EDUCATION AND EXAMINATION REGULATIONS (EER)

APPLICABLE FOR THE ACADEMIC YEAR 2023-2024

Faculty of Geo-information Science and Earth Observation (Faculty ITC)

The Faculty Board of the Faculty ITC
hereby adopts the Education and Examination Regulations (EER) that apply to the two Master's programmes as registered in the CROHO:

- M Geo-information Science and Earth Observation
  (CROHO number 75014) (M-GEO)
- M Spatial Engineering
  (CROHO number 60962) (M-SE)

And to the courses that are based on these Master's programmes:

- Postgraduate Diploma (PGD) Course of the M-GEO
- Credit bearing short courses

These Education and Examination Regulations are formulated in view of the Articles 9.5, 9.15 - paragraph 1a, 7.13 – paragraph 1 and 2, 9.38 - b, 9.18 - paragraph 1a, and 7.59 – paragraph 4b of the Higher Education and Research Act (WHW) taking into account the advice from and approval by the Programme Committee and the Faculty Council on the sections where they can or need to advice or approve.

CONTENTS

COMMON ELEMENTS

SECTION 1: GENERAL PROVISIONS

Art. 1.1 Applicability of these regulations

1) The Education and Examination Regulations apply to all students enrolled in the Master's programmes concerned. They also apply to students following the PGD course in Geo-information Science and Earth Observation or short credit bearing courses which involves students studying part of the Master's programme. Deviations from these Master's programme rules for the PGD course are described in the Regulations Pertaining to the PGD course, included in this document.
2) For students who follow a study unit from another programme[1], 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 regulations of the examination board of the programme that offers the study unit concerned. Special facilities[2] according to Article 6.2.5 can only be granted by the examination board of the programme for which the student is enrolled.
3) Both the Master's programmes and the PGD course have their own Regulations pertaining to the programme/ course which are included in Appendices 1, 2 and 3.
4) The Common Elements and the Regulations pertaining to the programme/ course together form the Education and Examination Regulations for the programme/ course concerned.
5) The general section and the programme-specific parts of the education and examination regulations are determined by the Faculty Board.
6) The institutional part of the student charter includes a definition of what the UT considers as fraud[3]. The Examination Board sets out rules for handling cases of fraud in the Rules and Regulations of the Examination Board.
7) The Examination Board sets down regulations for the execution of its tasks and powers in accordance with Article 7.12b of the WHW (see also Art. 5.1).
8) The legal mandate of the Examination Board extends to all study units that are part of a student's programme.
9) The Education and Examination Regulations are only available in English.
10) In some cases where programmes are taught in conjunction with a partner, the two institutes agree upon additional procedures which may take precedence over these Education and Examination Regulations. The JEP coordinator, on behalf of the Programme Manager, informs the students on which Education and Examination Regulations apply.
11) Requests for exceptions to provisions laid down in the education and examination regulations should be submitted to the Examination Board or the Programme Director. The guiding principle here is which body has the authority to make a decision on - or to make an exception to - a provision of these regulations.

Art. 1.2 Definitions

4TU: The four Universities of Technology of the Netherlands (Twente, Delft, Eindhoven, Wageningen);

Academic year: The period that starts on 1 September and ends on 31 August of the following year;
Canvas: The digital learning management system of the University of Twente.
Certificate: Official document handed out to the student by the Examination Board upon successful completion of a credit bearing short course the undergraduate Diploma course or the PGD course. The Certificate is handed out together with a matching Course Record;

[1] This applies for example for a minor module, for an elective study unit from the study programme of a student and for a study unit which is not included in the standard study programme of the student. This does not apply, unless otherwise agreed, for units that are supplied.

[2] Under Article 6.2.5 this is about providing special facilities with regard to testing to a student with functional impairments. All other matters are handled by the examination board of the programme that offers the study unit.

[3] See https://www.utwente.nl/en/ces/sacc/regulations/charter/ & https://www.utwente.nl/en/examination-board/Fraud/

Course Record: An overview of the study units attended and the grades obtained at the Faculty ITC and possibly joint education programme partners;
CROHO: Central Register for Higher Education in the Netherlands;
Credit transfer: The procedure of granting credit to a student for educational experiences or courses undertaken at another university;
Curriculum: The complete set of compulsory and optional study units belonging to the programme, as set down in the regulations pertaining to the programme;
Diploma: Official document handed out to the student by the Examination Board upon successful completion of one of the Master's programmes stating that the student has been awarded an MSc degree. The Diploma is issued with a matching Diploma Supplement;
Diploma Supplement: International Diploma Supplement with information on the nature and content of the completed Master's programme;
EC: A unit of 28 hours of study workload, in accordance with the European Credit Transfer System, a full academic year consisting of 60 EC or 1680 hours (Article 7.4 WHW);
EER: Education and Examination Regulations;
Exam: An evaluation of the knowledge, understanding and skills of the student, as well as the assessment of the results of this evaluation (Article 7.10 of the WHW); an exam may consist of a number of tests;
Examination Board: The Examination Board is the body which determines autonomously and objectively whether a student satisfies the conditions that the Education and Examination Regulations set on the knowledge, understanding and skills needed to obtain an MSc degree or Certificate and deals with students' requests regarding examination. In this document, Examination Board means the Examination Board of the M-GEO and M-SE Programmes;
Examiner: The individual who has been appointed by the Examination Board in accordance with Article 7.12c of the WHW to hold exams and tests and determine their results;
Faculty Board: Head of the faculty (Article 9.12 WHW);
Faculty ITC: Faculty of Geo-Information Science and Earth Observation of the University of Twente;
Faculty ITC-BOOZ: Dutch abbreviation for the Bureau Education and Research Services of the Faculty ITC;
Final Examination: The autonomous and objective decision of the Examination Board that the student has successfully completed the Master's programme and that an MSc degree is awarded;
Free study space: The part of the Master's programme in which the students can make their own choices on which courses to take to obtain the required number of ECs;
Institution: University of Twente;
Joint Education Programme (JEP): A modality of the M-GEO where the programme is executed by the Faculty ITC in cooperation with another institute or university;
Grade: A level of achievement against specified criteria for an individual test or exam. This word is synonym to the word "mark";
Master's Programme: The programme as described in the regulations pertaining to the Master's programme in the appendix of these Education and Examination Regulations;
Mentor: The faculty member who offers academic guidance to a student;
MSc Research Coordinator: The faculty member appointed by a research theme to facilitate and organise the research of the students who conduct their MSc Research in this theme;
M-GEO: Master's programme Geo-Information Science and Earth Observation;
M-SE: Master's programme Spatial Engineering;
Personal Development Portfolio: The digital environment in which the student keeps his/her personal plans, progress and reflections during the study in the M-SE (abbreviated as PDP);
Portfolio holder Education: This person is the delegate of the Faculty Board on education matters and member of the Faculty Board;
Programme Committee: As referred to in Article 9.18 of the WHW; the Programme Committee is composed of both teacher and student members and approves the EER on specific topics and offers advice on other academic matters (Article 9.18, WHW, and article 10b, Faculty Regulations). In this document, Programme Committee means the Programme Committee of the M-GEO and M-SE Programmes;

Programme Director: Person appointed by the Faculty Board to be the governing head of a Master's programme as defined in Article 9.17 of the WHW. The Programme Director is responsible for the development and quality of the programme and delegates certain tasks to the Programme Manager;

Programme Manager: The person who is responsible for the planning and organisation of the development and implementation of the Master's programme and derived courses. In the M-GEO programme certain tasks are delegated to the Specialisation Coordinator;

Quartile: A teaching and learning period of 10 weeks as defined by the 4.TU calendar. Each academic year contains 4 quartiles;

Research Theme Leader: The person who is responsible for all research carried out by the scientific faculty members, PhD researchers and Master's students connected to that theme;

Rules and Regulations of the Examination Board: The Rules and Regulations of the Examination Board (WHW, Article 7.12b, Paragraph 1b);

SIS The Student Information System designated by the institutional board for registration and for providing information on all relevant data related to students and the programme, as described in the WHW.

Specialisation: Set of courses offered within the Master's programme or PGD course of the M-GEO focusing on a specific domain;

Specialisation Coordinator: Coordinator of the specialisation oriented study units of the Master's programme and PGD course of the M-GEO. The Specialisation Coordinator executes some delegated tasks from the Programme Manager;

Student: Anyone registered for a programme or course in accordance with Article 7.34 and 7.37 of the WHW;

Student Affairs: Student Affairs officers are located within the Faculty ITC-BOOZ and offer non-academic support to students;

Study Adviser: Faculty member appointed by the Faculty Board to act as contact between the student and the programme, and in this role represents the interests of the students, as well as fulfilling an adviser role;

Study Load: The amount of time an average student needs to master 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 (ECs)

Study unit: A component of the programme as described in Article 7.3, Paragraphs 2 and 3 of the WHW. Every study unit is concluded with an exam. See also Article 4.1.1 and 4.1.2 of this EER;

Supervisor: Appointed staff member who supervises the MSc Research or Final Assignment of the student;

Teacher: Faculty member or guest lecturer charged with giving lectures in a study unit;

Test: Part of an exam. If a study unit has only one test, this coincides with the exam for the study unit in question;

Test plan: A plan indicating how the tests in a study unit lead to the exam, see also Article 4.4 of this EER;

Test result: A result that contributes to the exam for the study unit;

UT: University of Twente;

Working Day: Any day from Monday to Friday with the exception of official holidays and the prearranged 'bridging days' (compulsory days free of work) on which the staff are off;

WHW: The Higher Education and Research Act, Bulletin of Acts, Orders and Decrees 1992, number 593, and as amended since;

Any terms not defined here have the significance assigned to them by the WHW.

SECTION 2: ADMISSION

Art. 2.1 Prior education requirements

1) Admission to the programme is obtained if the prerequisites with regard to prior education for enrolment in university education, in accordance with Article 7.30b of the WHW, have been met.
   a. Programme-specific admission requirements for the Master's programmes and PGD course are set out in the Regulations pertaining to the programme/ course concerned (see Appendices 1, 2 and 3).
   b. The Programme Director is responsible for assessing the admissibility of applicants and for issuing admission letters on behalf of the Faculty Board.
   c. Because of the contents of the Master's programmes, applicants with visual or physical disabilities should only be registered when the functional impairment is not a major obstacle for meeting the learning outcomes. See also Section 7 on Studying with a functional impairment.
2) Study unit-specific admission requirements are set out in the study guide of the programme concerned and will be used to decide upon admission to the study unit.

SECTION 3: CONTENT AND STRUCTURE OF THE MASTER'S PROGRAMMES

Art. 3.1 Aims of the programmes

The aims and learning outcomes of the Master's programmes (Article 7.13, Paragraph 2c of the WHW) are described in the regulations pertaining to the programme (Appendices 1 and 2).
The programme learning outcomes of the Master's programmes of the Faculty ITC fit the internationally recognized level descriptions of the so-called Dublin Descriptors, and are in accordance with the equivalent Criteria for Academic Bachelor and Master Programmes agreed upon by the 4TU.

