

TEACHING AND EXAMINATION REGULATIONS

BACHELOR OF SCIENCE TECHNICAL COMPUTER SCIENCE

A. UNIVERSITY SECTION

B. PROGRAMME-SPECIFIC SECTION

2019-2020 academic year

Introduction to the Teaching 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 Teaching and Examination Regulations (TER (Dutch: OER)).

In accordance with Section 7.13, Paragraph 1, of the WHW, the TER 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 TER 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 TER.

The model TER is subdivided into two sections (Section A and Section B), which together form the TER. 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: UNIVERSITY SECTION

SECTION 1 – General Provisions

Article 1.1 Applicability of these Regulations

1. The Teaching and Examination Regulations apply to all students who are enrolled in the educational programme in question.
2. Students attending courses offered by a different educational programme are subject to the assessment rules laid down in the relevant assessment schedule, in the TER of the relevant educational programme and in the rules and guidelines of the Examination Board of the relevant educational programme. The decision on special facilities in accordance with Article 6.2.5 may only be taken by the Examination Board of the relevant programme.
3. Each educational programme has its own programme-specific Appendix.
4. This general section of the Teaching and Examination Regulations and the programme-specific section jointly form the applicable Teaching and Examination Regulations for the relevant Bachelor's programme.
5. Both the general section and the programme-specific Appendix of the Teaching and Examination Regulations are adopted 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. The rules and guidelines of the Examination Board for the Bachelor's programme in question includes additional rules about academic misconduct, such as which measures the Examination Board may take if it establishes misconduct.
7. The rules and guidelines of the Examination Board of the educational programme includes provisions on order for tests and rules in case of emergencies.
8. The following applies to the language used in the general section and the programme-specific Appendix of the Teaching and Examination Regulations and the rules and guidelines of the Examination Board:
 - a) English versions of the programme-specific Appendix of the Teaching and Examination Regulations and the Examination Board's rules and guidelines should be available for English-taught Bachelor's programmes.
 - b) Where the programme-specific Appendix of the TER and the Examination Board's rules and guidelines are available in both Dutch and English, each version must, for the sake of clarity, state which version is binding.
 - c) An English translation of this general section is available for English-taught Bachelor's programmes. In case of uncertainty, the Dutch version of this general section is binding.
9. Requests for exemptions to provisions laid down in the Teaching and Examination Regulations may be submitted to the Examination Board or the Programme Board, depending on the subject matter. This depends on which body (Examination Board or Programme Board) is authorized or has the duty according to this regulation to take a decision on or make an exception to a provision in this regulation.
10. These regulations have been drawn up using the masculine personal pronouns 'he' and 'him' and 'his'. In these cases, 'she' 'her' and 'hers' may be substituted

Article 1.2 Definitions

The following definitions are used in these Regulations:

- a. **Binding student progress evaluation (BSA):** A student progress evaluation as referred to in Section 7.8 (b), subsections 1 and 2 of the Higher Education and Research Act involving expulsion from the programme in accordance with Section 7.8 (b), subsection 3 of that Act, issued by the Programme Board on behalf of the institutional administration;
- b. **Compulsory holiday:** Required day off work;
- c. **Canvas:** University of Twente's digital learning environment;
- d. **Personal Circumstances Committee:** A committee convened by the institutional administration to advise the institutional administration in individual cases regarding the validity, duration and severity of a specific student's extenuating personal circumstances;
- e. **Credit:** a unit of 28 study load hours, in accordance with the European Credit;
- f. **Transfer System.** A full-time academic year consists of 60 credits, equal to 1680 hours of study (Section 7.4 of the Higher Education and Research Act);
- g. **Examination:** A degree programme is concluded with an examination. If the study units in the degree programme have been completed successfully, then the examination will be deemed to have been completed. The Examination Board may require a supplementary examination;
- h. **Examination Board:** The Examination Board is the body that objectively and professionally assesses whether a student meets the conditions laid down in the Teaching and Examination Regulations regarding the knowledge, understanding and skills required to obtain a degree;
- i. **Examiner:** The individual appointed by the Examination Board to administer examinations and tests and to determine the results, in accordance with Section 7.12 (c) of the Higher Education and Research Act;
- j. **Faculty Board:** Head of the faculty (Section 9.12 of the Higher Education and Research Act);
- k. **Honours Programme:** Institution-wide Bachelor's Honours programme;
- l. **Institution:** University of Twente;
- m. **Institutional administration:** Executive Board, except as otherwise specified;
- n. **Module:** a study unit worth 15 credits;
- o. **Module coordinator:** The individual responsible for the module, as appointed by the Programme Board;
- p. **Module-examiner:** The individual appointed by the Examination Board to determine the results of the study unit;
- q. **Module component:** Component of a module;
- r. **Study unit:** A programme component as defined in Section 7.3, subsections 2 and 3 of the Higher Education and Research Act. Each study unit is concluded with an interim examination;
- s. **Curriculum:** The aggregate of required and elective study units constituting a degree programme as laid down in the programme-specific Appendix;
- t. **Programme:** Bachelor's degree programme as referred to in the programme-specific Appendix to these Teaching and Examination Regulations;
- u. **Programme Board:** The body appointed by the Faculty Board to administer the programme;
- v. **Programme Committee:** Programme Committee as referred to in Section 9.18 of the Higher Education and Research Act;
- w. **Osiris:** System designated by the institutional administration for registration and for providing information on all relevant data related to the students and the university, as described in the Higher Education and Research Act;

- x. **Practical exercise:** A practical exercise as referred to in Section 7.13, subsection 2 (d) of the Higher Education and Research Act is a study unit or a study unit component emphasizing an activity that the student engages in, such as:
 - a) carrying out literature research, completing an assignment or preparing a preliminary design, writing a thesis, article or position paper, or giving a presentation in public;
 - b) carrying out a design or research assignment, doing tests and experiments, participating in practical classes, practicing skills;
 - c) internship, fieldwork or excursions;
 - d) participating in other educational activities deemed necessary and aimed at achieving the required skills, such as targeted practice of clinical skills in a specifically equipped skills lab;
- y. **Student:** Anyone enrolled in a programme in accordance with Sections 7.34 and 7.37 of the Higher Education and Research Act;
- z. **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 students, as well as fulfilling an advisory role;
- aa. **Study workload:** The study workload is expressed in course credits according to the European Credit Transfer System. The study workload for one academic year is 60 credits. 60 credits is equal to 1680 hours of studying;
- bb. **Interim examination:** an investigation of students' knowledge, understanding and skills, and an assessment of the outcomes of that investigation, (Section 7.10 of the Higher Education and Research Act); an interim examination may consist of a number of tests;
- cc. **Test:** Part of an interim examination. If the interim exam for a study unit consists of a single test, then the result of that test will count as the result of the interim exam. A test can be split into components and administered during multiple sessions;
- dd. **Test result:** A result that is part of the final result for a module;
- ee. **Assessment schedule:** A schedule showing the method of assessment for a module;
- ff. **UT:** University of Twente;
- gg. **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;
- hh. **Higher Education and Research Act:** The Higher Education and Research Act (abbreviated in Dutch to WHW), Bulletin of Acts and Decrees 1992, 593, and its subsequent amendments;

The definition of all other terms used in these regulations is in accordance with the definition accorded by statute.

