EDUCATION AND EXAMINATION REGULATIONS

MASTER OF SCIENCE BUSINESS INFORMATION TECHNOLOGY

A. FACULTY SECTION
B. PROGRAMME-SPECIFIC SECTION

2020-2021 academic year

Introduction to the Education and Examination Regulations for Master'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 education 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 faculty section, includes provisions that may apply to several Master's degree programmes. Section B contains the provisions that are specific to the particular Master's degree programme.

The EER is part of the UT Student Charter, which governs the rights of students and the way we treat each other at the UT. It gives an overview of the rights and obligations of our students and of the academic provisions. The charter consists of two parts: 1) the institutional section which applies to all students, irrespective of the programme and 2) the programme section, which is different for each programme and can be found in the Education and Examination Regulations (EER)..

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SECTION A: FACULTY SECTION

A1. General provisions

Article A1.1 Applicability of the Regulations

1. These Regulations apply to education and examinations for the following Master's degree programmes: Applied Mathematics, Business Information Technology, Computer Science, Electrical Engineering, Embedded Systems, Interaction Technology, Internet Science and Technology, Systems & Control (hereinafter referred to as: the Master's programmes) provided by the Faculty of Electrical Engineering, Mathematics and Computer Science (hereinafter referred to as: the faculty or EEMCS) of the University of Twente.
2. These Regulations consist of a faculty Section (Section A) and a programme-specific Section (Section B). Section A contains general provisions that apply to education and examinations for all the Master's programmes at EEMCS. Section B contains programme-specific provisions. Together, Sections A and B form the Education and Examination Regulations for the relevant programme.
3. The Regulations also apply *mutatis mutandis* to the joint Master's degree programmes and study units provided by the faculty, pursuant to Section 7.3c of the WHW.
4. These Regulations apply to anyone enrolled in the Master's programmes, irrespective of the academic year in which the student first enrolled in the programme.
5. Section B of these Education and Examination Regulations may include additional general provisions for the relevant programme.
6. For the student who follows a study unit from another programme, the rules for testing apply that are laid down in the assessment plan of the study unit concerned, in the Education and Examination Regulations and in the Rules and Guidelines of the Examination Board of the programme that offers the study unit concerned. Special facilities according to article A7 can only be granted by the programme for which the student is enrolled.
7. The general provisions and the programme-specific provisions to the Education and Examination Regulations have been authorized by the Faculty Board.
8. The Examination Board sets down rules with regard to the execution of its tasks and powers in accordance with Section 7.12b of the WHW. These regulations are specified in the Rules and Guidelines of the Examination Board.
9. The institutional part of the Students' Charter includes a definition of what the UT considers as fraud. The rules and Guidelines of the Examination Board of the Master's programme concerned has additional regulations about fraud, for instance about what action the Examination Board is entitled to take when they have observed a case of fraud.
10. Requests for exemptions to provisions laid down in the education and examination regulations should be submitted to the examination board or the programme board, The guiding principle here is which body has the authority to make a decision on - or to make an exception to - a provision from these regulations.
11. References in these regulations to 'the student', 'the lecturer', 'he', 'him' or 'his' should also be read as 'the female student', 'the female lecturer', 'she', or 'her'.

Article A1.2 Definitions

The following definitions are used in these Regulations:

a. **Academic year:** the period beginning on 1 September and ending on 31 August of the following calendar year;

b. **Admissions Board:** the committee that assesses, on behalf of the Faculty Board, whether a candidate meets the requirements for admission to the Master's programme of his/her choice. If no Admissions Board has been appointed for the programme, the Programme Board will function as the Admissions Board;

c. **Bridging programme or pre-Master's programme**: a programme that can be offered to students who cannot yet be admitted to the Master's programme due to insufficient knowledge, understanding or skills, in accordance with Article 7.30 of the WHW;

d. **Course catalogue:** the guide for the Master's programme concerned that provides further details of courses and other information specific to the programme. The course catalogue is available digitally at www.utwente.nl/coursecatalogue;

e. **Course:** a study unit of the programme, as defined by the WHW;

f. **Disability**: any condition which is (at least for the period in question) chronic or long-term in nature and which constitutes an on-going disadvantage for the affected student when receiving education, taking examinations or taking part in practical exercises;

g. **Double degree:** two degrees awarded by two institutions of higher education that offer a joint study programme; the joint programme covers the programme intended learning outcomes of both programmes;

h. **EC**: European Credit**.** A unit involving 28 hours of study, as used in relation to the European Credit Transfer System (ECTS), whereby a full academic year consists of 60 ECs or 1,680 hours (Article 7.4 WHW);

i. **Education period:** The period in which the study unit is offered. This period starts in the first week in which the study unit has any educational activity and ends in the last week in which the study unit has an educational activity and/or a test. Resits are not part of the education period. This period is not always the same as a quartile.

j. **Examination, also exam:** an assessment of the student's knowledge, understanding and skills relating to a course. The assessment is expressed in terms of a final grade. An examination may consist of one or more tests (*in Dutch: toetsen*);

k. **Examination programme**: all study units of a study programme counting towards the degree;

l. **Examination Board:**. The Examination Board is the body that establishes, in an objective and expert manner, whether a student meets the criteria set out in the Education and Examination Regulations regarding the knowledge, insight and skills required in order to obtain a degree from the programme concerned;

m. **Examiner:** the individual who has been appointed by the Examination Board, in accordance with Article 7.12c of the WHW, to hold examinations and tests and to determine their results;

n. **Executive Board:** Executive Board of the University of Twente;

o. **Faculty Board:** head of the faculty;

p. **Final degree audit:** a Master's degree programme concludes with a final degree audit. A final degree audit is deemed to have been completed successfully if the study units associated with the relevant programme have been achieved. The final degree audit may also include an additional assessment by the Examination Board;

q. **Fraud and plagiarism:** fraud is an act or omission by a student designed to partly or wholly hinder the accurate assessment of his/her own knowledge, understanding and skills, or those of another person. Fraud includes plagiarism, which is the use of someone else's work without including a correct reference to the source. See the Student Charter of the UT for further details.
    Homologation: a programme that can be offered to students who can be admitted to the Master's programme but who nevertheless have insufficient knowledge, understanding or skills, according to Article 7.30 of the WHW;

r. **Joint degree:** a degree awarded by an institution together with one or more institutions in the Netherlands or abroad, after the student has completed a degree programme (a degree programme, a major or a specific curriculum within a degree programme) for which the collaborating institutions are jointly responsible;

s. **Learning Management System (LMS)** e.g. Canvas;

t. **Master's programme or programme:** the Master's degree programme, as referenced in Article 7.3a Paragraph 1 subparagraph b of the WHW: the entirety of the course components, teaching activities/methods, contact hours, testing and examination methods and recommended literature;

u. **Master's thesis project / final project:** a study unit comprising literature research and a contribution to scientific research, which always results in a written report;

v. **Practical exercise:** participation in a practical training or other educational learning activity, aimed at acquiring certain (academic) skills. Examples of practical exercises are:
    - researching and writing a thesis;
    - carrying out a research assignment;
    - taking part in fieldwork or an excursion;
    - taking part in another educational learning activity aimed at acquiring specific skills or participating in and completing a work placement.

w. **Premaster:** the combination of courses to be followed by a student in order to be eligible for enrolment in a Master's programme.

x. **Programme Board:** the committee charged by the Faculty Board with managing the programme;

y. **Programme Committee:** the Programme Committee as referred to in Article 9.18 WHW;

z. **Quarter or quartile:** a part of a semester as specified in the academic calendar (*jaarcirkel*) of the university;

aa. **Semester:** half an academic year, as specified in the academic calendar (jaarcirkel) of the university

bb. **Senior Examiner:** specific examiners, appointed by the Examination Board to take on the role as chair of an assessment committee for the Final Project;

cc. **Student Information System (SIS)**: the system used by the institutional administration to register and record information relating to particular students and study data, as stipulated in the WHW, in this case Osiris;

dd. **Student:** any person enrolled for a programme in accordance with Articles 7.34 and 7.37 of the WHW;

ee. **Student's chair: Research chair of the student's supervisor for the final project**

ff. **Study Adviser:** Person appointed by the faculty board who acts as contact between the student and the programme, and as such represents the interests of the students, as well as fulfilling an advisory role;

gg. Study load: The amount of time an average student needs to capture the learning material. The study load comprises for instance project work, self-study, lectures and writing papers. The study load is expressed in credit points in accordance with the European Credit Transfer System;

hh. Study Programme: all study units followed by the student as part of his/her Master's programme;

ii. Test: part of an examination (*toets*);

jj. University: the University of Twente (UT);

kk. WHW: the Dutch Higher Education and Research Act (*Wet op het hoger onderwijs en wetenschappelijk onderzoek*).

ll. Working day: Any day from Monday to Friday with the exception of official holidays and the prearranged compulsory holidays on which the staff is free.