The Dublin Descriptors are:
   a. Knowledge and insight;
   b. Application of knowledge and comprehension;
   c. Critical thinking;
   d. Communications;
   e. Learning skills.

The 4TU Criteria for Academic Bachelor's and Master's Programmes are:
   a. Expertise in one or more academic disciplines
   b. Research competence;
   c. Design competence;
   d. A scientific approach;
   e. Basic intellectual skills;
   f. Competence in cooperation and communication;
   g. Awareness of temporal and social context.

Art. 3.2 Structure of the Master's programmes

1) The Master's programmes have a study load of 120 EC. 1 EC is equivalent to 28 hours of study.
2) The programmes are described in the Regulations Pertaining to the Master's programme concerned (included in this document), in accordance with Article 7.13, Paragraph 2 a to e, h, i, l, s, and t of the WHW.

Art. 3.3 Language of instruction for the Master's programmes

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

Art. 3.4 Exemption

1) The Examination Board can grant the student exemption from one or more complete study units at the student's request. To this end, the student demonstrates that the student has completed a

component of a similar content, size and level of a university or has, as a result of work and/or professional experience, sufficient knowledge and skills regarding the study unit concerned.
2) In dealing with requests for exemption, the Examination Board obtains advice from the Examiner involved.
3) The total study load of the exemptions cannot exceed 30 EC to be eligible for the MSc Degree.
4) Exemption is never given for (part of) the MSc Research in the Master's programmes or the Final Assignment in the PGD course.

Art. 3.5 Tailor-made Master's programme

1) A tailor-made Master's programme is a programme which is different from the standard Master's programme as defined in the programme specific part of the EER.
2) The Examination Board decides on requests for permission to take a tailor-made Master's programme as stipulated in Article 7.3 h of the WHW. The Examination Board assesses whether the programme is appropriate and consistent with the learning outcomes of the Master's programme.
3) Any change in the sequence of study units requires the approval of the Programme Director.
4) The procedure for requests is described in the Rules and Regulations of the Examination Board.

Art. 3.6 Following courses within the free study space of the programme in the Netherlands

1) If a student wants to follow a course of a CROHO accredited programme at another faculty of the University of Twente or another Dutch university, the student has to ask for permission from the Programme Manager of the Faculty ITC Master's programme through a written request. The Programme Manager checks whether this course fits within the programme's focus and Master's level.
2) This article does not apply for the MSc Research in the Master's programme or the Final Assignment in the PGD course.

Art. 3.7 Credit transfer outside the free study space and/or outside the Netherlands

1) Students wanting to transfer credits undertaken at another university have to request this to the Examination Board following the procedure defined in the Rules and Regulations of the Examination Board.
2) Transferred credits will be mentioned on the Diploma Supplement.
3) At least 50% of the study load of the Master's programme has to be taken at the Faculty ITC to be eligible for the MSc Degree.
4) Credit transfer is not allowed for (part of) the MSc Research in the Master's programmes or the Final Assignment in the PGD course.
5) Grades obtained outside the Netherlands will not be mentioned on the Diploma Supplement. They will be mentioned as Pass.

Art. 3.8 Joint Education Programmes

1) Courses, taken at JEP partners and falling under a JEP agreement, can be followed without a request to the Examination Board as mentioned in Art. 3.7-1.
2) The Examination Board approves the organisation of a Joint Education Programme as a special case of a tailor-made Master's programme for all students studying in the Joint Education Programme following a quality assurance procedure every three years.
3) In case the Examination Board approves the structure and curriculum of the Joint Education Programme, all courses followed and the grades obtained in the Joint Education Programme are mentioned on the Diploma Supplement.
4) For Joint Education Programmes which have not been through the quality assurance procedure yet, the credits obtained outside the Faculty ITC are mentioned on the Diploma Supplement without the grades obtained at the partner university or institute.

Art. 3.9 Credit bearing short courses

1) Successfully passed exams of credit bearing short courses can be used as building blocks for obtaining an University of Twente PGD Certificate or Master's Diploma, provided the student has been formally admitted to the PGD course or Master's programme.

Art. 3.10 Combined programme

1) The term Combined programme is used for situations where the student studies for two programmes at the same time and will conclude each separately with a Diploma (also called a double degree).
2) Requests for a Combined programme have to be submitted to the Examination Board by the student before the start of the programme.
3) A total study load of 30 EC from other programmes can be incorporated to be eligible for the MSc Degree of the ITC programme.
4) The overlap cannot include (part of) the MSc Research in the Master's programmes.

SECTION 4: EDUCATION AND EXAMS

Art. 4.1 General

1) A study unit is a pedagogically coherent element of the programme that can have different forms, such as a course, a case study, an internship, an elective or MSc Research.
2) A study unit is completed with an exam.
   a. The questions, tasks and practical exercises of each exam cannot exceed the learning outcomes of the study unit.
   b. An outline of the learning outcomes is presented before the start or at the first meeting of each study unit.
3) The exam may consist of a number of tests but must result in a single grade. Exams and tests can have the following forms: a written or oral test, a practical exercise, an assignment, or a combination of these. Exams and tests can be held online.
4) A test can be taken in several parts, spread over time. Results of these parts are not included in the SIS, but can be shared with students via Canvas,
   a. The student has the right to view model test questions or practice tests or representative past tests including the corresponding model answers and assessment standard before the actual test. In case a test is given for the first time, the Examiner has to seek for other means to inform the students about what they can expect in the test.
   b. The maximum duration of a test is 3 hours. Tests of longer duration have to be split in parts.
   c. Students shall be informed at the start of each study unit of:
      i. The duration of the test;
      ii. Whether books and/or notes or devices may be used during the test.
   d. Students shall be informed at the start of each test of:
      i. If applicable, the number of questions to be answered;
      ii. The weight of each question.
5) When a test or exam is held online by means of online surveillance[4] or online proctoring[5], the Examination Board may lay down further rules and conditions for online (proctored) testing.

[4] Camera-surveillance of student(s) during exams without recording via e.g. Canvas, Teams.

[5] Surveillance of student(s) using special proctoring software.

6) These further rules and conditions must comply with the General Data Protection Regulation (GDPR[6]), the Data Protection Impact Assessment (DPIA[7]) on proctoring and the EER.
7) Pursuant to Articles 12-14 of the GDPR, students must be informed before the use of online surveillance or online proctoring about the processing of their personal data.
8) Pursuant the DPIA
   a. in the event where no alternative exam method is reasonably possible, online surveillance or online proctoring can be used8.
   b. the retention period of the data is 30 days unless the examination board decides that the data needs to be maintained longer for a fraud investigation.
9) Results of exams, tests or components of tests have to be announced to the students, in any case via Osiris or via the Grade Centre of Canvas. The SIS is used for the registration of grades. Rights can only be derived from exam and test results that have been published via Osiris.
10) Test results are expressed in a grade with one decimal from 1.0 to 10.0 or in a Pass/Fail
11) Exam results of all study units are expressed in half grades from 1.0 up to and including 5.0 and from 6.0 up to and including 10.0 whereby:
   c. Grades will only be rounded in the last phase of the assessment of the study unit.
   d. The rounding is done in accordance with the following scheme:

Grade range (not rounded)	Grade (not rounded)	Grade (rounded)
Grade < 5 or Grade >= 6	Grade < n.25 n.25 <= Grade < n.75 n.75 <= Grade < (n+1)	n.0 n.5 (n+1).0
5 <= Grade < 6	5 <= Grade < 5.5 5.5 <= Grade < 6	5.0 6.0

   e. Exam grades obtained before 1 September 2020 will remain expressed in a whole grade.
12) The definitions of the grades for exams are as follows:

Grade:	Qualification:
10.0	Excellent
9.0 and 9.5	Very good
8.0 and 8.5	Good
7.0 and 7.5	Very satisfactory
6.0 and 6.5	Satisfactory
5.0	Almost satisfactory
4.0 and 4.5	Unsatisfactory
3.0 and 3.5	Very unsatisfactory
2.0 and 2.5	Poor
1.0 and 1.5	Very poor

13) Test and exam results are determined by the responsible Examiner.
14) EC are awarded for the study unit if an exam has been passed. EC are awarded to a study unit with a fail exam grade in case the student has passed the final examination of the Master's programme or PGD course according to the requirements as defined by the programme in this document. No EC are awarded for parts of study units and/or individual tests passed.
15) If a student receives more than one authorized test result for the same test, the highest obtained result applies.

[6] The text of the GDPR can be found here: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679

[7] The DPIA is an instrument to point out privacy risks of a processing operation to be able to take measures to mitigate those risks. In this case it is done for proctoring. Among a lot of other things, it describes the rights of the data subjects (in this case: the students) and the context in which proctoring can be used. https://www.utwente.nl/remote-exams/students/proctoring/dpia-proctoring.pdf

[8] This means online proctoring can be used for a few students as well as for all students.

16) For the calculation of the average grade of all exams the grades are weighted conform their study load. Those parts of the Master's programme that were granted exemption are not considered for determination of the average grade.
17) If the Examination Board wants one of its members (or an observer representing the Examination Board) to be present during a test, it notifies the Examiner and the student(s) at least one working day prior to the test.

Art. 4.2 Organisation of study units

Each study unit has a Coordinator and an Examiner. This may be the same person. The Coordinator is appointed by the Programme Director. The Examiner is nominated by the Programme Director. The nominated Examiner is appointed by the Examination Board.

Art 4.3 Registering for study units and tests

1) Students enrolled in a Master's programme or PGD course at the Faculty ITC or in a Joint Education Programme have to be registered in the SIS for each study unit that is part of the programme or course.
2) Students are automatically registered for the first opportunities of the tests offered in the study units they are registered for in the SIS.
3) Students have to register for later test opportunities with the responsible examiner. Students who did not register for a test opportunity are not admitted to participate in that test opportunity.
4) Students who intend to not take a test for which they have been (automatically) registered, have to unregister for the test with the Examiner.
5) Students have to request their MSc Research exam at least five weeks in advance.

Art. 4.4 Test plan

1) The way in which the tests lead to the exam result is laid down in a Test Plan for each study unit.
2) The Test Plan is determined by the Examiner.
3) The Test Plan must at least include the following:
   f. Relationship between learning outcomes, and exam;
   g. Mandatory and recommended study material;
   h. At which moment tests take place and in what format;
   i. The weighting of the various tests;
   j. If applicable, the deviation from the standard validity period of test results (Article 4.9).
4) In case the test plan includes a minimum grade for a specific test, this cannot be higher than a 5.5.
5) The Test Plan must have been published in the study guide (at least items 3b, 3c (format), and 3e) before the start of the academic year and in more detail (3a to 3e) on Canvas at the start of the study unit.
6) In special cases, the Examiner can make changes to the Test Plan during a study unit in progress. These changes must be approved by the Programme Director.
   a. Changes to the Test Plan are only made in consultation with the Programme Manager and after advice of the Examination Board. The Examiner informs the students of these changes as soon as possible.
   b. In case a change to a Test Plan only implies the rescheduling of tests or parts thereof, consultation with the Programme Manager suffices. Next, the Programme Director informs the Examination Board of the programme management's approval to adjust the test plan.
   c. Changes to the Test Plan should not be detrimental to the performance of the students.