SECTION 2 – ADMISSION

Article 2.1 Prerequisites

Admission will be granted to the programme if the prerequisites for enrolment in university education have been met in accordance with the Higher Education and Research Act, Sections 7.24, 7.25 and 7.28. Further details are available on the University of Twente website¹.

¹ <https://www.utwente.nl/onderwijs/bachelor/toelating-en-inschrijving/> or <http://www.utwente.nl/en/education/bachelor/admission/>

Article 2.2 Bachelor's programme language requirement for holders of a non-Dutch qualification

Applicants in possession of qualifications obtained outside the Netherlands may only enrol:

1. If the programme is taught in Dutch: after complying with the Dutch language proficiency requirement by passing the state examination in Dutch as a second language, level 2, or earning the certificate Dutch as a Foreign Language, 'Profiel Academische Taalvaardigheid' (PAT) or 'Profiel Taalvaardigheid Hoger Onderwijs' (PTHO), and
2. If the programme is taught in English: after complying with the English language proficiency requirement, involving proficiency at a level commensurate with the Dutch pre-university (VWO) exam. Passing one of the following tests also serves as proof of the required proficiency:
 - IELTS (International English Language Testing System), academic module. The minimum required IELTS score (overall band) is: 6.0;
 - TOEFL (Test Of English as a Foreign Language). The minimum required TOEFL score is: 80 (internet-based test);
 - Cambridge EFL (English as a Foreign Language) Examinations, with one of the following certificates:
 - Cambridge Certificate in Advanced English;
 - Cambridge Certificate of Proficiency in English;
3. The educational programme may impose additional requirements for Dutch or English language proficiency. These additional requirements are specified in the programme-specific Appendix.

Article 2.3 Entrance Examination ('Colloquium Doctum')

If the applicant fails to meet the requirements set in Articles 2.1 and 2.2, the institution may provide an exemption based on an entrance examination in accordance with Section 7.29 of the Higher Education and Research Act. Further details are available on the University of Twente website²

SECTION 3 – CONTENTS AND STRUCTURE OF THE PROGRAMME

Article 3.1 Aim of the Programme

The aims and attainment targets (Section 7.13 subsection 2c Higher Education and Research Act) are described in the programme-specific Appendix.

Article 3.2 Structure of the Programme

1. The programme consists of 180 credits:
 - a. In addition to a core programme of up to 120 credits, students also take minors totalling at least 30 credits and they complete a graduation phase of a total of 15 credits. The programmes Advanced Technology and Technical Medicine are an exception;
 - b. The educational programme consists of modules;
 - c. A module is a study unit of 15 credits, in which the student develops his programme-specific knowledge, skills and attitudes in a coherent manner;
 - d. A module is a study unit of 15 credits, in which the student develops his programme-specific knowledge, skills and attitudes in a coherent manner;
 - e. The programme offering the minor module may set prerequisites for admission to the minor module;

- f. The student's own programme may set conditions for the number of credits to be earned for admission to the minor module. These conditions are specified in the relevant programme-specific Appendix;
 - g. The student is limited in his choice of minor by the provisions of (e) and (f). The range of programmes can be consulted on the website <https://www.utwente.nl/onderwijs/keuzeruimte/minor/>
 - h. Generally speaking, 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 is to complete the core of the Bachelor's programme prior to embarking on the graduation phase;
 - j. The Examination Board² is authorized to deviate from Article 3.2.1 (f), (g) and (h) if strict adherence to those provisions would result in an unacceptable delay in study progress. In consultation with the Study Advisor, the student may submit a proposal to the Examination Board;
2. The programme-specific Appendix to these Teaching and Examination Regulations describes the degree programme in accordance with Section 7.13, subsection 2 (a to e, g, i, l, s, t, v) of the Higher Education and Research Act.

Article 3.3 Programme's Language of Tuition

1. The educational programme's language of tuition is specified in the programme-specific Appendix;
2. If programme components deviate from the language of tuition, then this is to take place in accordance with the UT Code of Conduct for Languages of the UT and Section 7.2 of the Higher Education and Research Act;
3. Bachelor's programmes taught in Dutch will generally use study materials in English or Dutch, and study units or components of study units may be taught and assessed in English, if:
 - a. a lecturer or tutor in the unit of study does not speak Dutch, or;
 - b. students from the relevant Bachelor's programme take the module together with student's from an English-taught Bachelor's programme, or;
 - c. educational programme the degree programme considers it necessary in order to fulfil one of its aims in the area of English language communication skills.

Article 3.4 Exemption

1. The Examination Board may grant an exemption to a student at his request for one or more full study units. To this end, the student must demonstrate completion of a component of a higher education programme that is equivalent in content, scope and level, or that he has acquired expertise and skills through work or professional experience with regard to the relevant study unit;
2. The Examination Board has the authority to make exceptions to the provision in paragraph 1 and to grant an exemption to a student for components of a study unit;
3. A student may also be exempted from practical exercises if he can demonstrate that a required practical exercise will likely give rise to a personal moral dilemma. In such cases the Examination

² It is important that the student is still able to achieve the attainment targets of the programme. In light of this consideration, this authorization has been formally conferred to the Examination Board, as they are the ones to ensure that only students who achieve the attainment targets are able to graduate. It is conceivable that a programme / faculty may opt to confer the authorization referred to in (j) to the Programme Board.

Board will decide whether the component can be completed in another manner to be determined by the Examination Board.

Article 3.5 Elective Programme

The Examination Board of the programme decides on requests for permission to take an elective programme as referred to in Section 7.3 (d) of the Higher Education and Research Act. The Examination Board assesses whether an elective 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.

SECTION 4 – TEACHING AND ASSESSMENT

Article 4.1 General

1. The institutional administration is responsible for the practical organization of interim and other examinations;
2. Each study unit concludes with an interim examination;
3. The interim exam may consist of a number of tests³;
4. A test can be split into components and administered during multiple sessions. The results of these components are not included in Osiris but must be announced to the students through the Gradebook in Canvas;
 - a. The student has the right to inspect recent model test questions or model tests, or old tests and their keys, along with the norm for assessment;
 - b. The time allotted to administering a test may not exceed three hours⁴⁵;
 - c. If the examiner wishes to use a form of assessment that takes more than three hours, he may ask the Examination Board for approval to deviate from the preceding paragraph. The request must be submitted at least four weeks before the start of the course period in order to comply with the provisions of paragraph 11 about timely notification of various aspects of teaching and testing;
5. Test results are expressed as a whole number from 1 to 10 or a number from 1 to 10 with a single decimal, or as 'pass' / 'fail';
6. Interim exam results are rounded to the nearest whole number;
7. Interim exam results are expressed as a whole number from 1 to 10. Interim exam results of 6 or higher are a pass;
8. The module examiner consults with any other examiners involved in the module prior to determining the interim exam results for the module (Article 4.2). This consultation should preferably take place during a module assessment meeting;
9. The 15 credits will be awarded only once a module has been passed. No credits are awarded for components of a module;
10. If more than one authorized result has been established for one and the same unit of study, the highest result will apply. This also applies to tests and components of tests;

³ A test may take the following forms: a written test, an assignment, an oral test, the assessment of practical exercises as referred to in Article 1.2 or a combination of the above.