Any other terms used can be assumed to follow the definitions ascribed to them by the WHW.

A2. Previous education and admission

Article A2.1 Previous education

1. In order to qualify for enrolment in a Master's programme, either a Bachelor's degree obtained through academic higher education (WO) is required, or a Bachelor's degree from a university of applied sciences (HBO) in addition to the successful completion of an appropriate pre-Master's programme. The requirements that the Bachelor's degree must meet are specified in Section B.
2. In the event that a candidate does not have a Bachelor's degree as referred to in Paragraph 1, the Admissions Board of the Master's programme will assess the candidate's suitability for admission to the programme on the basis of the requirements stipulated in Section B.
3. The Admissions Board can admit students who lack some prior knowledge, provided they judge that this will not reduce the student's likelihood of successfully completing the programme.
4. The Bachelor's degrees that entitle students to automatic admission are listed in Section B.
5. Additional admission requirements are stipulated in Section B.

Article A2.2 Language requirements

1. To be admitted to the programme, students must be proficient in English.
2. Proof of proficiency in English is required by the successful completion of one of the following examinations or an equivalent:
   a. IELTS overall band score of at least 6.5 no older than two years
   b. TOEFL internet based test of at least 90 no older than two years
   c. Cambridge CAE or CPE (both with an A, B, or C grade)
3. The following students are exempt from the requirement to prove their proficiency in English; students who:
   a. have obtained a relevant Bachelor's degree from an accredited academic institution in the Netherlands;
   b. have obtained a three-year Bachelor's degree in one of the following countries: Australia, Canada, Ireland, New Zealand, the United Kingdom or the United States of America) .

Article A2.3 Application and enrolment

1. The deadline for application for admission to the Master's programme is stipulated on the website www.utwente.nl/master. Different application deadlines apply to different types of applicants.
2. After admission, the student must enrol before 1 September or 1 February thereafter.

Article A2.4 Admissions Board

Each programme has an Admissions Board, which is appointed by the Faculty Board. The Faculty Board will appoint this board after consulting with the Programme Directors and Examination Boards of the relevant Master's programmes.

Article A2.5 Admissions procedure

1. The Admissions Board is responsible for the admissions to the programme in relation to any students that cannot be admitted directly (see Paragraph A2.1.4).
2. With a view to admission to the programme, the Admissions Board assesses the candidate's knowledge, understanding and skills, including relevant language skills. The Board may request experts from inside or outside the University to test certain types of knowledge, understanding and skills, in order to supplement written evidence from the degree programmes the student has already completed.
3. In addition to the requirements , the Board will also assess requests for admission on the basis of the following documents:
    a. motivation letter;
    b. English proficiency scores according to Art. A2.2;
    c. Diploma;
    d. transcript of records;
    e. curriculum vitae;
    f. abstract of thesis;
    g. course descriptions for programme-specific courses, research methodology courses, mathematics courses and a table of content for the course materials.
4. The Admissions Board may decide that particular units must be included in the student's study programme to compensate for lack of knowledge on the part of the student (homologation courses).
5. Candidates will receive either confirmation of their admission to the Master's programme, admission to a pre-Master's programme or a negative decision. An appeal against a decision can be lodged with the UT Complaints Desk (*UT Klachtenloket)* within six weeks.

Article A2.6 Refusal or termination of enrolment (unsuitability/judicium abeundi)

1. Based on the provisions of Section 7.42a of the WHW, the Faculty Board or the Examination Board may, in exceptional cases, ask the Executive Board to terminate or refuse a prospective student's enrolment in a programme, if that student's actions or words show that the student is unsuitable either for practising one or more of the professions for which the programme in question would prepare him/her or for practical preparations for professional practice.
2. If it is believed that a prospective student is unsuitable for the programme, as described in Paragraph 1, the Examination Board or the Faculty Board will initiate an inquiry, and the student will be informed

of this promptly. The Examination Board or the Faculty Board will not issue any recommendation without carefully considering the interests involved and giving the prospective student the opportunity to be heard.

Article A2.7 Pre-Master's programme

1. The Admissions Board may decide to admit a candidate to the Master's programme on the condition that a pre-Master's programme is completed successfully before his/her admission.
2. A pre-Master's programme is a bridging programme with a study load of 15 or 30 ECs, to be decided by the Admissions Board.
3. The pre-Master's programme is assembled by the Programme Director together with the Admissions Board. A fixed programme may be defined for specific groups of students. However, a student may also be given a personalized programme.
4. Proof of the successful completion of the pre-Master's programme, together with the related Bachelor's degree, will serve as proof of admission to the relevant Master's programme, in the same and in the subsequent academic year.
5. Candidates are required to complete the pre-Master's programme within one academic year unless otherwise specified. There are two opportunities to take the examination for each part of the programme.
6. Students from Dutch Universities of Applied Sciences may be allowed to follow a pre-Master's programme during their Bachelor's programme. Paragraph 5 applies to these students. In this case, the relevant Bachelor's degree, together with the successfully completed pre-Master's programme, will serve as proof of admission to the relevant Master's programme.

A3. Programme content, structure and rules

Article A3.1 Aim of the programme

The aims and programme intended learning outcomes of the Master's programme (Article 7.13 Paragraph 2 (a) of the WHW) are described in the Section B.

Article A3.2 Programme structure

1. The programme comprises the study units listed in Section B.
2. The scope of the Master's programme in ECs is 120. These 120 credits must not include any credits which have constituted part of a previously completed Bachelor's degree audit.
3. If students are required to sign up to participate in a particular study unit, this is only possible during the periods designated for that purpose.
4. Every Master's programme has a duration of two years, with each year divided into two semesters.
5. Every semester consists of two periods of ten weeks of education.
6. Master's programmes are taught on a full-time basis.

Article A3.3 Language of Instruction

1. The language of instruction for all Master's programmes is English.

Article A3.4 Exemptions

1. The examination board can grant students exemption from one or more complete study units at their request. To this end, students will demonstrate that they
    a. have completed a component of a similar content, size and level of a university or higher professional education programme or
    b. have, as a result of work and/or professional experience, sufficient knowledge and skills regarding the study unit concerned.
2. The examination board is authorised to make exceptions to the provisions as stated in paragraph 1 and grant an exemption to a student for components of a study unit.
3. An exemption granted by the examination board will be registered in SIS with the concerning study unit or parts thereof with an EX (exemption).
4. Students cannot be forced to take extra study units or parts of study units in their curriculum instead of the granted exemption.
5. Exemptions may be granted to a maximum of 30EC.
6. Students may be exempted from the obligation to participate in practical exercises if they can demonstrate that they expect to be placed in a moral dilemma as a result of the need to meet one of the requirements for this component. In such cases, the examination board decides whether the component can be carried out in another manner to be determined by the examination board.