Art. 4.5 Test opportunities

1) For each test, two test opportunities are offered per academic year. The student has to be informed on the test format and date of these two opportunities at the start of the study unit. The dates for second test opportunities are set by the examiners. The level of the test opportunities should be equal.

2) If a test consists of a practical exercise that cannot be repeated or has a study load of more than 40 hours, the Examiner can decide to offer one test opportunity per academic year. A practical exercise, as described in Article 7.13, Paragraph 2d of the WHW, is a study unit or part of a study unit, whereby the emphasis is placed on the student's activities, such as:
   - carrying out literature research, an assignment or a preliminary design, writing a Thesis, article or 'position paper', or giving a presentation in public;
   - carrying out a design or research assignment, participating in practicals, practicing skills;
   - following an internship, taking part in fieldwork or an excursion;
   - participating in other educational activities deemed as necessary and aimed at achieving the required skills;
3) For tests, for which the examiner has provided feedback, the second test opportunity can be offered as a 'repair option'. A repair option implies taking the same or a very similar test for a maximum grade of 6.0. For tests with a 'repair option' , no third test opportunity is allowed.
4) In exceptional cases, the Examination Board can deviate from the number of times and the manner in which tests can be taken.
5) The Examination Board can decide to grant an additional test opportunity for: 1) one test of the first year, that hinders the admission to the MSc Research of the Master's programme, or 2) one test that hinders the admission to the Final Assignment of the PGD course or the graduation from the PGD course; and for 3) one test of the second year, that hinders the graduation from the Master's programme. The procedure for a request is described in the Rules and Regulations of the Examination Board.
6) In case the student is not able to attend or complete a test due to health or other personal problems, this must be communicated to the Examiner in writing before the start of the test or the submission deadline. Attending or handing in a test is always counted as a test attempt.
7) The Examiner checks if a valid reason with supporting evidence for not attending a test opportunity has been reported by the student. If the validity of the reason for not attending the test opportunity is confirmed by the Programme Manager and Article 4.5-6 has been followed, the student can apply in writing for a new test opportunity or extension of the deadline for submission of the test to the Examiner. This new test opportunity is considered a replacement of the not attended test opportunity.
8) A student not attending a scheduled test for which he/she is registered, not completing a practical exercise or not submitting the required work within the specified time, without prior written communication to the Examiner or without a valid reason for absence, will not receive a grade and forfeit a test opportunity.
9) The right to use a test opportunity exists only when the student is registered in the SIS as a student.

Art. 4.6 Assessment of MSc Research

1) The criteria and procedure for the MSc Research proposal test are drawn up in a separate document, called Instructions for the Proposal Assessment Board (PAB) which is available via the Faculty ITC Intranet.
2) The criteria and procedure for the MSc Research exam are drawn up in a separate document, called Instructions for the Thesis Assessment Board (TAB) which is available via the Faculty ITC Intranet.

Art. 4.7 Oral tests

1) At least two faculty members must be present at an oral test.
2) Proposal and Thesis defences are conducted in public, unless the Examination Board has specified otherwise in a particular case, possibly at the request of the Chair of the Assessment Board or the student.

Art. 4.8 Term for assessment

1) Within 15 calendar days after a test, the test result is communicated to the individual students.

2) In case of an oral test, the Examiner notifies the student within one working day of the result. This provision does not apply if multiple students take the same oral test in the same period. In that case, the Examiner determines the result within one week after the conclusion of the oral tests.
3) Within 15 calendar days after the completion of a study unit, the exam result is communicated to the individual student. In exceptional circumstances, the Programme Manager can grant a maximum of 7 calendar days extension of this period at request of the responsible Examiner. The students are informed of this extension as soon as possible.
4) Should the Examiner not be able to meet the extended deadline due to exceptional circumstances, then the Examiner reports this with reasons to the Programme Director. If the Examiner cannot meet its obligations within a foreseeable time, the Programme Director will request the Examination Board to assign another Examiner to ascertain .the result and the students are informed of the delay as soon as possible.
5) The results of a first test opportunity have to be published at least 15 calendar days before a second opportunity is offered for the same test.

Art. 4.9 Period of validity

1) The validity period of Exam results can be limited by the Examination Board if the examined knowledge and/or skills are demonstrable outdated.
2) Test results are valid for a period of 24 months. Exceptions to this rule must be formulated in the Test Plan (see Article 4.4-3-e).

Art 4.10 Right of discussion and review

1) The student is entitled to a discussion, including review, of the results of a test with the Examiner, where the Examiner justifies the assessment. If no collective discussion of the results is held, the student may submit a request for an individual discussion of the results to the Examiner within 15 calendar days of publication of the test results. The discussion must take place at the latest five weeks after the publication of the results of the test, in the presence of the Examiner or a replacement authorized by the Examiner.
2) Students have the right of access to their work for a period of two years after the test.
3) The student may not make duplicates or copies of the test materials in any way during the inspection of the student's work, unless specified differently by the responsible Examiner.

Art. 4.11 Retention period for tests

1) Assessments, such as the questions, answers and the assessed work of written tests, will be retained for a period of 2 years in the administration of Faculty ITC-BOOZ.
2) The retention period for Master's theses, including their assessments, is at least seven years. All theses are stored in the document archiving system of the Faculty ITC.
3) The library asks students for permission to make their full text Thesis publicly available on the world wide web via the University systems. In case the publication of the Thesis is hindered by confidentiality of data, the student could remove specific parts of the submitted Thesis after receiving consent of the Programme Director.

Art. 4.12 Evaluation of education

1) The Programme Director is responsible for monitoring the quality of the programme
2) The Programme Director is responsible for evaluating the programme.
3) The way evaluation is organised is described in the quality assurance procedures on the Faculty ITC Intranet.

SECTION 5: EXAMINATION

Art. 5.1 Examination Board

1) The Faculty Board installs an Examination Board for each programme or group of programmes (WHW, Articles 7.12 and 7.12a).

2) The Faculty Board
   a. appoints the members of the Examination Board on the basis of their expertise in the domain of the relevant Master's programme or group of programmes (WHW, Article 7.12a par. 1);
   b. consults the members of the relevant Examination Board before proceeding to appoint a member (WHW, Article 7.12a par 4);
   c. ensures that the independent and professional functioning of the Examination Board is sufficiently warranted (WHW, Article 7.12a par 2).
3) In appointing the members of the Examination Board, the Faculty Board ensures that:
   a. at least one member is involved as a teacher in the relevant Master's programme or in one of the programmes belonging to the relevant group of programmes;
   b. members of the University Board and other persons with financial responsibilities within the university are excluded;
   c. at least one member comes from outside the Master's programme or group of programmes in which the programme belongs.
4) Examination Boards are themselves responsible, without further consultation, for setting the regulations and guidelines for Examiners, exams and final examinations (WHW, Article 7.12b). These are set down in a separate document entitled Rules and Regulations of the Examination Board.
5) The Examination Board drafts an annual report of its activities. The Examination Board issues the report to the Faculty Board (WHW, Article 7.12b par. 5)

Art. 5.2 Master's graduation request and Final Examination

1) The criteria for the award of an MSc Degree are:
   a. The average of all exams must be at least 6.00.
   b. No more than 12 EC worth of exams may have a grade below 6 and no grade below 5 is allowed.
   c. The MSc Research exam in the Master's programme must have a grade of at least 6.
2) Students can request their Master's Final Examination once they fulfil the criteria for the award of an MSc degree, by submitting a graduation request to the Education Support Office within Faculty ITC-BOOZ.
3) Only results of study units that are part of the formal curriculum of the Master's programme are included in the calculation of the average and counted for the number of grades below 6 and below 5. Therefore, results of a study unit that is taken in addition to the formal curriculum or in exchange for a study unit of the formal curriculum for which exemption was given, will not be included. However, a study unit that was taken in exchange because of a reason other than exemption, is considered as part of the formal curriculum. The weight of an exam in the calculation of the average depends on the number of EC assigned to the study unit.
5) If the Examination Board declares that the student has met the final examination requirements, the student is invited to accept the Diploma and Diploma supplement.
6) The student may submit a motivated request in writing to the Examination Board to postpone declaring the final examination as 'successfully passed' and also to postpone the presentation of the Diploma. The student must indicate the desired length of postponement in this request.
7) The details of the stipulation in Article 5.2-3 are included by the Examination Board in the Rules and Regulations of the Examination Board.
8) If the student has requested postponement on the basis of Article 5.2-6 the final examination date is the date following postponement on which the Examination Board has decided to declare the student to have successfully passed the final examination.

Art. 5.3 Master's graduation with the distinction Cum Laude

1) To be entitled to receive a MSc Degree Cum Laude the average grade, as defined in 4.1-16, must be 8.00 or above. No grades below 7.0 are allowed. The MSc Thesis must have a grade of 9.0 or higher.

2) Only students who have fulfilled the above and have attended the common courses of their Master's programme (including common courses offered at partner universities of Joint Education Programmes) are entitled to receive their MSc Degree Cum Laude.
3) A Cum Laude MSc Degree is only awarded after discussion by the Examination Board. In special cases, the Examination Board can deviate from the requirements for a Cum Laude MSc Degree.
4) Students who obtained 28 EC for courses that are not graded are not entitled to receive an MSc Degree Cum Laude.

Art. 5.4 MSc Degree

1) Students who have successfully met all requirements for the final examination of the Master's programme are awarded a Master of Science degree.
2) The awarded MSc Degree is stated on the Diploma.

Art. 5.5 Master's Diploma[9]

1) The Examination Board grants a Diploma as proof that the student has successfully passed the final examination of the Master's programme. The Diploma is signed by the chair or the vice chair of the Examination Board.
2) The Diploma states the following (WHW, Article 7.11):
   a. The student's name and date of birth;
   b. The name of the institution and the Master's programme as referred to in the higher education register (CROHO), referred to in Article 6.13 of the WHW;
   c. The graduation date;
   d. The degree awarded (WHW Article 7.10a);
   e. Where applicable, also stating a specialisation taken
   f. The date on which the Master's programme was most recently accredited.
3) If the Examination Board has granted the student the distinction Cum Laude, this is stated on the Diploma.
4) The International Diploma Supplement is appended to the Diploma (WHW, Article 7.11, Paragraph 4). The purpose of the supplement is to provide information on the nature and content of the completed Master's programme, partly with a view to the international recognition of programmes. This supplement complies with the European standard and contains the following information:
   a. The name of the Master's programme and the name of the university;
   b. The fact that it is a Master's programme in academic education;
   c. A description of the content of the Master's programme and the specialisation;
   d. The study load of the Master's programme;
   e. The exams and their grading;
   f. Additional exams which are not part of the final examination;
   g. Average score.
5) Students who have passed at least one exam, and to whom no Diploma has been granted, as referred to in Article 5.5-1, are provided with a Certificate and Course Record from the Examination Board stating at least the passed exams and the grades obtained (WHW, Article 7.11, Paragraph 5). The student can choose whether to exclude failed exams from the Course Record.
6) The Diploma and Diploma Supplement are issued only once; it is possible to request a certified copy via the Faculty ITC website.
7) The Rules and Regulations for Certification in Faculty ITC courses are described in a separate document.