⁴ If a test consists of several components, administered during multiple sessions, the maximum time applies to each component. Article 7.1 paragraph 10 includes a provision on the maximum extra time allotted to students with dyslexia.

⁵ An interim exam result of 5.49 is rounded down to 5 (fail). An interim exam result of 5.50 is rounded up to 6 (pass).

11. The Programme Board publishes the following details in Osiris: scope, course objectives and content of the study unit, language of tuition, language of assessment, prerequisites, required and recommended study materials, design of teaching methods and assessment.

Article 4.2 Modules

1. Each module has a module coordinator and a module examiner. This is preferably the same person;
2. The Examination Board appoints the examiners for the module components and a module examiner for each module.

Article 4.3 Registration for study units and tests

1. Registration in Osiris is required prior to participating in the study unit;
2. Upon registering for the study unit, the student will automatically be registered for the regular assessments associated with the study unit;
3. Information on registration for resits is indicated in the assessment schedule.

Article 4.4 Description of modules and assessment schedule

1. The programme-specific Appendix contains a description of each module
2. The module description must include:
 - a. the learning objectives of the module and the module components;
 - b. the module components;
 - c. the number of credits and weighting ratio of the module components;
 - d. the language of tuition and assessment;
3. After the module coordinator has drawn up the assessment schedule, it will be adopted by the Programme Board. The Examination Board issues its advisory opinion on the assessment schedules;
4. The assessment schedule must be published in Canvas at least two weeks prior to the start of the module;
5. The assessment schedule must include:
 - a. under which conditions the module can be passed;
 - b. how the learning objectives of the module and the module components are assessed;
 - c. the period of validity of the result of the test or tests for a module component;
 - d. when the tests are taken;
 - e. any required minimum mark per test; a minimum mark for a test may not be set higher than 5.5;
 - f. when the resit options take place and which conditions are attached to take part; each module component must offer at least one resit option within the same academic year. An exception may be made for practical exercises⁶;
 - g. any compensation schemes for test results within the module;
 - h. any pass-fail regulation for test results from different modules⁷;
 - i. the marking period for each test; this must not exceed 10 working days with due observance of Article 4.6.8 of this regulation;
6. The Programme Board may modify the assessment schedule during the study unit;

⁶See the definition of terms in Article 1.2. These include projects and practical classes.

⁷The Examination Board has the legal right to determine that a student may pass while not have achieved only passes. This is referred to as the 'pass/fail regulation'.

- a. The assessment schedule may only be changed in consultation with the module coordinator. Students are to be informed immediately of the change;
 - b. If the change involves nothing more than moving tests or test components to a timeslot other than as shown in the timetable, the Programme Board will inform the Examination Board of the decision to make the change at the next examination meeting;
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 4.5 Oral Examinations

1. Oral examinations are to be administered in public, unless the Examination Board decides otherwise due to extraordinary circumstances;
 - a. If the student or the examiner actually wishes a third party to be present when administering the oral examination, then a request to this end must be submitted to the Board of Examiners at least fifteen working days prior to the oral examination. The student and the examiner are notified of the Programme Board's decision no later than 5 working days in advance. The Programme Board must inform the Examination Board of the decision at the next examination meeting. Public graduation symposia, public presentations and group tests are excluded from this provision;
 - b. 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 two working days prior to the oral examination.

Article 4.6 Assessment deadline, interim examination and test date

1. The examiner is to inform the student of the result of an oral examination within one working day;
2. The provisions of paragraph 1 do not apply if 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 the result within one working day following the conclusion of the series of oral examinations;
3. The deadline for determining and disclosing the results of a written test (or other kind of assessment) is to be included in the assessment schedule of the study unit;
4. The examination result of a study unit, determined in accordance with Article 4.1.8, 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. If the student fails an interim exam and the module examiner has determined that the student meets the conditions for participation in the repair option (in accordance with Article 4.4.5 (f), then this decision is to be made known the student within ten working days after the conclusion of the teaching period;
5. This interim exam date is the date on which the test is taken with which the student definitively passes the interim exam;
6. The test date is the date on which a written or oral test is taken;
7. If a test assessment is 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;
8. If a second test is planned shortly after the first, the results of the first test will be published at least five working days prior to the second test to give the student time to prepare;

9. Should the examiner not be able to meet the deadline as stated in Article 4.6, paragraphs 1, 2, 4 and 8 due to exceptional circumstances, then he is to notify the Programme Board and the Examination Board, providing reasons for the delay. The Programme Board is to inform the students involved of the delay immediately, and of the term within which the results will be made known. If the Examination Board is of the opinion that the Examiner has not met his/her obligations, it may appoint another Examiner to ascertain the result of the exam at the request of the Programme Board.

Article 4.7 Period of validity

1. The results of an exam that has been passed remain valid indefinitely. The period of validity of an interim 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. The period of validity of the result of the test or tests for a module component is set out in the programme-specific Appendix and in the assessment schedule of the module.

Article 4.8 Right of inspection and discussion

1. The student is entitled to inspect and discuss his test together with the examiner, and the examiner is to explain the assessment;
2. If the examiner holds a group discussion of the assessment, the student must use that opportunity as his right to discussion as referred to in paragraph 1. If the 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 his test with the examiner, the student may submit a request for individual discussion with the examiner within five working days after the group discussion. The individual discussion must take place no later than three working days prior to the next test opportunity;
3. If there is no collective 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 must take place no later than three working days prior to the next test opportunity;
4. 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 designated substitute;
5. The student has a right to inspect his assessed work for a period of two years following the assessment.

Article 4.9 Retention period of tests

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

Article 4.9 Teaching evaluation

1. The Programme Board is responsible for monitoring the quality of the educational programme;
2. The Programme Board is responsible for evaluating the programme;
3. The programme-specific Appendix details how the tuition in the programme is evaluated.

SECTION 5 - EXAMINATIONS

Article 5.1 Examination Board

1. The Faculty Board appoints an Examination Board for each educational programme or group of programmes;
2. The Faculty Board convenes the Examination Board and appoints the members based on their expertise in the field of the relevant programme or group of programmes;
3. It is the responsibility of the Faculty Board to ensure that the Examination Board is independent and functions as an expert professional body;
4. Examination Boards determine the rules and guidelines for the examiners, interim examinations and examinations without further consultation (Higher Education and Research Act, Section 7.12b). These are set out in a separate document 'Examination Board Rules and Guidelines';
5. The statutory authority of the Examination Board applies to all study units comprising the student's degree programme.