Article A3.5 Flexible degree programmes

1. The Examination Board for the Master's programme decides whether a student may take part in a flexible degree programme as stipulated in Section 7.3d of the WHW. The Examination Board assesses whether the programme is appropriate and consistent within the domain of the programme and whether the level is high enough in relation to the programme intended learning outcomes.
2. The content of the flexible degree programme is determined and motivated by the student and must be equivalent to a regular Master's programme in terms of scope, breadth and depth.
3. The following requirements must be met in order to be eligible for the Master's degree:
    a. the deviation from the regular Master's programme should be at least 30 ECs while still ensuring coherence in terms of content;
    b. the level of the programme must match the objectives and programme intended learning outcomes that apply to the programme for which the student is enrolled.

Article A3.6 Combined programmes

A student can obtain diplomas for two UT Master's programmes on the basis of a combined study programme that satisfies the requirements of each individual programme, including the programme intended learning outcomes.

The following requirements apply to the combined programmes and their composition:

1. The student needs to be admitted and enrolled in both programmes in order to combine two programmes.
2. The student's programme of courses represents an amalgamation of two separate study programmes and satisfies the requirements relating to the programme intended learning outcomes of both corresponding Master's programmes. Depending on the requirements of the two Master's programmes, there are four possibilities:

    a. A **combined final project** and **combined internship**, whereby both study programmes also incorporate a **maximum of 20 ECs from common courses**.

    b. A **combined final project,** but with a **separate internship or no internship**, whereby both study programmes also incorporate a **maximum of 30 ECs from common courses**.

    c. **Two separate final projects**, with a **separate internship or no internship**, whereby both study programmes incorporate a **maximum of 30 ECs from common courses**.

    d. In case there is **a Standard Programme** for a combined study programme **defined by two UT Master's programmes**, the requirements laid down in the Standard Programme will apply

3. The combined programme as described in paragraph 2 includes not only study units that are part of both Master's programmes, but also courses for which an exemption has been granted for one Master's programme on the basis of results achieved as part of the other programme.

4. If a single combined final project is included in and is relevant to both Master's programmes, as referred to in 2a and 2b, the study load of the final project should be at least 100% of the requirement in ECs for the final project of the programme that has the highest number of ECs plus at least 50% of the requirement in ECs for the final project of the other programme.

5. If a single combined internship is included that satisfies the requirements of both programmes as referred to in 2a, the study load of the internship should equal the load of the internship with the highest number of ECs.

6. Approval for the common courses is required from the Examination Boards of both Master's programmes.

7. Students who complete a study programme as described take a combined final degree audit which they will pass if the assessments included in their file would result in a pass for the final degree audit of both programmes individually in accordance with the applicable regulations. The Examination Boards of the programmes involved will decide whether a student will pass the final degree audit. The Programme Board will provide instructions concerning the date of a combined final colloquium.

Article A3.7 Master's final Project

1. Requirements for starting the final project:

    a. Students must have no more than 10 ECs still to complete, other than the final project;

    b. As an exception to the rule above, if the programme allows for a combined final project and internship, 10 ECs in unfinished courses other than the internship and final project are allowed.

2. The student and examiner(s) must agree on the start date and completion date for the Master's final project.

3. This agreement is to be documented in a plan that takes into account the nominal length of the final project, a reasonable holiday period and any uncompleted study units.

4. The timetable for completion must be approved by the supervisor and signed by the student.

5. The Final project is concluded with an oral presentation in public at the University of Twente, unless the project is carried out at another university as part of the exit year of a double degree programme.

6. Programme-specific regulations regarding the final project are stipulated in Section B.

Article A3.8 Composition of the assessment committee for the Final Project
1. The committee contains at least two examiners, at least one of which is senior examiner; it is chaired by a senior examiner
2. The examiners must belong to (at least) two different research groups
3. All supervisors of the project are members of the assessment committee. Supervisors who are not examiners serve on the committee in an advisory capacity.
4. 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
5. In the event that the assessment committee cannot meet the above specifications, a motivated request to the Examination Board may be made by the Programme Board. The approval for the particular assignment remains valid during the academic year in which the request was granted or the duration of the final project in question with the maximum of one year.

Article A3.9 Internship
1. The internship is a period of study-related professional practice amounting to 20 ECs and is carried out by the student at a company, university or organization outside the University of Twente.
2. Requirements for starting the internship:
   a. students must already have obtained at least 45 ECs of their examination programme;
   b. additional requirements may apply for each programme, which will be stipulated in Section B where applicable.
3. A description of the internship must be drawn up and approved by a member of UT staff appointed as examiner. This approval must be obtained before commencing the internship.
4. The student must register with the EEMCS Internship Office at least three months before starting his/her internship.
5. The daily supervisor for the internship is the company supervisor: a member of the organization where the internship is carried out. This supervisor must be named in the project description, mentioned in Paragraph 3.
6. The UT supervisor mentioned in Paragraph 3 supervises the student remotely during the internship. If, in the opinion of this UT supervisor, adequate supervision by the company supervisor is not – or no longer – possible, the UT supervisor may decide to take over as the student's daily supervisor.
7. During the internship, the student will write a report about his/her work. At the end of the internship period, this report will be submitted to the company supervisor. The company supervisor will assess the report using the relevant assessment form. The assessment will be based on the supervisor's observations of the student and on the report submitted by the student.
8. The UT supervisor acts as the examiner for this unit, and will base his/her grade on the assessment made by the company supervisor, the report written by the student and a discussion with the student. The student should submit the report to the UT supervisor within two months of finishing the internship.

Article A3.10 Duration of the internship
1. According to the study load of 20EC the duration of an internship is the equivalent of 14 weeks of full time work including writing a report. An extension with two weeks of this period is allowed to compensate for unforeseen delays.
2. If the host organisation and the student want to maintain a working relation after this period, the student must complete the internship first. After completion of the internship, the working

relation between the student and the company will fall outside the scope of the student's study programme and outside the responsibility of the University of Twente.

Article A3.11 Confidentiality
1. The final thesis report and internship report will be made public unless confidentiality has been deemed necessary (see following Paragraphs).
2. The Programme Board may declare an internship report and/or final thesis report to be confidential for a limited period upon receiving a motivated request to do so.
   a. A confidentiality request should be made by the examiner preferably before the start of the final project or internship, but no later than four weeks before the end of the final project or internship.
   b. A confidential report remains accessible for the supervisor, the Programme Board, and any members of bodies with the authority to assess the quality of the grading of the entire programme.
   c. All parties mentioned in 2b are required to respect the confidentiality of the report.
3. The confidentiality period will be as short as possible with a maximum of two years. When extension of the period is required based on fair and reasonable arguments, one prolongation of maximally three years can be granted upon request.
4. If confidentiality is deemed necessary as described in 2, the contents of the public final thesis presentation may be adapted to avoid making public those matters that are considered confidential.

Article A3.12 Evaluation
To monitor and to improve the quality of teaching, the EEMCS MSc programmes use information about the students' learning experiences. This information is obtained from:
- Internal evaluations
  - Periodic course evaluations at the end of each course
  - Additional panel evaluations, on request from lecturer, students, or Programme Director
- External sources
  - National Student Survey (NSE)
  - National Alumni Survey
  - International Student Barometer

A4. Examinations

Article A4.1 Signing up for courses and examinations
1. Every student must sign up in SIS in order to participate in a course. It is also mandatory to register before every examination opportunity.
2. Notwithstanding Paragraph 1, any student who has correctly signed up to participate in the instruction/classes for a particular course and has been admitted will also automatically be signed up for the subsequent examination, unless the course description specifies otherwise. For each examination after that, the student has to register in SIS manually.

