TEACHING AND EXAMINATION REGULATIONS (TER)

IN ACCORDANCE WITH ARTICLE 7.13 OF THE [DUTCH] HIGHER EDUCATION AND RESEARCH ACT [WHW]

MASTER DEGREE PROGRAMME
APPLIED EARTH SCIENCES

ANNEX

TU Delft

2022
2023

THESE TEACHING AND EXAMINATION REGULATIONS APPLY TO ALL STUDENTS OF THE COHORT 2022-2023

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Paragraph 1
General

Article 1 Applicability of the regulations[1]

1. These regulations including the programme specific annexes, apply to the teaching and the examinations of:
   - the Master degree programme in Civil Engineering (CIE)
   - the Master degree programme in Environmental Engineering (ENV)
   - the Master degree programme in Applied Earth Sciences (AES)
   - the Interfaculty 4TU Master degree programme Construction Management and Engineering (CME)
   - the Interfaculty Master degree programme Transport, Infrastructure and Logistics (TIL)

hereinafter referred to as 'the programme' or 'programmes'.
These regulations also apply to the bridging programmes of the aforementioned programme(s).

2. For AES, CIE and ENV, the programme is provided under the responsibility of the faculty of Civil Engineering and Geosciences of Delft University of Technology, hereinafter referred to as the 'faculty'.
   For CME, the programme is provided under the responsibility of the faculty of Civil Engineering and Geosciences, the faculty of Architecture & the Built Environment, and the faculty of Technology, Policy & Management.
   For TIL, The programme is provided under the responsibility of the faculty of Civil Engineering and Geosciences, the faculty of Mechanical, Maritime and Materials Engineering, and the faculty of Technology, Policy & Management

Article 2 Concepts

A list of relevant websites can be found in the appendix to this article.

1. The following concepts apply in this Regulation:

a.	academic year:	the period from 1 September until and including 31 August of the following calendar year;
b.	Act:	the Higher Education and Scientific Research Act (in Dutch, the WHW), Dutch Bulletin of Acts, Orders and Decrees 593 and any amendments since its introduction;
c.	annex (former: IR);	the appendix which forms part of these Teaching and Examination Regulations;
d.	Board of Examiners:	tthe programme's Board of Examiners, which has been installed in accordance with Article 7.12 of the Act;
e.	bridging programme:	a deficiency rectifying programme aimed at moving up to a Master's degree programme, while enrolled in a Bachelor's degree programme, but without obtaining a Bachelor's degree, as stipulated in Article 7.30e or Article 7.57i of the Act;
f.	cohort:	the group of students who have registered for a degree programme for the first time in a given academic year;
g.	course (or: ' subject'):	a teaching unit within the programme, as stipulated in Article 7.3, Sections 2 and 3 of the Act; a course can consist of a number of components;
h.	credit:	a European Credit (EC) awarded in line with the European Credit Transfer System (ECTS); one credit equals a study load of 28 hours;
i.	(component) partial examination:	an assessment of the knowledge, insight and skills of a student in relation to a component within a course, as well as the marking of that assessment by at least one examiner, appointed for that purpose by the Board of Examiners;
j.	dean:	Dean of the faculties mentioned in Article 1, Section 2 or Dean that represents the Deans of the faculties mentioned in Article 1, Section 2;
k.	degree:	an academic title conferred by universities and colleges as an indication of the completion of a course of study, or as an honorary recognition of achievement;

1. *This Teaching and Examination Regulation (TER) is established per academic year and is valid as of the first day of the relevant academic year. This TER replaces all previous versions of the TER. The Study Guide is an integral part of the TER and its Annex.*