Article 5.2 Examination

1. In accordance with Section 7.10, subsection 2 of the Higher Education and Research Act, the Bachelor's examination is considered to be complete when the student has passed all study unit exams in the Bachelor's programme;
2. The Examination Board will issue a degree certificate as proof that the student has satisfied all the requirements of the Bachelor's exam once the institutional administration has confirmed that the procedural requirements for issuing the degree certificate have been met. The Examination Board will append a supplement to the degree certificate. The date indicated on the degree certificate (i.e. the date of the examination) is the day on which the student completed the final study unit of his degree programme (Section 7.11 of the Higher Education and Research Act);
3. A student may submit a written request to the Examination Board to postpone the examination, and thus to delay the awarding of the degree certificate. The student should indicate the duration of the postponement in his request. The requested postponement may not exceed 12 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 examination subsequent to the postponement;

Article 5.3 Degree

1. Students who have successfully met all requirements for the Bachelor's examination will be awarded a Bachelor of Science (BSc) degree;
2. The degree conferred is stated on the degree certificate. The student's average mark (GPA) is mentioned on the degree supplement. An annex to the degree supplement indicates how the GPA is calculated.

Article 5.3 Degree certificate

1. The Examination Board will award a degree certificate as evidence that the student has met all of the requirements of the Bachelor's examination. The degree certificate 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 degree certificate;
2. The following information is to be mentioned on the certificate (in accordance with Section 7.11 of the Higher Education and Research Act):

- a. the student's name and date of birth;
 - b. the name of the institution and the degree programme as stated in the register as referred to in Section 6.3 of the Higher Education and Research Act;
 - c. the date on which the examination was completed;
 - d. the components⁸ of the Bachelor's examination;
 - e. If the student has successfully completed an honours programme while on the Bachelor's programme, then this fact will be stated on the degree supplement as an extracurricular programme;
 - f. the degree conferred (in accordance with Section 7.10 (a) of the Higher Education and Research Act);
 - g. where appropriate, the specific qualifications associated with the degree (with due consideration for Section 7.6, subsection 1 of the Higher Education and Research Act);
 - h. the date on which the programme was last accredited or the date on which the programme passed the new programme assessment as referred to in Article 5a.11, paragraph 2;
3. An International Diploma Supplement is to be appended to the degree certificate (Section 7.11, subsection 4 of the Higher Education and Research Act). 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 supplement is to include the following minimum information:
- 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 specialization and/or minor, if applicable;
 - d. the study load of the programme;
 - e. the modules, the module components and their assessment;
 - f. interim exams passed by the student that are not part of the final examination;
4. If the Examination Board⁹ has awarded a specific distinction (e.g. cum laude) to the student, then this is to be mentioned on the degree certificate;
5. Students who have successfully completed more than one exam but cannot be awarded a degree certificate as referred to in paragraph 1, will receive, at their own request, a statement prepared by the Examination Board which in any case will state the results of the exams the student has passed (Section 7.11, subsection 5 of the Higher Education and Research Act).

⁸Components' in the Act means the study units of which the Bachelor's examination consists. At the University of Twente these are almost always the modules of which Bachelor's programme consists.

⁹ There has long been discussion about the question if the Programme Board or the Examination Board should award the designation 'with distinction'. Both situations exist and minimum conditions / guidelines have been drawn up either in the Examination Board's rules or in the TER itself. a. Many of the faculties consent with the current text. b. A degree programme / faculty may modify the text if they wish. c. An alternative phrasing might be 'If a specific distinction has been awarded to the student, etc.'.

SECTION 6 – STUDENT GUIDANCE AND BINDING RECOMMENDATION

Article 6.1 Study progress overview

1. If needed, the student can request a certified study progress report from the Student Services desk.

Article 6.2 Student guidance

1. The Faculty Board is responsible for student guidance, including informing students of opportunities for academic endeavour within the programme and via extracurricular avenues;
2. Each student is appointed a Study Adviser;
3. The Study Adviser supervises the student and advises him on study-related matters, as well as personal problems that may be affecting the student's studies;
4. If a student wishes to make use of his right to specific supervision or special facilities, they must contact the Study Adviser. The Study Adviser records the agreements made with the student;
5. The following applies to the entitlement to special facilities:
 - a. demonstrable circumstances beyond the student's control or extenuating personal circumstances;
 - b. if necessary and where possible, dispensation from participation in exams or tests and/or the availability of special facilities for exams and tests. Such dispensation and additional opportunities for tests may only be granted by the Examination Board;
6. An introductory interview will be held with each student before 1 November of the first year of enrolment in the programme;
7. Each student will receive a preliminary student progress evaluation by week 52 at the latest of his first year of enrolment in the programme. This also applies to students in their second year of enrolment in the degree programme whose student progress evaluation has been postponed. This preliminary student progress evaluation is not binding;
8. Each student will receive a second student progress evaluation on the continuation of studies by week 10 at the latest of their first year of enrolment in the programme. This also applies to students in their second year of enrolment in the degree programme whose student progress evaluation has been postponed. This preliminary student progress evaluation is not binding;
9. Students who receive a negative preliminary progress evaluation will be invited for an interview with the Study Advisor to discuss their study methods and review their choice of specialization.

Article 6.3 Binding recommendation

1. Each student receives a written student progress evaluation at the end of the first year of enrolment in the programme about continuing his studies within the programme, notwithstanding Article 6.4. This progress evaluation 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 to Articles 6.4 and 6.5;
2. The institutional administration mandates the Programme Board to issue student progress evaluations, as referred to in paragraph 1;
3. The student progress evaluation includes the results of the module components that remain valid the following academic year:
 - a. Only the credits from modules and module components in the first year of the programme count toward the threshold for the student progress evaluation;

- b. The exemptions for components of the first year awarded to the student count towards determining the number of credits;
 - c. The Programme Board may set down subject-specific requirements which must be met. These requirements are specified in the programme-specific Appendix¹⁰;
4. The student progress evaluation as referred to in paragraph 1 may include a rejection, if the student in the opinion of the Programme Board is not deemed suitable for the degree programme because the student has passed fewer than three modules in which:
 - a. the student has passed in total less than 75% of the study load of the first year, or;
 - b. the student has passed 75% or more of the study load of the first year but does not meet the programme-specific requirements (as referred to in paragraph 3 (c) of this Article). A student progress evaluation that involves expulsion is referred to as a binding student progress evaluation (BSA);
5. When considering a BSA involving expulsion, the Programme Board will take the student's personal circumstances into account at the student's request. The Programme Board will only take personal circumstances into account that have been reported to the Study Advisor as soon as can reasonably be expected following their onset;
 - a. 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 in accordance with the FOBOS Regulations;
 - b. In consultation with the academic adviser, the personal circumstances are to be submitted to the Personal Circumstances Committee (CPO) and accompanied by supporting documentation;
 - c. The CPO will assess the validity and severity of the personal circumstances. The CPO will report its findings to the Programme Board and the relevant Study Adviser;
 - d. The Programme Board will take the CPO's findings into account when assessing the student's request;
6. Before issuing a BSA, the Programme Board must first issue a warning to the student giving him a reasonable term in which to improve the course results, to the Programme Board's satisfaction. In addition, students have the right to a hearing with the Programme Board prior to receiving a BSA (Higher Education and Research Act Section 7.8b, subsection 4);
7. The Programme Board's decision regarding the BSA will make mention of the applicable appeals procedure. Expulsion following a BSA may be appealed within six weeks by lodging an appeal with the Examination Appeals Board;
8. If a student receives a BSA, he/she may not enrol in the same degree programme for a period of three consecutive academic years;

¹⁰ Subject-specific requirements may not state that all module components of a certain type must be completed. 'The student must pass all mathematics module components from the B1 programme' is not permitted, whereas 'The student must pass three of the four mathematics components from the B1 programme' is permitted.