3. The student has the right to inspect recent model test questions or model tests, or old tests and the associated answer keys, along with the standards for assessment.
4. The test schedule must be published in the Learning Management System (LMS) at least two weeks prior to the start of the study unit.
5. The assessment schedule must include:
    a. the learning objectives;
    b. when and how tests will be administered;
    c. the relative weighting of the tests;
    d. any required minimum grade per test
    e. the resit for each test (if applicable), the form of the resit, when it will take place, and any conditions for participating in the resit;

Article A4.2 Type of examination

1. The course catalogue stipulates how a study unit is to be assessed and the form of any examinations.
2. In the event that a study unit is discontinued, at least one opportunity will be provided in the year subsequent to discontinuation to take the examination(s) or parts thereof, and a transitional arrangement will be included in Section B for the subsequent period.
3. At the student's request, the Examination Board may permit a different form of examination than that stipulated in the course catalogue. The examiner may ask the Examination Board to permit a different form of examination on condition that all participants agree.

Article A4.3 Examination opportunities

1. There will be an opportunity to take written or oral tests at least twice a year. Other forms of examination can be completed at least once a year.

Article A4.4 Examination results

1. Examination results are expressed with a 'pass'/'fail' or in half grades from 1.0 up to and including 5.0 and from 6.0 up to and including 10.0 whereby:
    a. Grades will only be rounded in the last phase of the assessment of the study unit.
    b. The rounding is done in accordance with the following scheme:

Grade ≥ 5.00 and < 5.50	⇨ 5.0
Grade ≥ 5.50 and <6.00	⇨ 6.0
In case n≠5 Grade≥ n.00 and <n.25	⇨ n.0
Grade ≥n.25 and <n.75	⇨ n.5
Grade ≥n.75 and <(n+1).00	⇨ (n+1).0

2. Test results are expressed in a grade from 1.0 to 10.0 with one decimal place, or as 'pass / fail'
3. Exam results of 6.0 or higher are a pass.
4. ECs will only be awarded for the study unit if an examination has been completed with a grade of 6.0 or higher or a pass. No ECs will be awarded for individual components of study units and/or individual tests.

5. Exam results with a pass grade obtained at foreign universities will be registered with a P (Pass). Exam results obtained at Dutch universities will be adopted one-to-one in compliance with the former paragraphs.
6. If a student receives more than one authorized result for the same study unit, the highest grade will apply.

Article A4.5 Oral examinations

1. Oral examinations are conducted in public, unless the Examination Board has determined otherwise in relation to a particular case.
2. If a third party wishes to be present during an oral test, they must submit a request to the Examination Board at least ten working days prior to the oral examination. This does not apply for graduation colloquia.
3. If the Examination Board has determined that members of the Examination Board (or an observer representing the Examination Board) are to be present during the oral examination, it will notify the examiner and the student at least one working day prior to the test.
4. For an oral examination, proof is required that the student was treated appropriately and that the assessment was reliable. This can be shown by, for instance, the presence of a second expert who cannot be a teaching assistant, or a video recording of the oral examination. The assessment is documented in a form that shows that the intended learning outcomes have been assessed appropriately.

Article A4.6 Determining and announcing results

1. The result of a written examination or practical exercise is published via SIS within 20 working days. This will be done by BOZ (Office of Educational Affairs).
   a. The examiner will determine the result of a written examination within 15 working days after the examination and notify BOZ of the result.
   b. No rights can be derived from examination results published on the LMS or communicated via any medium other than SIS.
2. The examiner will inform the student of the result within at most 1 working day after conducting the oral test. If the oral test is part of a series of oral tests for the same study unit, which take place on more than one working day. In that case, the examiner determines the result within one working day after the conclusion of the series of oral tests.
3. If the result for a study unit is based on multiple tests, the date of completion of the final test will count as the examination date.
4. Should the examiner be unable to meet the terms described in Paragraphs 1 and 2 due to extraordinary circumstances, they must inform the Examination Board of this, providing reasons for this situation. The student is then informed of the delay by the Examination Board as soon as possible, whereby a new deadline for the result will also 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 examination.
5. If a second examination is planned shortly after the first, the results of the first examination will be published at least five working days prior to the second examination.

Article A4.7: Examination date

1. The examination date of a study unit, mentioned in the SIS, is the date upon which the student fulfilled the last obligation, necessary for an assessment of the unit.
2. If a student agrees with an examiner about an examination date for a certain unit, the submission of additional material by the student after this date will lead to a new examination date, being the date of the submission of this additional material.
3. With respect to possible prior knowledge requirements of subsequent study units a student is allowed to assume that he has passed an examination at the examination date, as long as the result of the examination is pending.
4. If the result of an examination is a fail and if because of this fail a student violates prior knowledge requirements of a subsequent unit in which he participates, the Examination Board can decide that a student must interrupt this subsequent unit pending a repair of this fail.

Article A4.8 Validity period for results

1. The period of validity for the results of an exam that has been passed is unlimited. The validity of an exam result can only be restricted if the tested knowledge, insight or skills are proven to be out of date.
2. Test results are only valid in the academic year in which they were obtained, unless they are aggregated into an exam result.
3. The Examination Board may extend the validity of test results in individual cases at the request of the student.

Article A4.9 Post-examination discussion and right of inspection

1. The student is entitled to a justification of the results of a test from the examiner, whereby the examiner substantiates the assessment that has been given. If no collective discussion of the results is held, the student may request an individual discussion of the results with the examiner within ten working days of the publication of the results. *The discussion must take place no later than five weeks after the publication of the test results, but at least five working days prior to the next test opportunity, in the presence of the examiner or a designated substitute*.
2. The student has the right to inspect his or her work for a period of two years after the assessment.

Article A4.10 Retention of examination results

1. Written examination questions, associated details and the assessed work from written tests will be retained for a period of two years.
2. The retention period for final thesis reports is seven years.

A5 Final Degree audit

Article A5.1 Master's final degree audit

1. The Examination Board determines the result of the Master's final degree audit after establishing that the student has passed all the study units associated with the programme. The date indicated on the degree certificate (i.e. the date of the final degree audit) is the day on which the student completed the final study unit of his/her degree programme.

2. A diploma can only be awarded after the student has received formal approval for his/her study programme as described in Section B.
3. If the student wishes, they may submit a substantiated request in writing to the Examination Board to postpone the final degree audit, and thus to delay the awarding of the degree certificate. The student must indicate the duration of the desired postponement in any such request.
4. In principle the maximum duration of the delay that may be granted is 12 months. In exceptional cases the student may have justifiable reasons to submit a request to delay the presentation of the certificate for more than 12 months.
5. If the student has requested postponement on the basis of Paragraph 3, the date of the final degree audit will be the date on which the Examination Board decides that the student has passed the final degree audit subsequent to the postponement.

Article A5.2 Diploma and transcript

1. The Examination Board grants a diploma as proof that the student has passed his/her final degree audit. The Executive Board will determine the model for the diploma and add a diploma supplement to the diploma providing information on the nature and content of the Master's programme completed. The diploma supplement will be in English and comply with the European format for such diplomas.
2. The International Diploma Supplement will be appended to the certificate for the successfully completed final degree audit (WHW, Article 7.11, Paragraph 4).
3. Individuals who have successfully completed more than one component of the programme and who cannot be awarded a diploma as stipulated in Paragraph 1 will, upon request, receive a statement issued by the relevant Examination Board stating which components have been successfully completed, as well as the study units involved, the number of ECs obtained and the method of examination for the examinations taken.

Article A5.3 Cum Laude

1. The Examination Board checks whether the student has fulfilled all requirements. If the judicium *Cum Laude* ('with distinction') applies, this will be stated on the diploma and the diploma supplement.
2. The *judicium Cum Laude* can be mentioned on the Master's certificate provided the following requirements are met:
   a. The arithmetic mean of the grades for all study units of the Master's examination programme, excluding the Master's thesis (final project), is at least 8.0;
   b. Those parts of the examination programme for which an exemption was granted or which were not graded with a number are not considered when calculating the average grade;
   c. Exemptions within the examination programme may be granted to a maximum of 15 ECs;
   d. The Master's thesis (final project) is graded at 9.0 or higher;
   e. No more than one study unit of the examination programme has been graded lower than 7.0;
   f. The study programme has been completed within 125% of the nominal duration, starting from the start date recorded in SIS.