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l.	degree audit:	the evaluation, in which, in accordance with Article 7.10 of the Act, the Board of Examiners determines whether all examinations in the courses of the degree programme have been successfully completed;
m.	disability:	aall conditions which are (at least for the specified period) chronic or lasting in nature and which form a structural limitation for the student in receiving education and/or sitting examinations or taking part in practicals;
n.	education registration system:	the current education registration system is Osiris;
o.	examination:	an assessment of the knowledge, insight and skills of a student in relation to a course, as well as the marking of that assessment by at least one examiner, appointed for that purpose by the Board of Examiners;
p.	examiner:	the individual who, in line with Article 7.12, Subsection 3 of the Act, has been appointed by the Board of Examiners to set the examinations;
q.	institute:	Delft University of Technology;
r.	interim examination:	the assessment of the examinee's knowledge, insight and skills and the results of the assessment as referred to in Section 7.10, first subsection of the WHW;
s.	learning management platform:	the current learning management platform is Brightspace;
t.	module:	a constituent part of the Master degree programme Applied Earth Sciences, Civil Engineering, and Environmental Engineering, consisting of one unit or several connected and coordinated units. Modules with their own code count as a "course" in the sense of these regulations;
u.	practical exercise:	course or component of a course aimed at the acquisition of particular skills. The following can be understood as practical exercises: • writing a thesis, • conducting a project or experimental design, • carrying out a project or a design/research assignment, • completing an internship, • participating in field work or an excursion, • conducting tests and experiments, or • participating in other educational activities that are considered essential and that are aimed at acquiring particular skills.
v.	programme:	the Master degree courses as stipulated in Article 7.3a, Section 1 in the Act;
w.	programme duration:	the duration starting from the enrolment of the student, up and to including the last examination;
x.	student:	a person enrolled at Delft University of Technology in order to receive education and take the examinations and the degree audit in the degree programme;
y.	study guide:	the digital guide for the degree programme containing specific information on the courses included in the degree programme (www.studiegids.tudelft.nl);
z.	teaching period:	half a semester;
aa.	track	major, as stipulated in Article 7.13, Section 2, Subsection b of the Act;
aa.	virtual learning environment:	the electronic system designed for the exchanging of teaching information (here: Brightspace);
bb.	(module) unit or theme:	part of a module. Units or themes with a separate code count as a "course" in the sense of these regulations;
cc.	working day:	Monday through Friday, with the exception of recognised holidays and the collective closure days.

2. The other concepts in these regulations are used in the sense in which they appear in the Act.

3. In these regulations, the term 'examination' also refers to 'interim examination', with the exception of Article 19, Section 1, first two complete sentences.

4. A written or oral examination may also be taken digitally and/or online. In these regulations the term examination is also taken to mean a digital and/or online examination, unless stated otherwise in these regulations.

Paragraph 2
Admission and prior education

Article 3a Admission to the Master's degree programme

1. Individuals holding one of the following degrees have access to the education of the Master's degree programme in Applied Earth Sciences (under a) or Civil Engineering (under b) or Environmental Engineering (under c) or Construction Management and Engineering (under d) or Transport, Infrastructure and Logistics (under e) on the condition that all of the stated requirements have been met.

a. Applied Earth Sciences:
- Bachelor degree "Technische Aardwetenschappen" or "Applied Earth Sciences" from Delft University of Technology;
- Bachelor degree Aerospace Engineering from Delft University of Technology;
- Bachelor degree Civil Engineering from Delft University of Technology;
- Bachelor degree Electrical Engineering from Delft University of Technology;
- Bachelor degree "Maritieme Techniek" from Delft University of Technology;
- Bachelor degree "Technische Natuurkunde" from Delft University of Technology;
- Bachelor degree "Werktuigbouwkunde" from Delft University of Technology.

b. Civil Engineering:
- Bachelor degree Civil Engineering from Delft University of Technology or Bachelor degree Civil Engineering from University of Twente.

c. Environmental Engineering:
- Bachelor degree Civil Engineering from Delft University of Technology or University of Twente;
- Bachelor degree Applied Physics from Delft University of Technology;
- Bachelor degree Aerospace Engineering from Delft University of Technology;
- Bachelor degree "Maritieme Techniek" from Delft University of Technology;
- Bachelor degree "Werktuigbouwkunde" from Delft University of Technolgy;
- Bachelor degree Nanobiology from Delft University of Technology.