9. If a student re-enrols in the relevant Bachelor's programme after the period referred to in paragraph 8, this enrolment is designated as a first-year enrolment and the relevant provisions of this section apply in full.

Article 6.4 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 with the University of Twente to terminate the enrolment, or;
 - b. de-enrols for the programme at the University of Twente, with the student enrolling in another programme at the University of Twente and thus switching to another programme at the University of Twente, or;
 - c. continues his studies at another institute of higher education with a proof of tuition fees paid;
2. If in his first year of enrolment for the degree programme a student submits a request through Studielink by 31 January to terminate enrolment and he is de-enrolled before or on 1 February and he does not re-enrol for the same programme in that same academic year, a student progress evaluation as referred to in paragraph 1 of Article 6.3 will not be issued. If this student does re-enrol in the relevant Bachelor's programme, this enrolment is designated as his first-year enrolment;
3. Students who are de-enrolled after 1 February for the degree programme at the University of Twente, will receive a student progress evaluation as referred to in Article 6.3 paragraph 1 from the programme they discontinued.

Article 6.5 Postponement of student progress evaluation

1. The student progress evaluation as referred to in Article 6.3 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 set in Article 6.3, paragraph 3, or;
 - b. if personal circumstances preclude an assessment of a student's academic capacities at the end of the first year of enrolment in the degree programme, or;
 - c. the student switches from one degree programme at the University of Twente to another on or after 1 October of the first year, whereby the student de-enrols for one programme (discontinuation in the sense of Article 6.4, paragraph 1 under b) and enrolls in another programme;
2. If this student, whose progress evaluation as referred to in Article 6.3 (1) has been postponed based on that article, re-enrols in a subsequent academic year in the relevant programme, then a student progress evaluation will be issued at the end of that subsequent academic year. The same norm as set out in Article 6.3 (3) applies to this progress evaluation;
 - a. The student whose progress evaluation as referred to in Article 6.3 (1) has been postponed based on Article 6.5 (1)(a), will be notified in writing within 6 weeks of the date of enrolment before which date the programme will issue the final progress evaluation;
 - b. The student whose progress evaluation as referred to in Article 6.3 (1) has been postponed based on Article 6.5 (1)(b), will be notified in writing within 6 weeks of the

- date of enrolment before which date the programme will issue the final progress evaluation;
- c. For students whose progress evaluation as referred to in Article 6.3 (1) has been postponed based on Article 6.5 (1)(c), the end of the second year of enrolment in the relevant programme applies as the new deadline for the final student progress evaluation. The student progress evaluation is issued by the degree programme in which the student is newly enrolled;
3. If a student transfers to another UT degree programme prior to 1 October, then the norm will not be adjusted as referred to in Article 6.3, paragraph 3 and the evaluation will not be postponed based on transfer.

SECTION 7 – STUDYING WITH A FUNCTIONAL IMPAIRMENT

Article 7.1 Studying with a functional impairment

1. A functional impairment is a physical, sensory or other functional disorder that might limit the student's academic progress.
2. The Study Advisor and the student will discuss the most effective facilities for the student as referred to in Article 2 of the Equal Treatment of Disabled and Chronically Ill People Act (WGB h/cz).
3. Facilities are to be aimed at removing specific barriers in the teaching programme or when it comes to taking exams. Where necessary, these facilities may be related to access to infrastructure (buildings, classrooms and furnishings) and study materials, adjustments to the form of assessment, alternative learning pathways or a customized study plan. The facilities are to ensure the student's chances of achieving the programme intended learning outcomes.
4. Based on the interview referred to in paragraph 2, the student is to submit a request for facilities to the Faculty Board, preferably three months before the student is to participate in classes, exams and practical exercises for which the facilities are required.
5. The request is to be submitted along with supporting documentation that is reasonably necessary for assessing the request (such as a letter from a doctor or psychologist registered in the BIG register, or in the case of dyslexia from a healthcare psychologist or special education needs expert, also registered in the BIG register).
6. The Faculty Board will decide on the admissibility of the request as referred to in paragraph 4 and will inform the student and the Study Advisor of the decision within 20 working days after receipt of the request, or sooner as the urgency of the request dictates.
7. The Study Adviser will ensure that the relevant parties are informed in good time about the facilities granted to a student with a functional impairment.
8. Should the Faculty Board reject the request in full or in part, the Faculty Board is to inform the student of the justification for the rejection and the possibilities for lodging an objection and an appeal. A written objection must be submitted in writing within six weeks after the decision has been communicated to the student. The objection is to be submitted to the objections, appeals and complaints office via the Student Services desk.
9. Should extra facilities be granted, the period of validity will also be indicated. The applicant and the Study Advisor will evaluate the facilities before the end of this period. During this evaluation, parties will discuss the effectiveness of the facilities provided and whether they should be continued.

10. If a student is dyslexic, he/she will be granted a maximum of 15 extra minutes for each hour that a test or exam is officially scheduled.

SECTION 8 – AMENDMENTS, TRANSITIONAL ARRANGEMENTS, APPEALS AND OBJECTIONS

Article A8.1 Conflicts with the regulations

If other additional regulations and/or provisions pertaining to education and/or examinations conflict with these Teaching and Examination Regulations, the provisions in these Teaching and Examination Regulations will prevail.

Article A8.2 Administrative errors

If, following the publication of an exam result, a marks sheet, or a student's progress report, an alleged 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 A8.3 Amendments to the regulations

1. Substantive amendments to these Teaching and Examination Regulations are enacted by the Faculty Board in a separate decree;
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 student 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 A8.4 Transitional arrangements

1. In the case of amendments to the Teaching and Examination Regulations, the Faculty Board may decide to put a transitional arrangement in place.
2. Any such transitional arrangement will be published on the degree programme's website.
3. General principles for the transitional arrangement in the case of changes to the curriculum:
 - a. Changes to the curriculum are to be announced prior to the academic year in which the changes take effect;
 - b. No guarantee can be made that all programme study units that were part of the curriculum when a student enrolled in a programme will continue to be part of the curriculum. The final Bachelor's exam 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 that are equivalent to study units or components of study units from the current curriculum as indicated in the programme-specific Appendix;
 - b. an indication that if a teaching unit that does not involve a practical is dropped from a programme, then students are to have at least two opportunities in the following year to take a written or oral exam or to undergo another form of assessment;
 - c. an indication that if a study unit with practical exercises is dropped from the programme and there is no opportunity in the subsequent academic year to complete the practical exercise, 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 with regard to the provisions of paragraphs 4a and 4c;
6. In exceptional cases and to the student's benefit, the Examination Board may deviate from the prescribed number of opportunities to sit exams related to study units that have been dropped from the curriculum.

Article 8.5 Assessment of the Teaching and Examination Regulations

1. The Faculty Board is responsible for the regular assessment of the Teaching and Examination Regulations and is to take into account the time involved for the student for the purposes of monitoring and adjusting the study load, if necessary;
2. Based on Section 9.18 of the Higher Education and Research Act, the Programme Committee has a partial right of approval of and a partial right to be consulted on the Teaching and Examination Regulations;
3. The Programme Committee is responsible for the annual assessment of the manner in which the Teaching and Examination Regulations are implemented.

Article 8.6 Appeal and objections

An objection against a decision by the Examination Board or by an examiner or an appeal against a decision by the Faculty Board based on these Regulations must be submitted in writing within six weeks after the decision has been communicated to the student. The objection is to be submitted to the objections, appeals and complaints office via the Student Services desk.

Article 8.7 Hardship clause

The Examination Board or the Programme Board may allow derogation from the provisions of these Regulations in the event of demonstrably compelling unreasonableness or unfairness. This depends on which body (Examination Board or Programme Board) is authorized or has the duty according to this regulation to take a decision on or make an exception to a provision in this regulation.

Article 8.8 Notification

The Teaching and Examination Regulations and the Examination Board's rules and guidelines are to be published on the degree programme's website.

Article 8.9 Entry into force

These regulations enter into force on 1 September 2019 and replace the regulations dated 1 September 2018.

Adopted by the faculty board of the Faculty of Electrical Engineering, Mathematics & Computer Science, having regard to Section 9.5, 9.15, first subsection under a, Section 7.13, first and second subsection, Sections 9.38, under b, and 9.18, first subsection under a, and Section 7.59 of the Higher Education and Research Act, in due consideration of the recommendations of the Programme Committee, and following approval or advice from the Faculty Council.

Enschede, August 31, 2019

SECTION B: PROGRAMME-SPECIFIC SECTION

BACHELOR TECHNICAL COMPUTER SCIENCE (B-CS)

About this Section

The Teaching and Examination Regulations (TER) are subdivided into two sections (Section A and Section B), which together form the TER. Section A, which can be seen as the university section, includes provisions that may apply for all EEMCS Bachelor's degree programmes. Section B contains the provisions that are specific to the particular degree programme, in this case the Bachelor's programme in Technical Computer Science.

SECTION B – PROGRAMME-SPECIFIC SECTION TECHNICAL COMPUTER SCIENCE

SECTION 1 - CONTENTS AND STRUCTURE OF THE PROGRAMME

Article 1.1 General objectives of the programme (Article 7.13, paragraph 2c of the Higher Education and Research Act)

The objective of the Bachelor's degree programme in Technical Computer Science is to train students at the Bachelor's level, instilling in them a solid foundation in mathematics and a thorough basic knowledge and understanding of the field of Computer Science. The programme is comprehensive and focuses not only on software and information systems, but also on computer systems and communication networks. The programme addresses skills and the societal context, and offers students the opportunity to explore another field by taking a minor. Students complete the programme by conducting an individual research project and a group design project.

Most graduates will continue their education by enrolling in a Master's programme, although the expertise and skills they acquire during the Bachelor's programme will allow them to find gainful employment in the field.

Article 1.2 The Programme Intended Learning Outcomes (Article 7.13, paragraph 2c of the Act)
Domain-specific content

In the domain of Technical Computer Science, the graduate is capable of:

- C1. *In the software sub-domain*: understanding, applying, analyzing and evaluating the principles of software development and software engineering; understanding and applying concepts of programming languages and formal methods.
- C2. *In computer and network systems*: understanding, applying and analyzing theories of architecture, organization and the management of computer systems, as well as principles of communication and network systems.
- C3. *In fundamentals of computer science*: applying algorithms, discrete structures and principles of parallel and distributed computing, and analyzing their complexity.
- C4. *In human media interaction*: Knowing and understanding how to design intelligent systems using principles of human-computer interaction and computational science.
- C5. *In information management and security*: Understanding theories, methods and techniques for the design of databases, as well as of relevant implementation and maintenance aspects; understanding fundamentals of security and applying them in networks; applying cryptography theories.
- C6. *In mathematics*: Applying discrete mathematics, calculus, linear algebra, probability and statistics; analyzing problems and solutions conceptually, using these mathematical theories.

Design

Regarding the general activity of design, the graduate is capable of:

- D1. Specifying a problem and devising a solution based on a general description of that problem, by selecting and applying appropriate methods, models and techniques.
- D2. Selecting and applying appropriate, domain-specific knowledge, methods, models and techniques to systems design in an integrated fashion.
- D3. Evaluating the properties of solutions/systems and making a substantiated choice between different solutions based on that evaluation.

Research

Regarding the general activity of research, the graduate is capable of:

- R1. Critically analysing domain-specific problems.
- R2. Systematically setting up and implementing a small research project.
- R3. Contributing to the further development of the domain by working in a sub-field

Organizational ability

Regarding the general activity of (self-)organization, the graduate is capable of:

- O1. Independently acquiring and incorporating new knowledge and skills as required.
- O2. Analyzing, reflecting on and discussing ethical, social, cultural and societal aspects of problems, solutions and developments in the domain.
- O3. Understanding team dynamics and working in a team and with a variety of stakeholders such as the client and end-users.
- O4. Communicating effectively with colleagues and non-specialists, both orally and in writing.
- O5. Organizing his/her working processes and reflecting on personal effectiveness contributions and actions.
- O6. Taking a position on an issue and of substantiating this position with regard to a design or scientific argument.
- O7. Appreciating, using input from and working with experts from multiple disciplines.
- O8. Understanding, appreciating and working with people with different cultural backgrounds.
- O9. The graduate is capable of shaping his/her learning process, his/her competencies and develop his/her professional identity, by deliberately choosing and completing parts of the programme that match personal capacities, skills, and motives.

Article 1.3 Content of the programme and related examinations (Article 7.13, paragraph 2a of the Act)

The table below shows the units of study comprising the Twente Education Model (TOM) curriculum. Annex 1 contains a curriculum that has been adjusted for the combined final degree audit for Technical Computer Science and Applied Mathematics. The Board of Examiners of the relevant programme is to publish details regarding the content of a unit of study in the course catalogue at least six weeks before the start of the teaching period (semester or quarter) in which the unit of study is offered.

Article 1.3.1 The TOM curriculum

The table below shows the subjects in the order in which they are offered, the student's preferred prior knowledge and any additional prerequisites. The test schedules of the modules will be published on the module's Canvas page at least two weeks prior to the module commencement, and are part of these regulations. For reference, the test schedules of the previous year are published on the Programme Canvas page. Learning goals of the modules will be published in the course catalogue and are part of these regulations.

Table 1. Curriculum Technical Computer Science

Course code	Course name	Q	Previous Knowledge
B1 phase (Year 1)			
201700139	Pearls of Computer Science	1A	
201700117	Software Systems	1B	
201600146	Network Systems	2A	
201700279	Data & Information	2B	
B2 phase (Year 2)			
201400210	Computer Systems	1A	
201800421	Intelligent Interaction Design	1B	
201800141	Discrete Structures & Effi. Algorithms	2A	
xxxxxxxx	Minor / Elective module	2B	Requirement for participation in minor module: the B1 phase must be completed upon registration in Osiris
B3 phase (Year 3)			
xxxxxxxx	Minor / Elective module	1A	Requirement for participation in minor module: the B1 phase must be complete upon registration in Osiris
xxxxxxxx	Minor / Elective module	1B	Requirement for participation in minor module: the B1 phase must be complete upon registration in Osiris
201500121	Design Project	1A or 2A	Required: 120 credits consisting of mandatory modules + one elective module upon registration in Osiris
201500120	Research Project	1B or 2B	Required: 120 credits consisting of mandatory modules + one elective module upon registration in Osiris

Article 1.3.2 Elective section

1. The elective section consists of an elective module and two minor modules;
2. One of the elective modules listed in Table 2 must be chosen;
3. Approved minors are listed on the minors site: www.utwente.nl/minor;
4. A maximum of 15 students can do an internship as a minor as part of a pilot in the academic year 2019-2020. All additional rules concerning this pilot are to be found on the programme's Canvas page.