3. In individual cases the Examination Board may grant the judicium Cum Laude even if not all requirements are met.

A6. Student counselling and study progress

Article A6.1 Study progress report
1. Every student can access his/her list of the results achieved in SIS. The student can request a certified study progress overview from the Student Services Desk if required.

Article A6.2 Academic counselling for students
1. The Faculty Board is responsible for student counselling, which includes informing the student of study opportunities inside or outside the programme.
2. Each student is allocated a study adviser.
3. The study adviser will provide advice on study-related matters, as well as any personal problems that may affect the student's studies if the student so desires.
4. If a student wishes to exercise his/her right to specific counselling or special facilities, the student is required to contact the study adviser. The study adviser will record any agreements made with the student, and this agreement is binding on both the student and the Programme Board.
5. The following applies to the entitlement to special facilities:
   a. there are demonstrable force majeure or personal circumstances; the student is expected to report these circumstances prior to or at the time they occur;
   b. if necessary and possible, special dispensation for participation in examinations or tests and/or the provision of special facilities for examinations or tests will be provided. Such dispensation and additional testing opportunities can only be granted by the Examination Board.

A7. Studying with a functional impairment
1. A functional impairment is a physical, sensory or other impairment that might limit the student's academic progress.
2. The Study Advisor and the student will discuss the most effective adjustments for the student as referred to in Article 2 of the Equal Treatment of Disabled and Chronically Ill People Act (WGB h/cz).
3. Adjustments are intended to remove specific obstructions when following the curriculum and/or sitting exams. Where necessary, these may concern facilities pertaining to the accessibility of infrastructure (buildings, classrooms and teaching facilities) and study material, changes to examination, alternative courses or a custom study plan. Realising the programme intended learning outcomes must be guaranteed when implementing changes.
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 adjustments 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 Advisor 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 adjustments before the end of this period. During this evaluation, parties will discuss the effectiveness of the adjustments provided and whether they should be continued.

10. In the case of dyslexia, an additional period of 15 minutes for every hour is granted in the event additional time for a test is granted.

A8. Amendments, transitional arrangements, appeals and objections.

Article A8.1 Conflicts with the regulations
If any additional regulations and/or provisions pertaining to teaching and/or examinations conflict with these Education and Examination Regulations, the present document (Education and Examination Regulations) will take precedence.

Article A8.2 Administrative errors
If, following the publication of an examination result, a list of grades, or an overview of a student's progress, an error is discovered, the party discovering the error – be it the university or the student – is required to make this known to the other party immediately and to cooperate in the rectification of the error.

Article A8.3 Amendments to the regulations
1. Substantive amendments to these Education and Examination Regulations are determined by the Faculty Board in a separate decision.
2. Every effort will be made to ensure that substantive amendments to these Regulations do not apply to the current academic year. Substantive amendments to these Regulations may, however, be applied to the current academic year provided the interests of students are not prejudiced within reasonable bounds, or in situations of force majeure.
3. Amendments to these Regulations have no effect on earlier decisions taken by the Examination Board.
4. Transitional arrangements are arranged in accordance to Article A8.4.

Article A8.4 Transitional arrangements; examination opportunities
1. In the case of amendments to the Education and Examination Regulations, the Faculty Board may decide to put a transitional arrangement in place.

2. Any such transitional arrangement will be published in Section B.
3. The following principles will be applicable to any transitional arrangement if a Master's programme is changed:
    a. Changes to a Master's programme will be published before the start of the academic year in which they take effect.
    b. No guarantee can be given that all the study units of a Master's programme, as they existed at the time of a student's enrolment in a programme, will continue to be part of the Master's programme concerned. The version of the Master's programme most recently approved by the Faculty Board will serve as the basis for establishing the results of the Master's examination.
4. Transitional arrangements will always specify the following:
    a. which discontinued study units are equivalent to study units or components thereof in the revised Master's programme that is included in Section B;
    b. if a study unit without practical exercises is discontinued, there will be at least one opportunity in the subsequent academic year to take a written or oral examination or to ensure assessment by some other means;
    c. if a study unit that involves practical exercises is removed from the programme, and during the subsequent academic year no opportunities are provided to complete these practical exercises, at least one study unit will be designated as a suitable replacement for the discontinued study unit;
    d. the term of validity of the transitional arrangement.
5. The transitional arrangement requires the approval of the Examination Board pursuant to the provisions of Paragraph 4.
6. In exceptional cases, and provided this works to the student's advantage, the Examination Board may allow a deviation from the number of times and the method by which examinations may be taken for a study unit that has been discontinued.

Article A8.5 Assessment education and examination regulations

1. The Faculty Board is responsible for the regular assessment of the Education and Examination Regulations and takes into account the resultant study load for the students to enable this to be monitored and adjusted if necessary.
2. In accordance with article 9.18 of the WHW, parts of the Education and Examination Regulations need the consent of the Programme Committee. On other parts the Programme Committee can advise.
3. The Programme Committee annually assesses the way in which the Education and Examination Regulations are implemented.

Article A8.6 Appeal and objections

Any appeals against decisions made by the Examination Board or an examiner, and any objections to decisions made by the Faculty Board on the basis of these Regulations, must be submitted in writing to the Complaints Desk at Student Services no more than six weeks after the relevant decision has been communicated.

Article A8.7 Hardship clause

In the event of demonstrable and meaningful unreasonableness and unfairness, the Examination Board may allow exceptions to the provisions of these Regulations.

Article A8.8 Publication

The Education and Examination Regulations and the Rules and Regulations of the Examination Board are published on the website of the programme in question.

Article A8.9 Commencement

These Regulations take effect on 1 September 2020 and supersede the Regulations dated 1 September 2019.

SECTION B: PROGRAMME-SPECIFIC SECTION

BUSINESS INFORMATION TECHNOLOGY

The Education and Examination Regulations (EER) are subdivided into two sections (Section A and Section B), which together form the EER. Section A, which can be seen as the faculty section, includes provisions that apply to all EEMCS Master's degree programmes. Section B contains the provisions that are specific to this particular degree programme, i.e. the Master's programme Business Information Technology.

B1 Programme objectives and final attainment targets

Article B1.1 Aim of the programme

1. The primary goal of the Master's programme on Business Information Technology (MBIT) is to provide graduates with a combination of academic and professional skills and specialized technical knowledge that will enable them to analyse, design, validate and implement advanced ICT systems in their usage context. The students are trained to participate in, and contribute to research in the field, in ways that are scientifically, ethically and socially sound.

The Master's programme offers a stimulating and challenging research-oriented environment in which the following secondary goals are achieved:
  a. Students acquire comprehensive knowledge and insight and develop their professional and academic skills based on initiative and personal responsibility for the learning process.
  b. Students develop an investigative and reflective attitude.
  c. Students acquire an understanding of and gain experience in methods and techniques to be able to model and describe systems and their properties.
  d. Students acquire knowledge of, insight into and experience with requirements identification, design, validation and implementation of ICT systems. They learn to use this knowledge, insight and experience in their search for meaningful and promising alternatives and for making well-considered choices.
  e. Students acquire knowledge of, insight into and experience with requirements identification, design, validation and implementation of business networks. They learn to use this knowledge, insight and experience in their search for meaningful and promising alternatives and for making well-considered choices.
  f. Students develop an attitude that promotes constructive criticism whereby choices are substantiated and discussed.
  g. Students work in a team and contribute to the application and/or development of theory, methods, technologies and tools for the development of ICT systems taking into account their usage context.
  h. Students gain experience to function in complex dynamic situations in which the relevant information is not always immediately and fully available.