d. Construction Management and Engineering:
- Bachelor degree Architecture, Urbanism and Building Sciences ("Bouwkunde") from Delft University of Technology or from Eindhoven University of Technology;
- Bachelor degree Civil Engineering (Civiele Techniek) from Delft University of Technology or University of Twente;
- Bachelor degree Systems Engineering, Policy Analysis and Management (Technische Bestuurskunde) from Delft University of Technology;
- Bachelor degree Industrial Engineering & Management from University of Twente;
- Bachelor degree Industrial Engineering from Eindhoven University of Technology;
- Bachelor degree in Sustainable Innovation from Eindhoven University of Technology.

e. Transport, Infrastructure and Logistics:
- Bachelor degree "Civiele Techniek" from Delft University of Technology or University of Twente
- Bachelor degree Electrical Engineering from Delft University of Technology, Eindhoven University of Technology or University of Twente;
- Bachelor degree "Luchtvaart- en Ruimtevaarttechniek" from Delft University of Technology;
- Bachelor degree "Maritieme Techniek" from Delft University of Technology;
- Bachelor degree "Technische Bestuurskunde" from Delft University of Technology;
- Bachelor degree "Technische Informatica" from Delft University of Technology, Eindhoven University of Technology or University of Twente;
- Bachelor degree "Technische Natuurkunde" from Delft University of Technology, Eindhoven University of Technology, University of Twente or University of Groningen;
- Bachelor degree "Technische Wiskunde" from Delft University of Technology, Eindhoven University of Technology, University of Twente or University of Groningen;

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- Bachelor degree “Werktuigbouwkunde” from Delft University of Technology, Eindhoven University of Technology or University of Twente;
- Bachelor degree “Econometrie en Operationele Research” at Erasmus University Rotterdam, University of Amsterdam, VU Amsterdam, University of Groningen, Tilburg University or Maastricht University;
- Bachelor degree “Technische Bedrijfskunde” at Eindhoven University of Technology, University of Twente or University of Groningen.

Depending on the Bachelor degree, certain synchronisation courses are mandatory, according to the Annex of the programme in question.

2. Students who do not possess the degree mentioned in Section 1 are required to obtain proof of admission to the programme from the Dean, who will seek the advice of the admission committee on this matter.

a. *Other university Bachelor degree (not including those listed in Section 1)*

The following applies to this category: successful completion of the stated bridging programme for admission to the Master degree programme:

Civil Engineering and Applied Earth Sciences and Environmental Engineering:

- University Bachelor degree. Bridging programme to be followed: to be specified by the Director of Studies upon application

Construction Management and Engineering:

- University Bachelor degree: students who do not possess any of the degrees mentioned in Section 1 may be eligible for, and should therefore seek advice on, a Bridging minor or custom bridging programme, as stipulated in the Annex for the MSc CME.

Transport, Infrastructure and Logistics:

A university Bachelor degree at Delft University of Technology or equivalent in:

- “Bouwkunde” (also at Eindhoven University of Technology);
- “Industrieel Ontwerpen” (also at University of Twente);

or a university Bachelor degree in:

- “Landschapsarchitectuur en Ruimtelijke Planning” at Wageningen University,
- “Technische Planologie” at University of Groningen,
- “Sociale Geografie en Planologie” at University of Amsterdam, Utrecht University or University of Groningen gives admission to the Master’s degree programme, in which a convergence programme has to be completed.

This convergence programme will be part of the Master’s degree programme in Transport, Infrastructure and Logistics and consists of convergence courses stated in the Annex to the TER.

Individuals who have received foreign education prior to the earned Bachelor’s degree, must meet the requirements of satisfactory linguistic mastery of Dutch, as stated in the appendix, before one can participate in a Dutch-language bridging programme.

The foregoing requirement does not apply to pre-switchers who were registered in the academic year 2021-2022, with uninterrupted enrolment for the academic years 2022-2023, 2023-2024 and 2024-2025

b. *Higher professional education degree*

The following applies to this category:
Successful completion of the stated bridging programme for admission to the Master degree programme and, if applicable, the language requirement.

Civil Engineering and Applied Earth Sciences and Environmental Engineering:
Bridging programme to be followed: Transitional programme for students with a Dutch higher vocational institute Bachelor degree ("HBO") as stipulated in the programme-specific Annex.

Construction Management Engineering:
Bridging programme to be followed: Transitional programme for students with a Dutch higher vocational institute Bachelor degree ("HBO") as stipulated in the Annex.

Transport, Infrastructure and Logistics:
A relevant higher professional education degree gives admission to the programme only after successful completion of the bridging programme stated in the Annex to this TER and, if applicable, the language requirement.

Individuals who have received foreign education prior to the earned higher professional education degree, must meet the requirements of satisfactory linguistic mastery of Dutch, as stated in the appendix, before one can participate in a Dutch-language bridging programme.

The foregoing requirement does not apply to pre-switchers who were registered in the academic year 2021-2022, with uninterrupted enrolment for the academic years 2022-2023, 2023-2024 and 2024-2025

c. *Foreign degree*

This category is subject to the general selection requirements of Delft University of Technology with regard to prior foreign education, based on a Cumulative Grade Point Average of at least 75% of the maximum number of points that could be earned, included in the table of countries (see website) and meeting the requirements for satisfactory linguistic mastery of English, as stated in the appendix to Article 3.

3. For admission in accordance with section 2, the following additional condition applies:
Access to the education of the Master degree programme in Applied Earth Sciences, Civil Engineering, Environmental Engineering, Construction Management and Engineering or Transport, Infrastructure and Logistics is open to individuals who have demonstrated to the admissions committee that they possess knowledge, insight and skills at the level of the Bachelor degree mentioned in sections 1 and 2.

Article 3b Completion of bridging programme prior to the degree programme

1. A student who is enrolled in a bridging programme with the aim of being admitted to the Master degree programme at TU Delft must complete this bridging programme within two academic years. Deviations from the bridging programme are not allowed.

2. After the programme duration of the bridging programme, the enrolment of the student will be cancelled. Under exceptional circumstances the student can submit an well-founded request for an extension of the course duration for a period of at most twelve months. The Board of Examiners can decide to grand extension of the programme duration when a student is experiencing or has experiences a study delay due to circumstances that are beyond the student's control.

Article 4 Not applicable

Not applicable.

Paragraph 3
Content and composition of the programme

Article 5 Goal of the programme

1. The programme is intended to educate students to earn a Master of Science degree in Applied Earth Sciences (AES), Civil Engineering (CE), Environmental Engineering (ENV), Construction Management and Engineering (CME) or Transport, Infrastructure and Logistics (TIL) respectively, providing them with such a level of knowledge, insight and skills in the area of the above mentioned programmes, that graduates can fulfil positions on the labour market at the Master's level.

2. The Intended Learning Outcomes of the different programmes are outlined in the programme-specific Annexes to these Regulations.

Article 6 Track

1. The Master degree programme in Civil Engineering has the following tracks, with the stated content in the annex to this TER:
   - Construction Materials (CM)
   - Structural Engineering (SE)
   - Hydraulic Engineering (HE)
   - Hydraulic and Offshore Structures (HOS)
   - Geotechnical Engineering (GE)
   - Traffic and Transport Engineering (TTE)

2. The Master degree programme in Applied Earth Sciences has the following tracks, with the stated content in the annex to this TER:
   - Applied Earth Sciences
   - Applied Geophysics

3. The Master Degree Programme Environmental Engineering has the following tracks, with the stated content in the annex to this TER:
   - Water Resources Engineering (WRE)
   - Atmospheric Environmental Engineering (AEE)
   - Resource and Waste Engineering (R&WE)

4. The Master Degree Programme Construction Management and Engineering has no tracks.

5. The Master Degree Programme Transport, Infrastructure and Logistics has no tracks.

Article 7 Composition of the programme and degree audits

1. The programme includes the Master's degree audit, with a study load of 120 credits.

2. Following approval from the two Boards of Examiners concerned, a student may take an individual double degree programme in which two Master's programmes are combined simultaneously to create a programme of at least 180 credits. Upon completion the student is awarded two Master's diplomas. The student must earn at least 60 unique credits for each Master's degree programme.

3. A course that was part of the Bachelor's degree programme that qualified a student for admission to the Master's degree programme may not be included in the Master's degree programme. If a compulsory component has already been completed in the aforementioned Bachelor's degree programme, the Board of Examiners will designate an alternative course. If an elective course of the degree programme has already been completed in the aforementioned Bachelor's degree programme, the student will select an alternative elective course.

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4. The Master's degree audit is concluded with a final test or assignment. This test or assignment demonstrates that the student possesses and is able to apply the knowledge, insight and skills acquired in the degree programme.

5. The degree programme and its courses are described in the Annex, including the study load, number of contact hours and form of examination of each course, as well as the programming of the examination and the language.

6. The actual design of the educational programme is elaborated in greater detail in the study guide.

Article 8 Form of the programme

The degree programmes are offered exclusively on a full-time basis.

Article 9 Language

The education is in English, and the examinations are administered in English.

Article 10 Honours Programme

1. Based on the criteria referred to in the Honours Programme, students will be selected and admitted to the Honours Programme by the Honours Programme Committee established by the Director of Studies.

2. The Honours Programme comprises at least 20 credits.

   a. At least five credits must be completed in the institution-wide component of the Master's Honours Programme and
   b. At least 15 credits must be completed in the faculty component of the Master's Honours Programme, the composition of which (including its content and options) is described in the Guidelines Honours Programme CEG and/or Annex.

3. All students selected for participation in the Honours Programme must submit their options for approval to the Honours Coordinator.

4. The Board of Examiners will be responsible for assessing whether all the requirements of the Honours Programme have been met.

5. Any student who has successfully completed the Honours Programme will be awarded a certificate signed by the chair of the Board of Examiners and the Rector Magnificus

Article 11 (Compulsory) participation in the programme

1. All students are expected to participate actively in the programme for which they are registered.

2. If necessary, there will be an obligation to participate in practical exercises, with a view to admission to the related examination. The Board of Examiners may grant an exemption from this obligation, with or without imposing a substitute requirement.

3. Any supplementary obligations are described by component in the course description in the study guide.

Article 12 Programme evaluation

1. The Director of Studies is responsible for the evaluation of the education.

2. The manner in which the education in the programme is evaluated is documented in the faculty's Quality Assurance Manual, which is submitted to the Faculty Student Council and the Board of Studies.

3. The Director of Studies informs the Board of Studies concerning the outcomes of the evaluation, the intended adjustments based on these outcomes and the effects of the actual adjustments.

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Paragraph 4
Registration for courses and examinations

Article 12a Cancelled

Not applicabble.

Article 13 Registration for written examinations

1. Registration to participate in a written examination, including a written examination that is taken online, remotely from the university, is compulsory and is done by entering the requested data into the education registration system (Osiris) no later than 14 calendar days before the examination. Students receive examination tickets by email as confirmation of their registration.

2. Students may submit a request to register for an examination after the deadline mentioned in subsection 1 has passed but no later than 6 calendar days before the examination in question, in Osiris by being placed on a waiting list. The request will be honoured providing that places are available in the room or rooms where the examination is scheduled to take place. The student will receive an exam ticket by email as confirmation.

3. In the event of circumstances beyond a student's control resulting in the student being unable to register for an examination, the Board of Examiners may nevertheless permit the student to participate in the examination.

4. Students who have not registered for the examination and are therefore not included on the list of examinees can report on the day of the examination to the invigilator beginning 15 minutes before the start of the examination until the actual start. They will be admitted to the examination room, in the order that they reported to the invigilator, 30 minutes after the start of the examination, if sufficient places are available. The loss of 30 minutes of examination time cannot be compensated. Students who have been granted late access to the examination will be added to the list of examinees. The student participates in the examination subject to the validation of entitlement to participate in the examination.

5. In the situation described in the previous section, if it is found that a student was not entitled to participate in the examination, the examination work will be deemed invalid, it will not be marked and it will not count towards a result. The student may subsequently submit an appeal to the Board of Examiners, accompanied by reasons, requesting that the examination work that has been deemed invalid be declared valid and to have it assessed. The Board of Examiners will approve the request only in case of extenuating circumstances.

6. