachelor thesis project. In case the assignment is performed outside the department of Electrical Engineering of the University of Twente, the permission of the Programme Director is required prior to starting the thesis project.
2. In any case one of the research chairs of the department of Electrical Engineering or one of the affiliated and approved chairs at the University of Twente is responsible for the assignment. The research groups (chairs) that take part in the Electrical Engineering programme are listed in the table below.

Name of the chair	Abbreviation
Biomedical and Environmental Sensor systems	BIOS
Biomedical Signals and Systems	BSS
Computer Architecture for Embedded Systems	CAES
Design and Analysis of Communication Systems	DACS
Data Management and Biometrics	DMB
Integrated Circuit Design	ICD
Integrated Devices and Systems	IDS
Nano Electronics	NE
Optical Science	OS
Power Electronics and EMC	PE
Robotics & Mechatronics	RAM
Radio Systems	RS

3. The supervisory committee consists of at least two Electrical Engineering examiners, of which at least one is part of an Electrical Engineering chair as mentioned in B6.2.
 - a. The examiners must belong to at least two different research groups.
 - b. All supervisors of the project are members of the assessment committee. Supervisors who are not examiners serve on the committee in an advisory capacity.
 - c. The examiners are collectively responsible for grading the thesis. In case of different opinions among the examiners, the chair of the assessment committee takes the ultimate decision on the grade.
4. The Bachelor thesis project has a study load of 15 credits. The project should be finished within the module.
5. The student's performance shall be assessed on the closing date, irrespective of the stage his work has reached.
6. If the grade for the assignment is below a pass grade, the chair may give the student the opportunity to continue working on the assignment so as to meet the requirements for a pass grade. The extra time allowed shall however be limited to a study load equivalent to 3 credits. The grade for the assignment may not exceed a 6 in this case.
7. The Programme director (PD) decides about additional time in cases that a delay is not caused by the student.
8. If the student's performance is still unsatisfactory after extra time has been allowed, the student will have to do a new assignment with another theme and a different supervisory committee or under the authority of a different chair.

Article B8 Confidentiality

1. The final-thesis report is made public unless confidentiality has been deemed necessary.
2. The Programme director may declare a final thesis report to be confidential for a limited period upon receiving a motivated request to do so.
 - a. A confidential report remains accessible to the supervisor, the Programme director, and any members of bodies with the authority to assess the quality of the grading of the entire programme.

- b. All parties mentioned in Paragraph 2a are required to respect the confidentiality of the report.
 - c. The confidentiality period is by default set at 2 years with an extension possible up to a maximum of 5 years. In exceptional cases the programme director can give permission for a confidentiality period of up to 10 years.
4. If confidentiality is deemed necessary as described in Paragraph 2, the contents of the public final thesis presentation may be adapted to avoid making public those matters that are considered confidential.

Article B9 Extracurricular Activities

For those students who are looking for more than the usual academic challenges, extracurricular activities are organised in the Honours programme. The Honours programme is designed for talented, interested and highly motivated students. The student is offered a 30 EC programme. The programme typically starts in the first year.

If the Honours programme is completed successfully, this will be stated on the degree supplement as an extracurricular programme.

Article B10 Cum Laude

1. The Electrical Engineering Examination Board checks whether the student has fulfilled all requirements. If the *judicium Cum Laude* ('with distinction') applies, this is stated on the diploma and the diploma supplement. The *judicium Cum Laude* can be awarded provided the following requirements are met:
 - a. The 180 EC of the bachelor programme is finished within 3.5 years.
 - b. The EC weighted average of the grades of the study units (excluding the bachelor thesis project) is 8.0 or higher.
 - c. No exemptions were granted.
 - d. The assessment of the study unit Bachelor Thesis Project is 8.5 or higher.
2. Students who have been found guilty of academic misconduct in the programme for which the cum laude is to be awarded, are excluded from the *judicium cum laude*.
3. In individual cases the Examination Board may grant the *judicium Cum Laude* even if not all requirements are met due to extenuating circumstances. It is noted that the distinction of cum laude is never awarded automatically, but only following individual assessment of the student's academic achievements.

B.C - Master's programmes following Bachelors in Electrical Engineering

Article C1 Master's programmes following Bachelors in Electrical Engineering

Students with a Bachelor's degree in Electrical Engineering from the University of Twente are entitled to take the following Master's degree programmes:

- The Master's degree programmes in Electrical Engineering at the University of Twente, Delft University of Technology and Eindhoven University of Technology.
- The Master's degree programme in Systems & Control at Delft University of Technology and Eindhoven University of Technology.
- The Master's degree programme in Embedded Systems offered jointly by the University of Twente, Delft University of Technology and Eindhoven University of Technology.
- The Master's degree programme in Nanotechnology at the University of Twente.
- The Master's degree programme in Interaction Technology at the University of Twente.

The Master's degree programme in Robotics at the University of Twente.

B.D - Flexible Bachelor's degree programme

Article D1 Relevant concepts

The flexible Bachelor's degree programme is a programme as referred to in Article 7.3c of the Higher Education and Research Act (WHW). A student can put such a programme together by selecting from the units of study offered by an institution. The study programme requires permission from the most relevant Examination Board that determines to which degree programme the flexible programme by the students in question shall be deemed to belong to.

Article D2 Permission of the Examination Board

The Examination Board shall draw up guidelines for granting the permission referred to in Article D1, with the provision that the flexible-choice degree programme must be coherent, must have a level comparable with that of the Bachelor's programme referred to in Chapter B, and must meet the requirements stated in Article D3.

Article D3 Examinations and structure of the flexible-choice Bachelor's degree programme

1. The flexible-choice Bachelor's degree programme has a final assessment for the Bachelor's degree.
2. The flexible-choice Bachelor's degree programme must be followed full-time, and has a study load of 180 credits.

Article D4 The composition of the flexible-choice Bachelor's degree programme

The free-choice Bachelor's degree programme shall contain at least one component that is comparable with the Bachelor thesis project referred to in Article B6. This component shall have a study load of 15 credits.

Article D5 Validity of arrangements

1. The Education and Examination Regulations applying to the degree programme to which the unit of study in question normally belongs is leading. This concerns the periods during which examinations can be taken, the frequency of the examinations, the prior knowledge requirements for the various units of study, the way in which examinations are held and the form in which the examination results are announced.
2. If the regulations conflict or lead to insuperable problems for students, the Electrical Engineering Examination Board may permit departures from the regulations.

3. Units of study that have to be successfully completed in accordance with the provisions of Paragraph 1 before a student can proceed to units of study that form part of the free-choice degree programme need not necessarily belong to the free-choice degree programme themselves.
4. In exceptional circumstances, the examiner for a unit of study that must be successfully completed before another unit of study is started may decide that this condition may be waived.

Article D6 Sequence of the various parts of the free-choice Bachelor's degree programme

1. A student who has submitted a request for approval of a free-choice Bachelor's degree programme, shall include the sequence in which the various parts of the programme shall be taken.
2. The Examination Board may decide that certain parts of the programme shall be taken in another sequence than that specified by the applicant.
3.
 - a. In particular, the Examination Board may decide that certain named parts of the programme may not be taken until other named parts of the programme have been successfully completed.
 - b. The assignment referred to in Article D4, may not be started until at least 120 EC have been successfully completed.
 - c. The chair under whose authority the unit of study referred to in Article D4 is performed may determine, in addition to the provisions of a. and b. above, that if the content of the assignment demands this, at most two named units of study with a study load of at most 15 credits shall be successfully completed before the assignment may be started.

B.E - Final and introductory provisions

Article E1 Hardship clause

If these regulations give rise to evidently unfair or otherwise unintended consequences, the Programme Director or the Examination Board (depending on which is competent to deal with the issue in question) may authorize a departure from these regulations.

Article E2 Introduction and amendment of these regulations

1. Amendments to these regulations are approved by the Dean in a separate decree and recorded in Article E3 Paragraph 2.
2. Amendments to arrangements and guidelines relating to these regulations but formulated elsewhere are approved by the Dean in a separate decree, and recorded in Article E3 Paragraph 2.
3. No amendment to these regulations will become active during the current academic year, unless they can be reasonably assumed not to have any adverse effect on the interests of students (including external students). Amendments shall if possible be announced six months before they take effect.
4. The replacement of the old regulations and the amendments introduced in these new regulations shall further not adversely influence the interests of students (including external students) as regards:
 - the period of validity of the regulations as determined by the Examination Board,
 - the approval by the Examination Board of a free-choice degree programme or a free-choice minor put together by students (including external students),
 - any other decision concerning students (including external students) taken by the Examination Board pursuant to these regulations or the preceding regulations.
5. When these regulations or arrangements and guidelines relating to these regulations but formulated elsewhere are amended, transitional arrangements shall be approved to determine in any case under what circumstances and/or during which period use can still be made of the original regulations.

Article E3 Date of commencement
These regulations will be active on 1 September 2024.