To further activate their education (with cases, research assignments and discussion of the research, developments and state-of-the-art literature in the field), students are encouraged to follow developments in the field and can directly and independently coordinate their personal progress towards these developments.
The goal of the Master's programme is to allow graduates to develop aptitudes and proven talent for academic research to the extent to which a continuation of their education with doctoral or PDEng research should be possible.

The Master's programme on Business Information Technology has a particular emphasis on innovative developments and the integration and optimisation of business processes and IT. The programme focuses on acquiring comprehensive knowledge and insight, as well as gaining experience in the integrated development of (networks of) organizations and their business processes and ICT systems, and related

theories and concepts. Methods and technologies, as well as the analysis, evaluation and modelling of both functional and qualitative properties, are important aspects of the programme. Based on solid knowledge and an understanding of the life cycle of ICT systems in their business context, the Master students develop the skills and insight required to manage innovative development processes in an architectural framework and in an environment of internationally-oriented business networks. Insight into the current research in this area is promoted in a number of different ways. Students of the Master's programme develop a constructive critical and reflective attitude by analysing research and design activities, both their own and of others.

Article B1.2 Programme Intended Learning Outcomes

The Master of Science programme on Business Information Technology prepares students to occupy a leading position in the field of Information Systems (IS). Knowledge in the field of management and IT is the very core of their preparation. The Master graduates are capable of integrating and applying this knowledge in the broad context of organizational practice, and also have well-developed skills in communication, interpersonal relations and group work. Finally, the Master graduates possess the specific skills needed for a successful career, such as, knowledge of IT and organizations, a critical attitude, and a disposition towards lifelong learning and innovation.

The Programme Intended Learning Outcomes:

1   Business-IT alignment knowledge and skills

1.1 The graduate understands, and can act upon, the concept of business innovation, including the interaction between IT innovations and innovations in business processes and business organization.

1.2 The graduate understands and is able to assess the short and long-term impact of the business strategies on both the effectiveness and the efficiency of IT

1.3 The graduate is capable of developing business strategies and business information system strategies, and operationalizing them in an architectural framework.

1.4 The graduate can apply the conceptual framework of Enterprise Architecture to improve business-IT alignment.

1.5 The graduate knows how to apply methods and techniques for the integrated development of business processes and business information systems, by making a reasoned selection, by communicating the principles and by contributing to their further development.

1.6 The graduate knows how to apply information systems methods and techniques like requirements analysis, resource management & planning, architectural design, implementation and administration for alignment and life cycle management of information systems.

1.7 Students understand the fundamentals of digitally securing an organisation, and know how to apply the standards, frameworks and risk assessment techniques for managing and developing enterprise information security strategies and concerns.

1.8 The graduate has competences from at least one of the specializations of the BIT master programme:

1.8.1   a. IMEA: The graduate is capable of applying IT in projects in organizations to improve business performance.
b. IMEA: The graduate is capable of designing IT systems to effectively support business processes, strategy and mission.

1.8.2   DSB: The graduate is capable of analyzing and interpreting large amounts of data to make business decisions, such as reconfiguration of organizations and their IT infrastructure.

2 Scientific approach

2.1 The graduate can independently systematically apply the design cycle (analysis, design, implementation, evaluation and reflection) to complex IT and business problems, by selecting and applying theories from different disciplines if necessary.

2.2 The graduate can independently systematically design and execute a research plan (literature research, problem analysis, formulating hypothesis, design and execution research plan, data analysis, report, conclude) crossing different disciplines or fields if necessary and to contribute to the scientific research.

2.3 The graduate has MSc level knowledge of and is able to apply research methodology and research ethics, in the areas of both social science research and design research.

2.4 The graduate can apply creative and critical thinking, reflection and argumentation.

2.5 The graduate is capable of independently acquiring new knowledge and skills from different disciplines.

3 Professional skills

3.1 The graduate can cooperate, discuss and report in written and verbal ways, in English, in both a professional and a research setting, and is aware of the differences between these settings.

3.2 The graduate is capable of working as part of a (multi-disciplinary) team in different roles, in terms of sharing responsibilities, applying time management, and planning resources and reporting, and is aware of group dynamics in development projects.

3.3 The graduate is capable of functioning as a professional in and between different disciplines/fields /cultures..

4 Taking account of Social and Temporal context

4.1 The graduate is capable of analyzing and discussing ethical, social, cultural and societal aspects of problems, solutions and developments and their consequences in the field.

Article B1.3 Didactic concept

The didactic concept of the MBIT programme is based on the three "O's" that characterize the University of Twente's academic programmes: Research ('Onderzoeken'), Design ('Ontwerpen'), and Management ('Organiseren'). The University of Twente also encourages a multidisciplinary approach and provides ample room for internationalization. An entrepreneurial attitude, and an emphasis on designing solutions for complex problems complete our university's profile. As a consequence, the didactic concept that lies at the heart of this Master's programme can be characterized as being a mix of (1) knowledge development in the classical sense, (2) integration of this knowledge in projects, and (3) their application in areas, for example finance, logistics and healthcare..

More specifically, concerning the research aspect, this programme prepares the students to operate at the level of junior researcher by familiarizing them with the Design Science paradigm, as introduced by Hevner, March, Park & Ram[1]. This is a scientific paradigm that aims at increasing human and organizational capabilities through the creation of new and innovative artefacts. Within this paradigm, the building and

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[1] Hevner, A., March, S., Park, J., & Ram, S. (2004). Design science in information systems research, *MIS Quarterly*, 28(1), 75-105.

application of the newly designed artefacts creates knowledge and understanding of the problem domain as well as of the ways of solving problems.

B2. Further admission requirements

Article B2.1 Additional admission requirements

A request to be admitted to the programme is assessed by the MBIT Admissions Board. In addition to the general criteria, the MBI Admissions Board distinguishes two types of (inter)national education:

1. Research Universities (offer more research-oriented programmes);
2. Universities of Applied Sciences (prepare students for more practical jobs).

The assessment of all applicants' skills is based on their academic background. The MBIT Admissions Board has specific requirements depending on the degree of the applicants. Knowledge gaps can be repaired during a pre-master's programme, which should be successfully completed before the student is admitted to the master's programme. In case the knowledge gap is limited, repair can happen during homologation courses incorporated in the Master's programme.

The MBIT Admissions Board determines the duration and content of the pre-master's programme and/or homologation courses. As a general guideline, the study load of the homologation courses should not exceed 15 EC.

The regulations for the different educational backgrounds are:

1. Dutch Research University Degree
1. A Bachelor's degree awarded by a Dutch university.
   Applicants with a Bachelor's degree other than Business & IT or Information Science in a related field awarded by a Dutch university are eligible for admission depending on the contents of their Bachelor's programme. Concerning English proficiency and possible homologation courses, the Admissions Board decides for each applicant whether additional requirements should be set, and whether a proficiency test should be taken.

2. A Bachelor's degree awarded by the University of Twente:
   a. Applicants with a Bachelor's degree in Business Information Technology are directly admitted to the programme.
   b. Students who have obtained a Computer Science and Engineering (CS) or Industrial Engineering & Management science (IEM) Bachelor degree are directly admitted to the programme. They will have to follow some homologation courses that are incorporated in their Master's programme. CS students can choose between 'Implementation of IT in Organizations' or 'ICT Management', while IEM students take 'Software Management'.
   c. Applicants with a technical Bachelor's degree other than BIT, CS or IEM may be admitted to the programme after completion of their Bachelor's and their pre-master's programme.
   d. Applicants with a non-technical Bachelor's degree and VWO Mathematics B, may be admitted to the programme after completion of their Bachelor's and their pre-master's programme.