5. In addition to (2), a maximum of one additional elective module listed in Table 2 may be taken as a minor;
6. For a minor outside the listed possibilities of the University of Twente, a so-called individual minor, approval of the Examination Board is needed prior to beginning of the minor. Such an individual minor should satisfy the following criteria:
 - a. The educational component of the minor must be at an academic level;
 - b. At least 15 of the 30 credits must involve a paradigm shift in the following sense:
 - i. The minor may be taken within the Netherlands, in which case its educational content may not fall within the field of computer science; or
 - ii. The minor is taken at an institution of higher education abroad, in which case the desired paradigm shift is taken to be achieved by the changed cultural embedding. In this case the content restriction does not apply, and up to five credits may be devoted to courses on the language and culture of the host country.
 - c. The educational component of the minor may not overlap with the contents of the programme;

Table 2. Elective modules / can also be taken as a minor module

Course code	Course name	Q	Prerequisites
201500057	Smart Spaces	1A	
201700273	Cyber-Physical Systems	1B	
201700271	Web Science	1B	
201400537	Programming Paradigms	2B	

See <https://www.utwente.nl/en/eemcs/examination-board/> for how to submit a request. Once approval has been granted, the Bureau of Educational Affairs (BOZ) is responsible for the administrative procedure involved in enrolling the student in the relevant minor.

Article 1.3.3 Sequence requirements (Article 7.13, paragraph 2s of the Act)

1. A student may enrol in the minor through the Minor Bureau once he/she has completed the B1-phase upon registration in Osiris;
2. A student may only enrol in the final semester modules Design Project (201500121) and Research Project (201500120) once he/she has earned at least 120 credits, excluding minors;

Article 1.4 Programme format (Article 7.13, paragraph 2i of the Act)

The programme is only offered on a full-time basis.

SECTION 2 – LANGUAGE OF TUITION (Article 3.3, paragraph 1 Section A)

The programme is taught in English.

SECTION 3 - TEACHING AND ASSESSMENT

Article 3.1 Assessment and examination formats (Article 7.13, paragraph 2l of the Act)

The test schedules of the modules will be published on the module's Canvas page at least two weeks prior to module commencement, and are part of these regulations. For reference, the test schedules of the previous year are published on the Programme Canvas page.

Article 3.2 Registration of results

In addition to Article 4.1, Section A:

1. Exemptions for examinations are indicated with the code 'VR'.
2. Exemptions are assigned a numerical value of 6.
3. The examination results of sufficient (V) and insufficient (NVD) have no numerical values.

Article 3.3 Participation in tests (Art. 4.3(3), Section A)

1. If attendance in designated educational activities is a prerequisite for participation in a test, then the module coordinator must decide on granting exemptions to students resitting the test or defining an alternative method to satisfy the attendance requirement.
2. If a module has been changed and the non-divisible component is no longer clearly identifiable, then the module coordinator must decide which tests must be passed in order to complete the former non-divisible component.
3. Participation in tests that are offered, either scheduled or on-demand, after the module has finished is only allowed if a substantiated request by the student to the Examination Board is granted by the Examination Board.

Article 3.4 Third attempt

If a student requires more than two consecutive academic years to pass a module, then the student must agree on a study plan together with the Study Advisor at least two weeks prior to the start of the relevant module. The study plan must include agreements on time keeping, active participation in tutorials and other aspects.

Article 3.5 Examination transparency

In addition to Article 4.4 Section A, the programme is to ensure that information is made available for each examination regarding its level, structure and marking norms, e.g. by providing a sample examination, an examination from a previous year or a collection of sample examination questions.

Article 3.6 Period of validity (Art. 4.7(2) Section A)

The test schedules, published on the Canvas page of the module as described in section 3.1, indicate which grades remain valid indefinitely.

Article 3.7 Confidentiality

In addition to Article 4.9(2) Section A:

1. Reports of final assignments are public documents except in the following cases.
2. The Programme Board may deem a report to be confidential for a specific period based on a detailed request:
 - a. The first 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 final 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 observe confidentiality with regard to the report.
3. In the case of a confidential report as referred to in point 2, the public presentation of the report may be amended to ensure that no confidential information is made public.

Article 3.8 Teaching evaluations (Art. 4.10(3) Section A)

1. The online Student Experience Questionnaire (SEQ) is used for evaluation purposes at the conclusion of each module;
2. Additionally, the module coordinator may initiate supplementary evaluations, such as additional surveys and panel discussions during the module or at its conclusion;
3. If the SEQ results and/or student complaints give reason for concern, then the programme director is to discuss the matter with the module coordinator either during the module or at its conclusion;
4. They are to use this discussion to develop a plan for improving the remainder of the module or for the subsequent module, including a strategy for evaluating the improvements.

SECTION 4 - FINAL DEGREE AUDIT

Article 4.1 Pass/Fail Regulation

Students who meet the following requirements will pass the Bachelor's final degree audit for the TCS programme:

- a. The student has received an assessment for all units of study of the Bachelor's final degree audit;
- b. The student's final results are 6 or higher for all units of study;

Article 4.2 Cum Laude

1. A student may pass the Bachelor's final degree audit with distinction (cum laude) upon meeting the following requirements:
 - a. The student passes the Bachelor's final degree audit within four years of initial enrolment (performance requirement);
 - b. The student's average mark is 8.0 or higher (non-numeric assessments and exemptions not included). This is a weighted average based on the relative number of credits per unit of study. The results for minor modules are taken into account. Results for study units outside the examination programme, are not taken into account.
 - c. No more than one unit of study may have a final result of 6.
 - d. The mark for the module part Research Project of the module Research Project (201500120) is 8.0 or higher.
2. 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 recognized and provided for by the institution. It should be noted that the distinction of cum laude is never awarded automatically, but only following individual assessment of the student's academic achievements.

SECTION 5 - BINDING RECOMMENDATION (BSA)

Article 5.1 Binding Recommendation (BSA)

A student will receive a positive BSA upon satisfying one of the following conditions (Article 6.3, Guideline TER):

1. Successful completion of three complete modules;
2. Successful completion of 45 credits of module components, including at least three mathematics modules (Introduction to Mathematics & Calculus 1A, Calculus 1B, Linear Algebra, Probability Theory);
3. In addition to the stipulations in (2), a module component has been successfully completed if it is part of a fully completed module, or if the test results of the completed module component are a 5.5 or higher in the case of a module that has not yet been completed;

SECTION 6 - ADMISSION

Article 6.1 Admission Requirements (Article 7.24 through 7.29 of the Act)

Access to the Technical Computer Science programme can be obtained by fulfilling the following requirements:

1. With a diploma of the concluding examination of University Preparatory Education (VWO) or equivalent. The Technical Computer Science programme considers the following certificates and admission test to be equivalent;
 - a. With a certificate of the propaedeutic examination of an Academic Programme (WO) in an engineering field;
 - b. With a certificate of the propaedeutic examination of a Higher Vocational Programme (HBO) in an engineering field with a CGPA of 7.5 on a 10-point scale or higher;
 - c. With a certificate of the concluding examination of an Academic Programme in an engineering field;
 - d. With a certificate of the concluding examination of a Higher Vocational Programme in an engineering field;
 - e. With a certificate that has been approved by the Minister and that is at least equal to the diploma of the concluding examination of University Preparatory Education - the diploma may have been issued in the Netherlands or abroad;
 - f. With a certificate that has been approved by the Executive Board and that is at least equal to the diploma of the concluding examination of University Preparatory according to the judgement of the Executive Board - the diploma may have been issued in the Netherlands or abroad;
2. Mathematics B at University Preparatory Education level or equivalent;
3. English level:
 - a. a secondary school diploma including English as an examination subject from a country that has ratified the Lisbon Treaty; or
 - b. CEFR, B2/C1 level; or
 - c. IELTS score of 6.0 or higher; or
 - d. TOEFL score of 80 or higher.

Article 6.2 Admission to a Master's programme

A student with a Bachelor's degree in Technical Computer Science will gain automatic admission to the following Master's programmes at the University of Twente:

- Computer Science
- Business Information Technology*
- Embedded Systems (4TU)*
- Interaction Technology
- Internet Science & Technology

* Additional requirements apply for admission to this Master's programme for graduates of the University of Twente's Technical Computer Science Bachelor's programme.

SECTION 7 - STUDY MATERIALS

Students who started on the programme in September 2013 or later must obtain a 'budget notebook' from the Notebook Service Centre (or acquire a similar or better device).

SECTION 8 - DOUBLE DEGREE TCS-AM

All additional rules concerning the double degree TCS-AM are stipulated in Annex 1.

ANNEX 1: DOUBLE DEGREE TECHNICAL COMPUTER SCIENCE – APPLIED MATHEMATICS

This annex contains the following paragraphs:

1. Study programme TCS-AM
2. Elective section
3. Sequence requirements
4. Teaching evaluation
5. Pass/Fail Regulations
6. Cum Laude
7. Binding Recommendation

1. Study programme TCS – AM

All courses of the double programme can be found in Table 1.

Table 1. Study Programme TCS - AM

Course-code	Course name	Q	EC	Division	Prerequisites
B1-phase (Year 1)					
201300312	Linear Structures I	1A	6	AM	
201700139	Intro. to mathematics + Calc. 1A	1A	4	AM/TCS	
201700139	Pearls of Computer Science	1A	11	TCS	
201500112	Programming Theory & Project	1B	8	TCS	
201500365	Calculus 1B	1B	3	AM/TCS	
201300229	Analysis	1B	3	AM	
201400424	Prooflab	1B	2	AM	
201300230	Linear Structures II	1B	3	AM	201300312
201400514	Network Systems	2A	12	TCS	
201400606	Vectorcalculus EE + AT	2A	3	AM	
201400360	Presentation skills	2A	3	AM	
201400479	Signals & Transforms	2B	5	AM	
201400489	Probability Theory AM	2B	5	AM/TCS	
201600174	Data & Information	2B	12	TCS	201500112

B2-phase (Year 2)					
201800316	(Mathematical) Statistics	1A	6	AM/TCS	201400489
201800144	Project statistics	1A	2	AM	
201900087	Computer Systems	1A	12	TCS	
201400429	Systems Theory	1B	4	AM	
201400428	Differential Equations	1B	4	AM	201500365
201800421	Intelligent Interaction Design	1B	12	TCS	
201600061	Introduction Mathematical Modelling	2A	1	AM	
201800141	Discrete Structures & Efficient Algorithms	2A	15	AM/TCS	201400210
201400434	Modelling and Analysis of Stochastic Processes	2B	15	AM	
201600062	Project Signals & Uncertainty	2B	5	AM	
B3-phase (Year 3)					
201400358	Analysis II	1A	5	AM	
201400365	Discrete math	1A	3	TCS	
201500566	Reflection I	1A	5	AM	
	Minor	1B	15	AM/TCS	All first year components
201500121	Design Project	2A	15	TCS	All components of 8 quartiles, all first year components included
	Elective AM	2A	5	AM	
201700274	Bachelor assignment double degree	2B	15	AM/TCS	
201500567	Reflection II	2B	2	AM	
201500405	Complex function theory	2B	3	AM	
	Grand Total		224		

2. Elective section

1. The elective section consists of one elective course in the fourth quartile of the third year, and one minor module.
2. For the elective course one out of these four must be chosen:
 - Graph Theory
 - Introduction to PDE
 - Random Signals and Filtering
 - Mathematical Optimization
3. Approved minors are listed on the minors site: www.utwente.nl/minor;
4. For an individual minor approval of the AM examination board is needed, before the minor starts;

3. Sequence requirements

1. A student may enrol in the minor through the Minor Bureau once he/she has completed all first year components upon registration in Osiris;
2. A student may only enrol in the bachelor assignment once he/she has passed at least 8 quartiles of the complete programme. These 8 quartiles include all first year components

4. Teaching evaluation

1. All components of the programme are parts of 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.

5. Pass/Fail Regulations

1. Students who meet the following requirements will pass the Bachelor's final degree audit for the TCS – and the AM programme:
 - a. The student has received an assessment for all units of study of the double degree programme;
 - b. The student's final results are 6 or higher for all units of study.In all other cases not specified under (1), the student will not pass the final degree audit for TCS and AM and will not receive the Bachelor's degrees.

6. Cum Laude

1. A student may pass the Bachelor's final degree audit for TCS and AM with distinction (cum laude) upon meeting the following requirements:
 - a. The student passes the Bachelor's final degree audit for TCS and AM within four years of initial enrolment (performance requirement);
 - b. The student's weighted average is 8.0 or higher (non-numeric assessments and exemptions not included). The average is weighted based upon the amount of credits.
 - c. The mark for the bachelor assignment is 8.0 or higher.
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 recognized and provided for by the institution. It should be noted that the distinction of cum laude is never awarded automatically, but only following individual assessment of the student's academic achievements.

7. Binding Recommendation (BR/BSA)

1. Students pursuing a double degree in Technical Computer Science and Applied Mathematics are subject to an additional BR provision: the BR may involve exclusion from the Applied Mathematics programme if the student fails to earn 15 or more EC from the AM-courses or AM/TCS-courses associated with the double degree programme. See Table 1 for the specific courses.
2. Students pursuing a double degree in Technical Computer Science and Applied Mathematics are subject to an additional BR provision: the BR may involve exclusion from the Technical Computer Science programme if the student fails to earn 15 or more EC from the TCS-courses or AM/TCS courses associated with the double degree programme. See Table 1 for the specific courses.