[9] The awarding of certificates for the PGD course is described in Appendix 3.

SECTION 6: STUDENT PERFORMANCE

Art. 6.1 Study progress

1) The student can request a certified study progress overview if required.
2) Where a Study Adviser is of the opinion that a students' progress gives cause for concern, the student shall be informed of the situation. .
3) Where a student's performance is such that the student is unlikely to obtain a MSc degree or PGD Certificate without a significant improvement in performance, the student shall be informed in writing by the Programme Director.

Art. 6.2 Study advice and mentoring

1) The Study Adviser is responsible for academic student counselling on well-being and study opportunities in or outside the Master's programme.
2) Each student is appointed a Mentor, who informally offers advice on study-related matters. Student Affairs provides students with non-academic counselling.
3) The Study Adviser keeps a record of any agreements made with the student in the SIS.

SECTION 7: STUDYING WITH A FUNCTIONAL IMPAIRMENT

Art. 7.1 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) Based on a discussion with the Study Adviser, the student will be consulted to determine which adjustments as referred to in Article 2 of the Equal Treatment Act on the basis of a Handicap/Chronic Illness (WGB h/cz) are deemed most effective for this student.
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's intended learning outcomes must be guaranteed when implementing changes.
4) On the basis of the interview described in Article 7.1-2, the student submits a written application for the facilities in consultation with the Study Adviser. The application is submitted to the Faculty Board, preferably immediately after admission to the programme or course.
5) The application is supported by documents that can reasonably be requested to assess the application such as a certificate from a doctor or psychologist listed in the register under the Individual Professions Act (BIG), or, in case of dyslexia, from a BIG-registered health care psychologist or remedial educationalist.
6) The Faculty Board makes a decision, within twenty working days of receipt of the application or earlier if the urgency of the application necessitates it, on the validity of the application as described in Article 7.1-4, and informs the student and the Study Adviser of the decision.
7) The Study Adviser ensures that the relevant parties involved are informed in due time of the facilities granted to the student with a functional impairment.
8) Should the Faculty Board turn down the application in full or in part, the Faculty Board informs the student of the justification for this rejection and the possibilities for lodging an objection. Objections must be submitted in writing within six weeks of the decision being announced to the relevant party, at the Complaints Desk at Student Services.
9) Should extra facilities be granted, it is stated for what term this grant will apply. The applicant and the Study Adviser evaluate the facilities before the end of this term. During this evaluation, the parties discuss the effectiveness of the facilities provided and whether they should be continued.
10) In the case of dyslexia, additional time for a test may be granted, with a maximum of 15 minutes for every hour on the clock.
11) The Faculty Board has delegated the processing of the applications referred to in Articles 7.1-4 up till and including 7.1-8 to the Programme Director.

SECTION 8: AMENDMENTS, TRANSITIONAL ARRANGEMENTS, APPEALS AND OBJECTIONS

Art. 8.1 Conflicts with the regulations

1) If other additional regulations and/or provisions pertaining to teaching and/or exams conflict with these Education and Examination Regulations, the present Education and Examination Regulations take precedence.
2) For the purposes of international cooperation with higher institutions abroad, the arrangements between the Faculty ITC and foreign institutions may differ from the regulations of this EER. Such arrangements have to be approved by the relevant bodies (EB, PC and FC), and are announced as quickly as possible at the Faculty ITC website.

Art. 8.2 Administrative errors

If, following the publication of a test result, a list of grades, or an overview of a student's progress, an apparent 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 with rectification of the error.

Art. 8.3 Amendments to the regulations

1) Substantive amendments to these Education and Examination Regulations are determined by the Faculty Board in a separate decision.
2) In principle, substantive amendments to these Regulations do not apply to the students in the current academic programme. Substantive amendments to these Regulations may apply to the current academic programme if the interests of the students are not prejudiced, or in circumstances beyond one's control. The Faculty Board decides on this.
3) Amendments to these Regulations have no effect on earlier decisions of the Examination Board.

Art. 8.4 Transitional arrangement

1) In the case of amendments to the Education and Examination Regulations, the Faculty Board may decide on a transitional arrangement.
2) The transitional arrangement is published on the website of the Master's programme.
3) Points of departure for a transitional arrangement if a study programme is changed:
   a. Changes to a study programme are published before the start of the Master's programme in which they are to apply.
   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 Master's programme, continue to be part of the student's study programme. The study programme as most recently approved by the Faculty Board serves as the basis for establishing the results of the Master's final examination.
4) The transitional arrangement requires the approval of the Examination Board pursuant to the provisions of Article 8.4-3.
5) In exceptional cases, and if this is to the student's advantage, the Examination Board may allow a deviation from the number of times and the way in which tests may be taken for a study unit that is no longer included in the programme or course.
6) Programme specific transitional arrangements are included in the regulations pertaining to the programme.

Art. 8.5 Review of the Education and Examination Regulations

1) The Faculty Board is responsible for the regular review 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) Before approval of the Education and Examination Regulations, in accordance with Article 9.18 and 9.38 of the WHW, the Programme Committee and Faculty Council each give their consent to specific parts of the Education and Examination Regulations.
3) For other topics, also specified in the WHW, the Faculty Board has to consult the Programme Committee for advice and the Faculty Council can offer their advice.

4) The Programme Committee assesses the implementation of the EER on a yearly basis.

Art. 8.6 Complaints

1) Student complaints are first dealt with by the Programme Manager.
2) The Programme Manager can be contacted for the following types of complaints:
   a. Disagreement with the format or procedure of tests or exams (e.g. by an Examiner, Proposal Assessment Board, Thesis Assessment Board or Final Assignment Assessment Board);
   b. Not receiving the quality of Thesis /Final Assignment supervision required in the regulations;
   c. Other study hindering matters.
3) If the student is not satisfied with the decision of the Programme Manager, the student has a right of complaint with the Examination Board when the disagreement is related to the format or procedure of a test, or with the Programme Director for all other issues.
4) In case of a complaint with the Programme Director, the Programme Director can request all relevant materials and correspondence and may hear all parties involved (including the Programme Manager) for relevant information, before the final decision is taken and communicated in writing to the student. In case the complaint is supported, the Programme Director proposes remedial actions. If the complaint of the student is rejected, the reason is described.
5) The Programme Manager and Programme Director should deal with the complaint within two weeks of receipt of the complaint.
6) Complaints must be made in writing. The Programme Manager or Programme Director responds in writing.
7) A complaint is only considered if the complaint has been made before accepting the final certificate /diploma for a course or programme.
8) Regulations on complaints with the Examination Board are published in the Rules and Regulations of the Examination Board.

Art. 8.7 Appeal and objections

An appeal against a decision made by the Examination Board or an Examiner, and 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 within six weeks after notification of the decision.

Art. 8.8 Hardship clause

In the event of demonstrable, considerable unreasonableness or unfairness or force majeure (i.e. beyond the control of the university), the Examination Board can permit departures from the provisions of these Regulations.

Art. 8.9 Publication

The Education and Examination Regulations and the Rules and Regulations of the Examination Board are published via the Faculty ITC website.

Art. 8.10 Date of commencement

These Regulations take effect on 1 September 2023 and supersede all previous Regulations.

PROGRAMME-SPECIFIC PARTS

part 1: REGULATIONS PERTAINING TO THE MASTER'S PROGRAMME GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

A. ADMISSION

Academic level and background

Applicants for the Master's programme should have a Bachelor degree or equivalent from a recognised university in a discipline related to the Master's programme, preferably combined with working experience in a relevant field.

English language

As all education at the Faculty ITC is given in English, proficiency in the English language is a prerequisite. If students are a national of one of the countries on the list at the Faculty ITC website, they are exempted from an English language test. The minimum requirements for the English language tests are also published at this Faculty ITC website.

B. STUDY LOAD

The duration of the Master's programmes is 2 academic years, with a total study load of 120 EC.

C. PROGRAMME FORMAT

The Faculty ITC offers the Master's programme in different modes of learning:

1) In fulltime face to face mode at the Faculty ITC;
2) In fulltime face to face mode at the Faculty ITC and at a partner university or institute (Joint Education Programme);
3) In fulltime and part-time distance mode;
4) A mix of modes 1 to 3.

D. SPECIALISATIONS

The following specialisations are available:

- Applied Remote Sensing for Earth Sciences (ARS);
- Geoinformatics (GFM);
- Geo-information Management for Land Administration (GIMLA);
- Natural Hazards and Disaster Risk Reduction (NHR);
- Natural Resources Management (NRM);
- Urban Planning and Management (UPM);
- Water Resources and Environmental Management (WREM).

It is also possible to follow a free specialisation of 28 EC, which can be composed by the student, in consultation with the Study Adviser, from the different specialisation courses offered in the Master's programme. In order to select a free specialisation, the student must academically qualify to be admitted to at least two of the seven specialisations. The Programme Manager must approve this free specialisation.

E. PROGRAMME LEARNING OUTCOMES

At successful completion of the Master's programme, the student is able to:

Domain/ Academic field

1. Identify and explain principles, concepts, methods and techniques relevant for geo-information processing and earth observation.
2. Analyse problems and cases from a (geo-)spatial perspective.
3. Use and design models to simulate (or: study) processes in the system earth with a spatial component.
4. Apply principles, concepts, methods and techniques in the context of system earth, the user and an application domain to solve scientific and practical problems.
5. Independently design and carry out research in the domain according to scientific quality standards.

Scientific

6. Analyse issues in an academic manner and formulate judgments based on this.
7. Analyse scientific and practical domain problems in a systematic manner and develop scientifically valid solutions for these problems in a societal context.
8. Communicate both orally and in writing on findings of research work to specialists and non-specialists.
9. Explore the temporal and social context of geo-information science and technology and be able to integrate these insights in the scientific work.

Internationalization

10. Explain and contrast cultural and contextual differences that influence the collection, classification and visualization of spatial information.
11. Operate professionally and ethically in a multi-cultural environment.

General

12. Critically reflect on own and other's work.
13. Study in a manner that is largely self-directed and autonomous.

F. REQUIRED SEQUENCE OF EXAMS

1) The sequence of the academic years is fixed.
2) The sequence of the study units in the first academic year is fixed and choices are limited by the entry requirements of the courses as defined in the study guide.
3) The student can only start an internship as part of the individual study space of the second academic year, when the assessment of the MSc research proposal in the academic and research phase was positive.
4) The student has to make a study plan for the second academic year taking into account the rules for admission to the MSc Research, the entry requirements of selected courses, the requirements of credit transfer and exemption for courses attended outside the Faculty ITC and the requirements for the final examination.
5) The rules for deviations from this sequence are described in Article 3.5 of the Common Elements of the EER.