2. Degree from a University of Applied Sciences (HBO)

Students with a Bachelor's degree in a related field awarded by a HBO may be admitted to the programme after completion of their Bachelor's and pre-master's programme.

The Admissions Board determines whether or not a pre-master's is possible, based on:

- Academic record;
- Content of the Bachelor's programme;
- Proficiency in Mathematics B at pre-university education level (*Dutch: VWO*);
- Proficiency in English at pre-university level (*Dutch: VWO*);
- CGPA of at least 70%;
- Curriculum Vitae;
- Letter of motivation.

The following degrees are currently considered to be in a related field:

- Information Technology, HBO ICT, Information Systems, Computer Science ('Informatica');
- Business IT & Management ('Bedrijfskundige Informatica');
- Information Science ('Informatiekunde').

This is by no means an exhaustive list. Whether or not other programmes are related is decided by the Admissions Board.

3. Non-Dutch University Degree

The MBI Admissions Board assesses international applicants with a Bachelor's degree awarded by a foreign Research University or University of Applied Science on an individual basis. The assessment of the applicant's competences is based on:

- Academic record;
    - NUFFIC credential evaluation;
    - Content of the degree (field related);
- Quality of level of Bachelor's programme;
- CGPA of at least 75% (3.0 on a 4-scale) or equivalent;
- English proficiency test report;
- Letter of motivation;
- Any additional information required by the Admissions Board.

B3. Curriculum

Article B3.1 Composition of programme

The Master's programme on Business Information Technology consists of:
- Six mandatory core courses,
- Two alternative specializations with a choice of at least 4 out of 6 specialization courses,
- Elective courses,
- Research topics,
- Final project.

The Master's programme adds up to at least 120 EC, therefore students can graduate with more than the minimum number of 120 ECs.

The academic programme is depicted in the next articles, showing the course code, course name, quartile and study load in EC.

More details are available via OSIRIS and/or are made known in a timely manner by the examiner in accordance with the provisions of Article A4.

A version of the programme can also be completed as part of a Double degree with the University of Muenster (WWU). This double degree is described in more detail in Appendix I.

Article B3.2 Core courses

The choice of core courses follows from the conviction that all BIT Master's should understand the principles of business process management, enterprise architecture and IT strategy, data science, business case development and enterprise security. Furthermore, all BIT Master's should understand and be able to apply the methods and techniques of design science and other research methodologies.

The core courses of the BIT Master's programme are the following:

Term	Code	Name	EC
Q1	201400277	Enterprise Architecture	5
Q2	192376500	Business Process Integration Lab	5
Q2	202000027	Enterprise Security	5
Q2 / Q3	201400174	Data Science	5
Q3	202000029	Empirical and Design Science Research	5
Q4	192376000	Business Case Development for IT-Projects	5

Article B3.3 IT Management & Enterprise architecture (IMEA)

In this specialization courses on information systems are combined with courses related to the application and management of ICT in relation to the business strategy. The course on Foundations of Information Systems gives an overview of most important Information Systems native theories and research methods, while the course on Architecture of Information Systems is focusing on information systems engineering. In addition, Electronic commerce looks at the innovative applications of IT for business. This specialization covers the main techniques and systems for enterprise architectures combined with techniques that are applicable in IT management and business.

A student in the IT Management & Enterprise Architecture specialization needs to complete at least 4 out of 6 of the following courses:

Term	Code	Name	EC

Q3	192340101	Implementation of IT in Organization	5
Q2	192320501	Electronic Commerce	5
Q3	192360021	ICT Management	5
Q4	192320111	Architecture of Information Systems	5
Q1	201900119	E-Strategizing	5
Q4	202000028	Smart Industry	

Article B3.4 Data Science & Business (DSB)

In this specialization, courses have been selected to cover the methods and techniques necessary to prepare the students to perform business analysis by exploring and reasoning on large amounts of data and to cover the techniques of deploying and using the extracted information to benefit business performance.

Students in the Data Science and Business specialization need to complete at least 4 out of 6 of the following courses:

Term	Code	Name	EC
Q1	191506103	Statistics and Probability	5
Q1	201600070	Machine Learning 1	5
Q1	191820210	Simulation	5
Q2	201200044	Managing Big Data	5
Q3	201100051	Information Services	5
Q4	202000028	Smart Industry	5

Article B3.5 Electives

In addition to the 50 EC that are determined by the core and the specialization courses, the students spend 30 EC on elective courses.

The courses listed below can be chosen by the students as elective courses. A study programme is automatically approved as long as the student follows the mandatory programme completed with courses from the electives list below. A student needs approval from the Examination Board to follow a course as part of their elective space that is not in this list. In case a student follows a course that is not in this list without approval of the Examination Board, the credits from this particular course do not count in his/her examination programme.

Term	Code	Name	EC
ALL YEAR	201300059	Internship BIT	20

ALL YEAR		Study Tour (Inter-Actief)	10
Q1	191820210	Simulation	5
Q1	201900119	E-Strategizing	5
Q1	201600070	Machine Learning 1	5
Q1	192111332	Design of Software Architectures	5
Q1	192320601	Multi agent systems	5
Q1	191506103	Statistics and Probability	5
Q1	201600012	Management and Governance of Innovation & Creativity	5
O1	201500091	Purchasing Strategy and System	5
Q1	191820160	Purchasing management	5
Q1	201700089	Sustainable Business Development	5
Q1	201800045	Construction Supply Chain and Digitization	5
Q1	201600076	Foundations of Information Retrieval	5
Q1	201500081	B-B Marketing	5
Q1	201600013	Investments & Risk Management[2]	5
Q1 or Q3	201700074	Internet Security	5
Q1	192135450	ADSA: Model Driven Engineering	5
Q2	191612680	Computer Ethics	5
Q2	192320501	E-commerce	5
Q2	201200044	Managing Big Data	5
Q2	201500018	Cybersecurity Management	5
Q2	201600040	Requirements Engineering processes and methods[3]	5
Q2 or Q3	201500363	Data Science additional topics	5
Q3	201100051	Information Services	5

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[2] Not in combination with 191860181

[3] Not for students with an UT BSc degree BIT

Q3	201100126	Human Computer Interaction (permission from M-PSY coordinator needed)	5
Q3	192652150	Service-oriented Architecture with Web Services	5
Q3	192340101	Implementation of IT in Organizations	5
Q3	192360021	ICT Management	5
Q3	201500088	HRM and Technology Design	5
Q3	201700080	Information theory and statistics	5
Q3	201800010	Transportation and Logistics Management	5
Q3	194105070	Information Systems for the Financial Services Industry	5
S2	201100022	Cyber-crime science	5
Q4	192320111	Architecture of Information Systems	5
Q4	201600375	Communication Technology for Global Work[4]	5
Q4	192340041	Software Management	5
Q4	192360501	E-health strategies	5
Q4	201500038	E-law	5
Q4	201700082	Principles of Programming, Processes and Pattern	5
Q4	201300074	Research Experiments in Databases and Information Retrieval (REDI)	5
Q4	202000028	Smart Industry	5

Student exchange and international cooperation

The research groups that contribute to the MBI courses have contacts with foreign universities and research institutions. Students interested in studying abroad can make use of these contacts. For more information on studying abroad and the internship, see: https://www.utwente.nl/en/eemcs/student-mobility/ and www.utwente.nl/en/eemcs/traineeship.

Internship or study tour

In order to guarantee the scientific depth of the programme, a student can only take up an 201300059 internship of 20 EC **OR** join the study tour for 10 EC.

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[4] Not in combination with 201200180

Capita Selecta

Students who want to perform a Capita Selecta in their programme have to ask permission from the Examination Board in advance. Some of the criteria the Examination Board will apply to approve a Capita Selecta are:

- The contents and objectives should not overlap too much with any of the available courses, unless following an available course is not practically possible at a certain moment.
- The Capita Selecta should contribute to the programme intended learning outcomes.
- The Capita Selecta should meet the level requirements of the programme.
- The study load for the Capita Selecta must match the number of ECs the student will obtain after completing the Capita Selecta.
- The student needs to find a suitable examiner to support the Selecta Capita Selecta proposal and supervise the learning activities.
- A Capita Selecta can only be requested when there is no other way to meet some BIT-specific training needs of the student.

Article B3.6 Research Topics

Students need to take the course Research Topics BIT (201300058) immediately preceding the Master's final project. During this course the students get acquainted with a research area as a preparation for the Master's final project.

Term	Code	Name	EC
ALL YEAR	201300058	Research Topics BIT	10

More information on the Research Topics can be found at www.utwente.nl/en/mbit/final-project.

Article B3.7 Final Project

The Final Project is scheduled in the second semester of the second year of the Master's programme and is preceded by the Research Topics.

Term	Code	Name	EC
ALL YEAR	192399979	Final Project BIT	30

The final project can be seen as an individual 'Master's assessment test'. After successfully completing the project, the student demonstrates that he/she deserves the Master of Science qualification. In the final project, the student's competence in the integrated application of knowledge, comprehension and skills covered in the earlier study units is assessed. Although the assignment focuses on a specified field of study, the project is assessed on the basis of a number of well-defined generic criteria.

To conclude the project, the student submits a written report (the 'Master thesis') and delivers a public oral presentation about the project, addressing both its implementation and the obtained results. An assessment form for the final project is used to help ensure the homogeneity and transparency of the assessment across all final projects.

The following applies:

1. The final project is a 30-credit study activity to be carried out over a half-year period, which completes the Master's programme.
2. The final project may be developed and implemented at a UT research group, but it may also involve a commissioned assignment from a company, research institution, or another higher education institution. The final project may be performed abroad as well.
3. The final project is a research and/or development undertaking related to the area of the student's chosen specialization.
4. The final project committee consists of at least two supervisors: one from the BMS faculty and one from the EEMCS faculty, stressing the Business and IT signatures of the programme, respectively.

Further information on the final project can be found in the Final Project Manual at www.utwente.nl/en/mbit/final-project.

B4. Degree

Students who have successfully completed their Master's final degree audit are awarded a Master of Science degree. The degree awarded is stated on the diploma.

B5. Transitional and final provisions

Article B5.1 Transitional provisions

Notwithstanding the current Education and Examination Regulations, the following transitional provisions apply for students who started the programme under a previous set of Education and Examination Regulations:

1. *Regulation 2017-2018 regarding the merge of the specializations*
Occasion: *IT Management & Innovation and Enterprise Architecture are combined into one specialization*.
Term of validity for this rule: until September 1, 2023
Students can finish their specialization until September 2023.

2. *Regulation 2020-2021 regarding the curriculum change*
Term of validity for this rule: indefinitely
   a. For students who have not yet completed both Design Science Methodology and Foundations of Information Systems, Design Science Methodology will be replaced by Empirical and Design Science. IMEA students need to take Enterprise security instead of Foundations of Information Systems.
   b. IMEA Students who only completed Design Science Methodology and not Foundations of Information Systems, need to take Enterprise security instead of Foundations of IS.
   c. Students who only completed Foundations of Information Systems and not Design Science Methodology, need to take Enterprise security instead of Design Science Methodology.
   d. For students who started in Q4 of 2019-2020 and/or who have not completed Foundations of Information Systems, Design Science Methodology and E-strategizing, the core courses of 2020-

2021 will replace the ones for 2019-2021. IMEA students, take Smart Industry as additional specialization course instead of Foundations of Information Systems.

e. DSB students who started in or after February 2019-2020, or DSB students who started in Q2 2019-2020 and did not complete Enterprise Architecture, replace E-strategizing with Enterprise Security.

Article B5.2 Publication

1. The Faculty Board will ensure the appropriate publication of these Regulations and any amendments to them.
2. The Education and Examination Regulations will be posted on the faculty and programme website.

Article B5.3 Effective date

These Regulations enter into force with effect from 1 September 2020.

APPENDIX I: DOUBLE DEGREE PROGRAMME UNIVERSITY OF MUENSTER

This appendix describes the Double degree programme Business Information Systems and Data Science together with the Information Systems (IS) programme of the School of Business and Economics (SBE) of the University of Muenster (WWU) in Muenster, Germany. The programme focusses on business analytics and data science.

Article I.1 Admission

As of 2020-2021 all students admitted to the Master BIT can apply for the Double degree with entry semester at the UT. A minimum CGPA of 7 (or country's equivalent) is an entry requirement. The programme management will select maximum 10 applicants based on their CGPA and motivation. Nominations will be automatically acknowledged by SBE. The first (pilot) year (2020-2021) only UT BSc In only students from the BIT Bachelor are eligible due to practical reasons.

Article I.2 Curriculum

I.2.1 Programme start UT (entry) to WWU

M1: Winter semester at UT

Term	Code	Name	EC
Q1	201400277	Enterprise Architecture	5
Q1	201600070	Basic Machine Learning	5
	Elective UT11	Choice out of: Management and governance of innovation and creativity, simulation or multi-agent systems	5
Q2	192376500	Business Process Integration Lab	5
Q2	202000027	Enterprise Security	5
Q2		Advanced machine learning	5

M1: Summer semester at UT
Students start the summer semester at the UT, but transfer to Munster just before the start of Q4. .

Term	Code	Name	EC
Q3	202000029	Empirical and Design Science Methodology	5
Q3	Elective UT2	Choice out of: Data Science, global strategy and business development, or Implementation of IT in organizations	5
Mandatory participation in the seminar orientation from Muenster			

M1: Summer semester at Muenster

Term	Name	EC
S2	BN: Network Economics	6
S2	Seminar	6
S2	Project seminar	12

M2: Winter Semester Muenster

Term	Name	EC
S1	BI: Data Analytics 1	6
S1	BI: Management Information Systems & Data Warehousing	6
S1	IM: Tasks & Techniques	6
S1	Elective M1 (e.g. BN: IOS)	6
S1/2	Elective M2 (all Method-tracks)	6

M2: Final Project

Choice of either Muenster or UT as home base for the master thesis. The local regulations apply, supervision will be shared.

I.2.2 Programme start WWU (entry) to UT

M1: Winter Semester Muenster

Term	Name	EC
S1	BI: Data Analytics 1	6
S1	BI: Management Information Systems & Data Warehousing	6
S1	IM: Tasks & Techniques	6
S1	Elective M1 (e.g. BN: IOS)	6

M1: Summer semester Muenster

Term	Name	EC
S2	BN: Network Economics	6
S2	Seminar	6
S2	Project seminar	12
S2	Elective M2	6

M2: Winter Semester UT

Term	Code	Name	EC
Q1	201400277	Enterprise Architecture	5
Q1	201600070	Basic Machine Learning	5
	Elective UT11	Choice out of: Management and governance of innovation and creativity, simulation or multi-agent systems	5
Q2	192376500	Business Process Integration Lab	5
Q2	202000027	Enterprise Security	5
Q2		Advanced machine learning	5

M2: Summer Semester UT

Term	Code	Name	EC
Q3	202000029	Empirical and Design Science Methodology	5
Q3	Elective UT2	Choice out of: Data Science, global strategy and business development, or Implementation of IT in organizations	5

M2: Final Project
Choice of either Muenster or UT as home base for the master thesis. The local regulations apply, supervision will be shared.

Article I.3 Final Project
The Master thesis will be carried out at either Muenster or Twente as a home base. Regulations from the chosen location will apply. Supervision of the Final Project will be joined. All eligible supervisors from both universities will be classified as either business or computer science. Students need a minimum of two supervisors, one categorized as business, one as computer science.