G. CONTENT AND EXAMS

1) The Master’s programme is organized into 2 academic years with each 4 quartiles.
2) Tests are scheduled in the exam weeks, according to the academic calendar of the university, unless communicated otherwise.
3) During the programme, the student has to make choices in the courses to follow and the focus of the MSc Research:
   - Confirmation of the chosen specialisation;
   - If applicable, submission of plans for a free specialisation to the Programme Manager;
   - Submission of choices for elective courses in Quartile 4;

- The choice of a MSc Research topic;
- Study plan for academic year 2;

4) The dates for these choices will be communicated to the student at the start of the Master's programme.
5) A Master's student who is not admitted to the MSc Research phase of the M-GEO programme or has failed the MSc Research exam of the M-GEO, but has passed the study units of Quartiles 1, 2 and 3, the Specialisation study unit in Quartile 4, and Academic skills may qualify for a PGD Certificate under conditions detailed in Appendix 3, section L.2 of this document.
6) The free study space is 22 EC, scheduled as 7 EC for the elective course in Quartile 4 of the first year and 15 EC for the Individual study programme in the second year.
7) The following table shows the general setup of the curriculum:

Academic year 1 (60EC)			
Quartile 1	**Quartile 2**	**Quartile 3**	**Quartile 4**
Common courses (14 EC)	Specialisation course (7 EC)	Common course (7 EC)	Specialisation course (7 EC)
	Specialisation course (7EC)	Specialisation course (7 EC)	Elective course (7 EC)
Common course (4 EC)			

Academic year 2 (60EC)			
Quartile 1	**Quartile 2**	**Quartile 3**	**Quartile 4**
MSc Research (45 EC)			
Individual study programme (15 EC) The student can make a choice out of elective courses offered at the Faculty ITC or courses offered elsewhere at UT or at other Dutch Universities.			

Detailed information about the content of individual courses, their duration and their study load, can be found in the study guide.

H. COHERENCE AND DIDACTIC CONCEPT

The academic profile of the Master's programme puts strong emphasis on the scientific discipline, a scientific approach, basic intellectual skills, co-operation and communication and the temporal and social context of research. The emphasis on doing research and/or designing or developing new methods or techniques depends on the application domain.
Multi-disciplinary research is an important focus for the Master's programme because (applied) research in practice seldom concerns one discipline but is more likely to be multidisciplinary. Students have to be prepared for that. Starting with a sound basis they are brought into learning situations in which students from different specialisations work together. It should be noted that much of the research at the Faculty ITC is already multidisciplinary in nature. This is evident in the wide scope of expertise within departments, and the common denominator to carry out applied research contributing towards development related issues as specified in the Faculty ITC's mission. In their profession, the graduates have to apply knowledge and skills independently. The Master's programme is therefore focused on gradually handing over the control of the learning process to the student. At the end of the first academic year the student has to make choices regarding the MSc Research to conduct and the elective courses to follow in the second academic year. Students take the lead in their learning process by developing their own learning plan within the Master's programme framework and guidelines. The mentor provides guidance in this development.

I. PRACTICAL COMPONENTS OF THE PROGRAMME

I.1 Practical exercises

The programme contains a large amount of practical exercises which are graded. Please look at the study guide for details of these exercises at study unit level.

I.2 Internship project

1) The (optional) internship project in the second academic year of study aims to give evidence that the student has gained an MSc level work experience.
2) Students are allowed to start their internship project once they are admitted to the MSc research phase (see section J).
3) An internship proposal needs to be approved by the Examiner before the actual internship can start.
4) The internship is assessed through the internship report by the Examiner.

J. MSC RESEARCH

J.1 Admission

a. The MSc Research phase includes: under supervision MSc research proposal and thesis writing; research activities, such as data collection or fieldwork; proposal and thesis defence

1) Students can be admitted to the MSc Research phase if:
   a. At least 46 EC worth of exams of academic year 1 (including 4 EC Academic skills) have been earned;
   b. A complete study plan for the second academic year is handed in.
   c. The MSc Research topic is approved by the Research Theme Leader;
2) Students who are not admitted to the MSc Research phase:
   a. Are allowed to follow the courses of the Master's programme;
   b. Are **not** allowed to defend their MSc Research proposal or thesis.

J.2 Assessment

The MSc Research focuses on individual research. The research requires that the Master's student carries out the research and reports on progress to the supervisors according to an agreed schedule for the research and preparation of the Thesis. The research work is assessed on three occasions:

1) The detailed research proposal and presentation. Assessed as either Pass or Fail. The successful defence of the MSc Research proposal is necessary for continuing with the actual research work and thesis writing.
2) The mid-term presentation. Formative assessment, no grade is given. The student receives feedback from the chair of the theme of the research topic (or delegate) and at least one of the Supervisors. In the case of weak performance, the student receives a written warning on behalf of the Study Adviser.
3) MSc Research exam: Assessed with a pass grade (6.0 to 10.0) or a Fail. The assessment of the Thesis and its oral defence.

In addition to these formal assessments, the student receives feedback on the student's performance from the supervisors throughout the MSc Research.

J.3 Conditions

1) In case the Thesis is not judged ready to be submitted within a period of 12 months after the date of MSc research proposal approval, the supervisor must assess whether the student has to adjust the MSc Research topic to the state of the art of the field. The calculation of these months only includes the months in which the student is registered as a student at the Faculty ITC for the Master's programme. During periods where the student is not registered as a student, he/she will not receive supervision. When the student returns after a period of being not registered as a student, the MSc proposal and/or thesis have to be checked for not being outdated by the supervisors.
2) The Thesis, in general 40-60 pages of text (15,000 to 20,000 words, excluding appendices) and presented in the Faculty ITC format for Theses, shall constitute an ordered, logical and critical description of the research and should afford evidence of competence in the scientific discipline, knowledge of relevant literature, the ability to do independent research, and reflect critically on the research process and results.

3) The Thesis may describe work done in conjunction with the MSc Supervisor or any other person, but the extent of the student's personal contribution must be certified by the MSc Supervisor concerned.
4) With the explicit approval of the MSc Supervisor, a student may be permitted to incorporate in the Thesis a limited amount of unpublished work undertaken by the student prior to the start of the research. A student may not incorporate in the Thesis material which has been submitted for achieving the award of a degree from any other educational institution, unless a formal agreement has been established with a partner university as part of a Joint Education Programme leading to a double degree.

J.4 Supervision

1) The MSc Supervisors are recommended by the MSc Research Coordinator in consultation with the Research Theme Leader and the Master student.
2) PhD researchers may be involved in the supervision as adviser and support the work of the MSc Supervisors. MSc Supervisors and advisers are appointed by the management team of the concerned scientific department.
3) The MSc Supervisors and, if applicable, the adviser shall divide the supervision tasks and make a supervision plan and meeting schedule together with the student.
4) The MSc Supervisor(s) shall at least:
   a. Guide the Master's student in the formulation of a detailed MSc Research proposal.
   b. Plan an initial meeting with the student in which they discuss their preferred style of supervision and make clear what they can expect from each other during the MSc Research.
   c. Provide general advice and guidance on the execution of the MSc Research.
   d. Provide feedback on draft written work.
   e. Where appropriate, forward any comments on the performance of the student to the MSc Research Coordinator when the progress of a student gives cause for concern so that action can be taken.
5) If a student does not receive the supervision as described in these regulations or faces any other conflict with his/her supervisor, the student should seek action from the Programme Manager.

J.5 MSc Research Proposal Test

1) The MSc Research Coordinator nominates, and the Examination Board appoints, a Proposal Assessment Board. This Board assesses the MSc Research proposal and its presentation by the student. The Proposal Assessment Board is accountable, via the Programme Director, to the Examination Board.
2) Each Proposal Assessment Board has three members a Faculty ITC professor or associate professor in a relevant discipline (chair, who cannot be one of the supervisors) and both supervisors. The MSc Research Coordinator has to be present as adviser. Involved PhD candidates may be present as advisers.
3) When the Proposal Assessment Board is of the opinion that the MSc research proposal is not sufficient, the student will receive a letter with extensive feedback and will have a second opportunity. In case the second opportunity of the proposal presentation is not satisfactory, the candidate will not be allowed to continue with the research work and Thesis writing.
4) The criteria and procedure for the MSc Research proposal test are drawn up in a separate document, called Instructions for the Proposal Assessment Board (PAB) which is available via the Faculty ITC Intranet.

J.6 Registration for the MSc Research exam

1) Students must ask the first supervisor for approval to defend their MSc Research before a Thesis Assessment Board.
2) Upon approval by the first supervisor, the student can request the MSc Research exam with the Education Support Office. This request must be made at least five weeks before the envisioned exam date.

3) The student must submit a well-organized copy of all digital files associated with the MSc Research work, in accordance with the Faculty ITC data management policy, at least two weeks before the exam date.
4) When work has been done in cooperation with others, the supervisor must submit a written statement to the Thesis Assessment Board indicating the part of the work done by the student.

J.7 MSc Research Exam

1) For the MSc Research exam, the MSc Research Coordinator nominates and the Examination Board appoints a separate Thesis Assessment Board (TAB) for each student. The Thesis Assessment Board is, via the Programme Manager, accountable to the Examination Board.
   a. Each Thesis Assessment Board has at least three members: a Faculty ITC professor or associate professor in a relevant discipline (chair, who cannot be one of the supervisors), one of the supervisors, and an external examiner. When the Examination Board has agreed upon the TAB composition, all TAB members have voting rights. The involved PhD candidate may be present as adviser. The MSc Research Coordinator should be present as procedural adviser.
   b. Supervisors appointed in a PAB remain eligible for membership of the TAB of the same student if their employment at the Faculty ITC terminated after their appointment in the PAB.
   c. Preferably, the external Examiner comes from outside the Faculty ITC, often being an academic staff member of a university or a knowledge institute. In the remaining cases, the external Examiner comes from a scientific department of the Faculty ITC and has not played a major role in the students' Master's programme and research theme. External Examiners should not have been involved in the research of the student.
   d. The Thesis Assessment Board is chaired by the Faculty ITC (associate) professor. In exceptional cases a new chair can be appointed from outside the TAB.
2) The criteria and procedure for the MSc Research exam are drawn up in a separate document, called Instructions for the Thesis Assessment Board (TAB) which is available via the Faculty ITC Intranet.
3) On the basis of the MSc Research exam the Thesis Assessment Board takes one of the following decisions:
   a. The student has passed the MSc Research exam. A single grade is given.
   b. The student has not passed the MSc Research exam. The Fail grade is given. The student may re-submit the Thesis for a new exam, in accordance with article J.3.
4) No changes may be made in the Thesis after submission for the MSc Research exam, only an errata list may be added. Changes can only be made when the Thesis is to be re-examined by the Thesis Assessment Board.
5) The second opportunity of the MSc Research exam is graded by the Thesis Assessment Board. In any circumstance, it is not possible to have a third opportunity of the MSc Research exam.

J.8 Extension of the MSc Research period

In special cases, extension of the MSc Research beyond the maximum period (Article J.3) without having to update the MSc research proposal, can be requested with the Examination Board. The procedure for requests is described in the Rules and Regulations of the Examination Board.

K. JOINT EDUCATION PROGRAMMES

The following Joint Education Programmes are being offered in cooperation with partner universities and institutes within the Master's programme:

JEP-partners	Location	Programme title	Specialisation offered
Chang 'An University (CAU)	Xi'An, China	Geo-information Science and Earth Observation	All
Capital Normal University (CNU)	Beijing, China	Geo-information Science and Earth Observation for Water Resources and Environmental Management	All
Indian Institute for Remote Sensing (IIRS)	Dehradun, India	Geo-information Science and Earth Observation for Geoinformatics	GFM
Technical University Bandung (ITB)	Bandung, Indonesia	Development Planning and Infrastructure Development	UPM
Lund University, Universite Catholique de Louvain, Tartu University	Lund, Sweden; Louvain, Belgium; Tartu, Estonia	Geo-Information Science and Earth Observation for Environmental Modelling and Management (GEM)	NRM

For obtaining the University of Twente Master's Diploma, the Faculty ITC EER requirements have to be met during all courses, irrespective of the location where they are followed.

PART 2: REGULATIONS PERTAINING TO THE MASTER'S PROGRAMME SPATIAL ENGINEERING

A. ADMISSION

To be able to meet the learning outcomes of the Master's programme Spatial Engineering it is necessary that incoming students have a Bachelor's degree from a research university and knowledge at Bachelor level with courses that (directly) relate to at least 3 of the following topics:

- Water, weather and climate (hydrology, meteorology)
- Earth sciences (geo-engineering, geology, earth surface processes)
- Civil engineering (infrastructure, building, hydraulics, hard interventions)
- Spatial planning and governance (urban and or rural environments)
- Spatial data analysis and visualization (GIS, Remote Sensing)
- Software engineering

Students with a Bachelor's degree from a Dutch research university in the following fields are possibly directly admissible: Civil Engineering, Geo Engineering, Geographical Science, Earth Science Water, Agriculture sciences and Geographical Information Systems. All applications are judged on the basis of an individual CV and motivation letter.
As all education at the Faculty ITC is given in English, proficiency in the English language is a prerequisite. The requirements for the English language tests can also be found at the UT website.

Pre-Master's programme

1) A Pre-Master's programme is exclusively offered to students who don't comply with the entry requirements of the M-SE.
2) Bachelors from a Dutch University of Applied Sciences (HBO) in Civil Engineering, Geo Engineering, Geographical Science, Earth Science Water, Agriculture sciences and Geographical Information Systems or related subjects can be admitted to the Pre-Master's programme. All applications are judged on the basis of an individual CV and motivation letter.
3) The Pre-Master's programme consists of a selection of courses with an emphasis on academic, statistical and core knowledge and skills.
4) The Pre-Master's programme has a study load of 30 EC.
5) A student who successfully passes all courses in the agreed programme within twelve months after registration for the pre-master's programme is admitted to the Master's programme Spatial Engineering.

B. STUDY LOAD

The Master's programme Spatial Engineering has a total study load of 120 EC.

C. PROGRAMME FORMAT

The programme format is fulltime.

D. SPECIALISATIONS

Students in the Master's programme can design their own study path through the choice options in the programme as described in section F.

E. PROGRAMME LEARNING OUTCOMES

A Graduate of Spatial Engineering		
1.	Is an expert in integrated knowledge development of technical engineering, spatial information science and spatial planning for governance.	The graduate has a sufficient knowledge of the theory and principles of technical engineering and environmental processes, spatial information science and spatial planning and governance related to policy goals of resilience, sustainability and legitimacy. The graduate is capable of creating added value by combining the disciplines in analysis. The graduate can independently identify his/her knowledge gaps and can revise and extend his/her own knowledge through study.
2.	Does research in a purposeful and methodological way.	The graduate can independently develop new knowledge in a purposeful and methodical way while dealing with 'wicked' societal problems and take into account the system boundaries. He/she can contribute to scientific knowledge in the Spatial Engineering knowledge base by collecting, processing, analysing and visualising data to produce and validate information in a logical way. The graduate can assess research on its scientific value taking into account scientific quality issues.
3.	Can design context specific and appropriate interventions for sustainable development.	The graduate can design interventions and scenarios that balance possible solutions between technical possibilities and genuine interests of the parties involved. He/she can adapt and steer the design process taking into account changing external requirements and new information, involving stakeholders in various stages in this process. The graduate can evaluate and justify design decisions, in a systematic and reproducible manner.
4.	Has an academic approach to the development, justified use and validation of theories and models.	The graduate can compare, justify choices and identify possible improvements in state-of-the-art knowledge, theories and methods. He/she can use, develop and validate models; consciously choosing between different modelling techniques for spatiotemporal processes, while accounting for socio-environmental drivers. The graduate can evaluate the impact of scientific and quality issues on the suitability of interventions. He/she can document, reproduce and publish the results of research and design according to scientific standards.
5.	Is competent in reasoning, reflection, and judgment.	The graduate can reflect on his/her own arguments and decisions and adjust these on the basis of this reflection. The graduate can operationalise theoretical concepts and develop research questions. The graduate can analyse the completeness, uncertainty and lineage of data.

A Graduate of Spatial Engineering		
6.	Is competent in cooperation and communication.	The graduate can function in different disciplinary contexts; communicate on different levels and has awareness of different perspectives from different scientific backgrounds. He/she can engage effectively in productive teamwork in a variety of roles in diverse teams, applying project management methods. The graduate can convey information and ideas effectively using written, oral, visual and graphical tools. The graduate can present the results of scientific work, including the underlying knowledge, choices and considerations, to peers and to different audiences.
7.	Can work internationally as a global citizen and as an empathic engineer.	The graduate can evaluate the impact and sustainability of an intervention and/or design in various governance contexts. The graduate has professional skills and awareness of ethical values needed to work in international and multicultural teams and environments and as an empathic engineer who aspires to social justice.

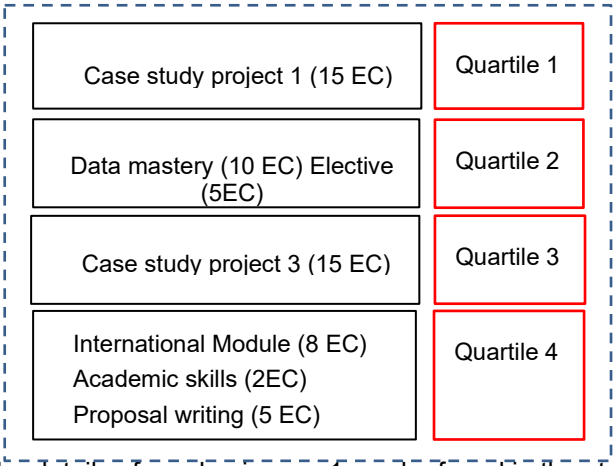
F. REQUIRED SEQUENCE OF EXAMS

1. The sequence of the academic years is fixed. The required sequence of exams is determined by the entrance requirements defined for the study units as described in the study guide:
2. The Case study projects build upon each other and have to be studied and assessed in the scheduled order;
3. The MSc Research can only be entered when the student has obtained the minimum amount of credits mentioned in art. J.1;
4. The student can only start the Internship when the proposal defence was a pass in the academic and research phase.
5. The rules for deviations from this sequence are described in Article 3.5 of the Common Elements of the EER.

G. PROGRAMME STRUCTURE

Academic year 1

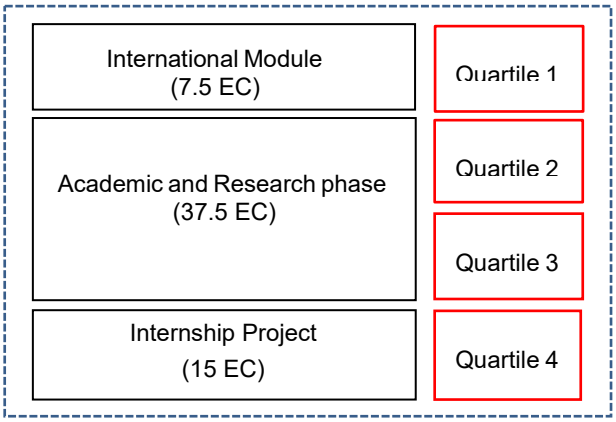
The first academic year of the Master's programme Spatial Engineering consists of two case study projects, a data mastery course, (restricted) electives and the international module:



The details of academic year 1 can be found in the study guide of the Master's programme Spatial Engineering.

Academic year 2 2023-2024

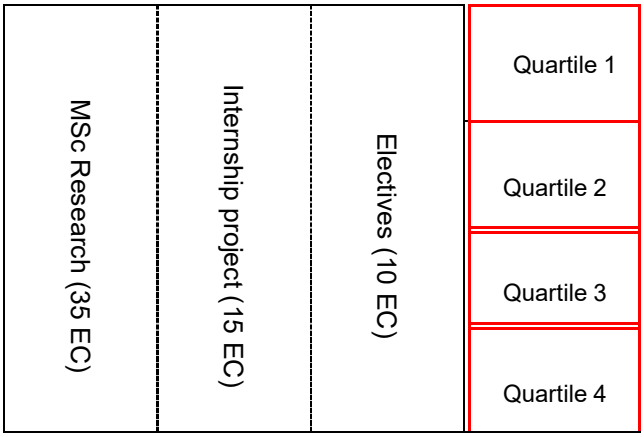
The content of the second academic year consists of an International Module which includes a field trip, the Academic and Research phase and an Internship project:



The details of academic year 2 can be found in the study guide of the Master's programme Spatial Engineering. The free study space is 14 EC, scheduled as 14 EC for elective courses in Quartile 4 of the first year.

Academic year 2 starting in academic year 2024-2025

The content of the second academic year consists of elective, the Research phase and an Internship project:



The details of academic year 2 can be found in the study guide of the Master's programme Spatial Engineering. The free study space for students starting the programme in 2023 is 17,5 EC, scheduled as 7,5 EC in the first year and 10 EC in the second year.

H. COHERENCE AND DIDACTIC CONCEPT

H.1 Project Led Education

The first academic year programme is a common programme with some room for choice topics. Students experience the main characteristics and skills of Project Led Education (PLE) in the open-ended team-based case studies which embrace both technology and the societal contexts. Students learn to work with each other under time pressure to define the end-point of their projects, define what information is required, how to construct an effective and coherent argument, and how to defend the collective result. Moreover, students will master a solid basis of the fundamentals of engineering and social science and the mutual relationships between them.

H.2 Integrated approach

Wicked problems require a multi- and transdisciplinary approach. Therefore the programme provides an integrated way of experiencing, observing, conceptualizing and experimenting with the various topics and workflow elements involved. The curriculum focusses on skills that allow one to operate between disciplines and conduct research in areas that do not fully belong to any particular discipline (inter-disciplinary), and further to skills that connect to particular stakeholders and user groups creating ways for co-learning and co-management in projects that are addressed (trans-disciplinary).

H.3 International classroom

The classroom of Spatial Engineering will contain a heterogeneous group of students with different cultural and academic backgrounds. Also the teaching faculty member stem from different cultures and professional backgrounds. This is in itself a very powerful learning environment where informal contacts amongst students and with faculty members will lead to creating awareness for cultural differences and the development of intercultural communication skills. However, the programme wants to go further than that. The power of this learning environment will be explicitly exploited to work on internationalization learning outcomes (see section E, Programme learning outcomes 6 and 7).

H.4 Student-centred learning and Personal Development Portfolio

The students control the learning process and choose the subjects related to the Spatial Engineering knowledge base. They take the lead in the learning process by developing their own plan for personal development within the Master's programme framework and guidelines. A Mentor provides the academic guidance for each student during the first academic year. The personal learning trajectory and results are kept by the student in a digital Personal Development Portfolio (PDP).The PDP contains the choices the student makes on study units to follow, specific knowledge gained in study units and project execution, development on skill learning lines, and reflection on project participation and process. The content of the PDP is, amongst others, used as a basis for the oral test in the case study projects (see Section I). Without a complete PDP that is approved by the Programme Manager, the student cannot participate in the oral test of the Case study project (see Section I.1).

H.5 Lifelong learning

Every person should have lifelong learning opportunities to acquire the knowledge and skills they need to fulfil their aspirations and contribute to their societies. The programme actively connects the learning environment to the scientific developments and the practical applications in the professional field. An Internship allows for the development of skills for workplace learning.

I. PRACTICAL COMPONENTS OF THE PROGRAMME

I.1 Case study project 1

The study unit consists of one project, with a study load of 15 EC. The exam consists of 4 tests: two group based tests and two individual tests. The balance between group-based and individual work is 40%-60%.
The four tests are as follows:

- Group based: Mid-term group assessment (15%) of the group's take on the wicked problem;

- Individual: Mid-term Core knowledge written test (20%) on theory as learned during the choice topics;
- Group based: Final report and group presentation (25%);
- Individual: Final Oral test of a maximum of 45 minutes duration (40%).

A second test opportunity for individual students for all tests is possible by re-taking the written test, or repeating the oral test

I.2 Case Study project 2

The study unit consists of one project, with a study load of 15 EC. The exam consists of:

- Group based: Mid-term group assessment (15%) of the group's take on the wicked problem;
- Group based: Final report and group presentation (25%);
- Individual: Final Oral test of a maximum of 45 minutes duration (60%).

A second test opportunity for individual students for all tests is possible by repeating the oral test.

I.3 Internship project

1) The internship project in the second academic year of study aims to give evidence that the student has gained an MSc level work experience. The internship project can have either a professional or a scientific/ research focus.
2) Students are only allowed to start their Internship project after they have passed the proposal defence of the academic and research phase (see section J).
3) An internship proposal needs to be approved by the Examiner before the actual internship can start.
4) The internship is assessed through the internship project plan, the internship report, the host evaluation form and reflection report by the Examiner,.

J. ACADEMIC AND RESEARCH PHASE

J.1 Admission

At least 46 EC worth of the study units of quartiles 1-4 must have been earned before the proposal defence at the beginning of the second year[10].
For students entering the Academic and Research phase in quartile 4 of the first year, at least 40 EC of quartiles 1 -3 and 2 EC academic skills course in quartile 4 of the first year must be earned before the proposal defence[11].

J.2 Assessment

The Academic and Research phase focuses on individual research. The research requires that the Master's student carries out the research and reports on progress to the Supervisors according to an agreed schedule for the research and preparation of the Thesis.

The research work and Thesis will be officially reviewed and/or assessed on four occasions:

1) The MSc Research proposal defence. Assessed as either Pass or Fail. A successful defence is necessary for continuing with the research work and thesis writing.
2) The mid-term presentation. Formative assessment, no grade is given. The student receives feedback from the Research Theme Leader (or delegate) and at least one of the Supervisors. In the case of weak performance, the student will receive a written warning on behalf of the Study Adviser.
3) Academic and Research phase exam request: Upon the approval of the passed MSc Research by the first supervisor the student requests the Academic and Research phase exam.

[10] Applies to students who started the Master's programme in 2022 or before

[11] Applies to students who start the Master's programme in 2023

4) The MSc Research exam: Assessed with a pass grade (6.0 to 10.0) or a Fail. The assessment of the Thesis and its oral defence.

In addition to these formal assessments, the student will receive feedback on the student's performance from the Supervisors throughout the Academic and Research phase.

J.3 Conditions

1) In case the Thesis is not judged ready to be submitted (see Section J.1) within a period of 12 months after the start of the Academic and Research phase, the first Supervisor must assess whether the student has to choose a new MSc Research topic and start the Academic and Research phase anew. The calculation of these months only includes the months in which the student is registered as a student at the Faculty ITC for the Master's programme. During periods where the student is not registered as a student, he/she will not receive supervision. When the student returns after a period of being not registered as a student, the MSc proposal/ and or thesis have to be checked for not being outdated by the supervisors.
2) The Thesis, in general 40-60 pages of text (15,000 to 20,000 words, excluding appendices) and presented in the Faculty ITC format for Theses shall constitute an ordered, logical and critical description of the research and should afford evidence of competence in the scientific discipline, knowledge of relevant literature, the ability to do independent research, and include critical reflection.
3) The Thesis may describe work done in conjunction with a Supervisor or any other person, but the extent of the student's personal contribution must be certified by the Supervisor concerned.
4) With the explicit approval of the Supervisor, a student may be permitted to incorporate in the Thesis a limited amount of unpublished work undertaken by the student prior to the start of the research. A student may not incorporate in the Thesis material which has been submitted for achieving the award of a degree from another educational institution, unless a formal agreement has been established with a partner university as part of a Joint Education Programme leading to a double degree.

J.4 Supervision

1) The MSc Supervisors are recommended by the MSc Research Coordinator in consultation with the Research Theme Leader and the Master student.
2) PhD researchers may be involved in the supervision as adviser and support the work of the MSc Supervisors. MSc Supervisors and advisers are appointed by the management team of the concerned scientific department.
3) The two MSc Supervisors and, if applicable, the adviser shall divide the supervision tasks and make a supervision plan and meeting schedule together with the student.
4) The student takes the lead in the planning and organisation of the Academic and Research phase. The student:
    a. Cannot be held responsible for results of an overarching research project , to which the MSc research contributes. The results or goals of a faculty ITC research project, which depends on MSc research input, cannot take precedence over the learning objectives of the MSc Research;
    b. Cannot choose a research topic that cannot be supervised by faculty members of the Faculty ITC;
    c. Chooses a research objective that is a multidisciplinary; research questions must include 2 out of the 3 core disciplines of Spatial Engineering.
5) The Supervisor(s):
    a. Guide the Master's student in the formulation of a detailed MSc Research proposal;
    b. Provide general advice and guidance on the execution of the MSc Research;
    c. Provide feedback on draft written work
    d. Inform the Programme Manager when the progress of a student gives cause for concern so that action can be taken.

6) If a student does not receive the supervision as described in these regulations, the student should seek action from the Programme Manager

J.5 MSc Research Proposal Test

1) The MSc Research Coordinator nominates, and the Examination Board appoints, a Proposal Assessment Board. This Board assesses the MSc Research proposal and its presentation by the student. The Proposal Assessment Board is accountable, via the Programme Director, to the Examination Board.
2) Each Proposal Assessment Board has three members: a Faculty ITC professor or associate professor in a relevant discipline (chair, who cannot be one of the supervisors), and both supervisors. The MSc Research Coordinator has to be present as adviser. Involved PhD candidates may be present as advisers.
3) When the Proposal Assessment Board is of the opinion that the MSc research proposal is not sufficient, the student will receive a letter with extensive feedback and will have a second opportunity. In case the second opportunity of the proposal presentation is not satisfactory, the candidate will not be allowed to continue with the research work and Thesis writing.
4) The criteria and procedure for the MSc Research proposal test are drawn up in a separate document, called Instructions for the Proposal Assessment Board (PAB) which is available via the Faculty ITC Intranet.

J.6 Registration for the Academic and Research Phase exam

1) Students must ask the first supervisor for approval to defend their MSc Research before a Thesis Assessment Board.
2) Upon approval by the first supervisor, the student can request the MSc Research exam with the Education Support Office. This request must be made at least five weeks before the envisioned exam date.
3) The student must submit a well-organized copy of all digital files associated with the MSc Research work, in accordance with the Faculty ITC data management policy, at least two weeks before the exam date.
4) When work has been done in cooperation with others, the supervisor must submit a written statement to the Thesis Assessment Board indicating the part of the work done by the student.

J.7 Academic and Research Phase Exam

1) For the Academic and Research Phase exam, the MSc Research Coordinator nominates and the Examination Board appoints a separate Thesis Assessment Board (TAB) for each student. The Thesis Assessment Board is, via the Programme Manager, accountable to the Examination Board.
   a. Each Thesis Assessment Board has at least three: a Faculty ITC professor or associate professor in a relevant discipline (chair, who cannot be one of the supervisors), one of the supervisors, and an external examiner.. When the Examination Board has agreed upon the TAB composition, all TAB members have voting rights. The involved PhD candidate may be present as adviser. The MSc Research Coordinator should be present as procedural adviser.
   b. Supervisors appointed in a PAB remain eligible for membership of the TAB of the same student if their employment at the Faculty ITC terminated after their appointment in the PAB.
   c. Preferably, the external Examiner comes from outside the Faculty ITC, often being an academic staff member of a university or a knowledge institute. In the remaining cases, the external Examiner comes from a scientific department of the Faculty ITC and has not played a major role in the students' Master's programme and research theme. External Examiners should not have been involved in the research of the student.
   d. The Thesis Assessment Board is chaired by the Faculty ITC (associate) professor. In exceptional cases a new chair can be appointed from outside the TAB.
2) The criteria and procedure for the Academic and Research Phase exam are drawn up in a separate document, called Instructions for the Thesis Assessment Board (TAB) which is available via the Faculty ITC Intranet.

3) On the basis of the Academic Research Phase exam the Thesis Assessment Board takes one of the following decisions:
   a. The student has passed the Academic and Research Phase exam. A single grade is given.
   b. The student has not passed the Academic and Research Phase exam. The Fail grade is given. The student may re-submit the Thesis for a new exam, in accordance with article J.3..
4) No changes may be made in the Thesis after submission for the Academic and Research Phase exam, only an errata list may be added. Changes can only be made when the Thesis is to be re-examined by the Thesis Assessment Board.
5) The second opportunity of the Academic and Research Phase exam is graded by the Thesis Assessment Board. In any circumstance, it is not possible to have a third opportunity of the Academic and Research Phase exam.

J.8 Extension of the Academic and Research phase

In special cases, extension of the Academic and Research phase beyond the maximum period for this (Article J.3.1) without having to adjust the MSc research proposal to can be requested with the Examination Board. The procedure for requests is described in the Rules and Regulations of the Examination Board.

PART 3: REGULATIONS PERTAINING TO THE POSTGRADUATE DIPLOMA COURSE IN GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

A. ADMISSION

Admission to the PGD course is conform the admission rules of the Master's programme M-GEO. Students in the PGD course who wish to take the whole Master's programme M-GEO must re-apply for the (second part of the) Master's programme.

B. STUDY LOAD

The duration of the PGD course is ten months fulltime. The total study load of the PGD course is 60 EC.

C. PROGRAMME FORMAT

The Faculty ITC offers the PGD course in different modes of learning:

1) In full time face to face mode at the Faculty ITC
2) In full time face to face mode at the Faculty ITC and at a partner institute (Joint Education Programme)
3) In fulltime and part-time distance mode
4) A mix of modes 1 to 3

D. SPECIALISATIONS

The students can graduate in all the specialisations of the M-GEO.

E. COURSE LEARNING OUTCOMES

At successful completion of the PGD course, the student is able to:

Domain/ Academic field

1. Identify and explain principles, concepts, methods and techniques relevant for geo-information processing and earth observation.
2. Analyse problems and cases from a (geo-)spatial perspective.
3. Use and design models to simulate (or: study) processes in the system earth with a spatial component.
4. Apply principles, concepts, methods and techniques in the context of system earth, the user and an application domain to solve scientific and practical problems.
5. Design and carry out a project in the domain according to scientific quality standards.

Scientific

6. Analyse issues in an academic manner and formulate judgments based on this.
7. Analyse scientific and practical domain problems in a systematic manner and develop scientific solutions for these problems in a societal context.
8. Communicate both orally and in writing on findings of project work to specialists and non-specialists.
9. Explore the temporal and social context of geo-information science and technology and be able to integrate these insights in their work.

Internationalization

10. Explain and contrast cultural and contextual differences that influence the collection, classification and visualization of spatial information.
11. Operate professionally and ethically in a multi-cultural environment.

General

12. Critically reflect on own and other's work.

13. Study in a manner that is largely self-directed and autonomous.

F. REQUIRED SEQUENCE OF EXAMS

The sequence of courses is fixed. The rules for deviations are described in Article 3 of the Common Elements of the EER.

G. CONTENT AND EXAMS

PGD course students study Quartile 1 to 4 of the academic oriented Master's programme M-GEO and round off with a Final Assignment (project).

Quartile 1	Quartile 2	Quartile 3	Quartile 4
Common courses (14 EC)	Specialisation course (7EC)	Specialisation course (7 EC)	Specialisation course (7 EC)
	Specialisation course (7EC)	Common course (7 EC)	Final Assignment (7 EC)
Common course (4 EC)			

H. COHERENCE AND DIDACTIC CONCEPT

The academic profile of the PGD course puts strong emphasis on the scientific discipline, a scientific approach, basic intellectual skills, co-operation and communication and the temporal and social context of research. In their profession, the graduates have to be able to apply knowledge and skills independently. The PGD course is therefore focused at handing over the control of the learning process to the student. At the beginning of the course, the teacher has the main control and the course contains some choices, especially concerning preparation for the Final Assignment. During the course the teacher role develops towards the role of adviser. The student takes the lead in the own learning process by developing a learning plan within the PGD course framework and guidelines. The Mentor provides guidance in this development.

I. CONTENT OF PRACTICAL EXERCISES

The programme contains a large amount of practical exercises which are graded. Please look at the Faculty ITC study guides for details of these practical exercises at study unit level.

J. FINAL ASSIGNMENT

The Final Assignment focuses on the application of knowledge, methods and techniques in the subject of the specialisation to the task performed or to the topic investigated. Depending on the specialisation, the Final Assignment is done individually or in small groups.

1) At the start of the Final Assignment, students receive terms of reference from supervising and coordinating staff.
2) Subsequently, students must plan and carry out the Final Assignment according to the terms of reference.
3) Part of the output of the Final Assignment is a final report and a documented database.
4) The output of the Final Assignment is be presented and discussed in public.

J.1 Conditions

1) Students can start a final assignment if exams of at least 28 EC worth have been passed.
2) A student or group may not incorporate material in the Final Assignment result that has been submitted for achieving certification from any other educational institution, unless a formal agreement has been established with a partner university as part of a Joint Education Programme leading to a double certificate.

J.2 Supervision

The Study unit coordinator of the Final Assignment sets up a scheme indicating which staff is available for consultation and supervision throughout the Final Assignment. The supervising staff has to be appointed by the management team of their department.
The supervising staff shall:

1) Provide the student/group with clear terms of reference.
2) Establish a schedule of supervisory meetings with the student/group.
3) Provide general advice and guidance on the execution of the Final Assignment.
4) Provide feedback on work, normally within three days of submission.
5) Forward, where appropriate, any comments on the performance of the student(s) to the Study unit Coordinator.
6) Advise the Study unit Coordinator when the progress of a student gives cause for concern so that action can be taken in accordance with these regulations.

If a student/group considers that the student/group is not receiving the quality of supervision required in the regulations, the student/group should seek action from the Programme Manager.

J. 3 Submission of the Final Assignment

1) The student/group must submit a well-organized copy of all digital files associated with the Final Assignment work, in accordance with the Faculty ITC data management policy, on the date of the Final Assignment exam or as specified by the Specialisation Coordinator.
2) Where the Final Assignment has been executed in groups or where individual Final Assignment work submitted has been executed in cooperation with others, the supervisor(s) must provide a written statement, indicating the part of the work that each student has done.
3) A student or group not submitting the Final Assignment exam within the specified time is considered to have failed. Only in exceptional cases and for reasons beyond the control of the student/group (at the discretion of the Programme Manager), the student/group may request in writing for a new opportunity to meet the above requirements.

J.4 Final Assignment Exam

1) Students are assessed individually based on the report and the presentation of the Final Assignment.
2) The Specialisation Coordinator assigns a date for the Final Assignment exam and informs the student/group of this date at least two weeks in advance.
3) The criteria and procedure for the Final Assignment Exam are drawn up in a separate document, called Instructions for the Final Assignment Assessment Board (FAAB) which is available via the Faculty ITC Intranet.

J.5 Extension of the Final Assignment period

In exceptional cases extension may be given for the Final Assignment work, at the discretion of the Programme Manager, but only if this request is submitted before the Final Assignment and only when the main cause of the delay is beyond the control of the student/group.

K. GRADUATION REQUEST AND FINAL EXAMINATION

1) The criteria for the award of a PGD Certificate are:
   a. The average of all exams must be at least 6.00.
   b. In the calculation of the average, the grade of the Final Assignment is weighed according to its study load.
   c. No more than one course (not surpassing 7 EC worth of study units) may have a grade below 6 and no grade below 5 is allowed.
   d. The Final Assignment exam must have a grade of at least 6.
2) Students can apply for PGD graduation once they fulfil the criteria for the award of a PGD Certificate via the Education Support Office.

3) Upon receiving an application for PGD graduation and receipt of the PGD course exam results, the Examination Board takes one of the following decisions:
   i. That the Final Assignment exam and overall performance of the student are satisfactory. The PGD Certificate is awarded.
   ii. That the Final Assignment exam and overall performance of the student are such that the PGD Certificate is awarded Cum Laude.
   iii. That the Final Assignment exam and/or overall performance are not satisfactory. The PGD Certificate is not awarded.
4) Only results of modules that are part of the formal curriculum of the PGD course are included in the calculation of the average and counted for the number of grades below 6 and below 5. Therefore, results of a study unit that is taken in addition to the formal curriculum or in exchange for a module of the formal curriculum for which exemption was given, will not be included. However, a module that was taken in exchange because of a reason other than exemption, is considered as part of the formal curriculum. The weight of an exam in the calculation of the average depends on the number of EC assigned to the study unit.
5) To be entitled to receive a PGD Certificate Cum Laude the average of all exams must be 8.00 or above. The Final Assignment exam must have a grade of 9 or 10. No grades below 7 are allowed. A Cum Laude PGD Certificate is only awarded after discussion by the Examination Board. In special cases, the Examination Board can deviate from the requirements for a Cum Laude PGD Certificate.
6) Students who have made changes in the formal curriculum of their PGD course (exemptions) that affect more than 15 EC are not entitled to receive a PGD Certificate Cum Laude.

L. PGD CERTIFICATE REQUIREMENTS

1) A PGD Certificate in Geo-information Science and Earth Observation is awarded to a student who has been officially admitted to a PGD course (as approved by the Faculty Board) and has fulfilled the examination requirements of that course.
2) A PGD Certificate can also be awarded to a student who
   a. has been officially admitted to a Master's programme at ITC,
   b. has passed Quartiles 1 to 3 including the Specialisation Course of Quartile 4 and Academic skills of the Master's programme (average of all exam grades is at least 6.0, not more than 12 EC worth of study units with an exam grade of 5 and no study unit exam grades below 5),
   c. has not received exemption for more than 25 EC worth of study units, and
   d. has successfully completed a Final Assignment according to PGD course standards.
3) A partial Certificate is awarded to a student who (1) has been officially admitted to a PGD course but has not fulfilled all examination requirements for that course, and (2) who has fulfilled the exam requirements of at least one summative assessed study unit of that PGD course.
4) The Rules and Regulations for Certification in the Faculty ITC Educational Programmes are described in a separate document.
5) The PGD Certificate is issued only one time, it is possible to request a certified copy via the Faculty ITC website.
6) A student who has obtained a PGD certificate and, at a later date, continues in the M-GEO programme on the basis of exemptions from the PGD course, must return its original PGD certificate to receive the diploma documents of the MSc degree.

M. EXEMPTIONS

1) Exemption for a study unit can be given when the learning outcomes of this study unit were achieved by the student:
   a. As part of another specialisation of the Faculty ITC PGD course;
   b. No longer ago than five years before the start of the PGD study.
2) At least 50% of the PGD course has to be taken to be eligible for the PGD Certificate. Therefore, exemption can be given for a maximum of 25 EC worth of study units of the PGD course.
3) Exemption can never be given for (part of) the Final Assignment.

4) Students from a Joint Education Programme who have passed a pre-defined curriculum at the partner institute can be given direct admission to a later part of the PGD course at the Faculty ITC.

N. JOINT EDUCATION PROGRAMME

The Faculty ITC offers one PGD course in cooperation with a partner organisation. The PGD course in Geo-information Science and Earth Observation with a specialisation in Geoinformatics is offered in cooperation with the Indian Institute of Remote Sensing in Dehradun, India.

PART 4: REGULATIONS PERTAINING TO THE MINORS OFFERED BY ITC

The Faculty ITC offers Bachelor minor courses. If a Bachelor student follows one of these courses, the following articles from the ITC Master EER apply:

- Art. 1.1-2
- Section 4
- Section 5.1
- Section 8

Minors offered by the faculty ITC

Responsibility of M-GEO

- HTHT Minor GIS
- HTHT Minor EO

Responsibility of M-SE

- Adapting to climate change with Spatial Engineering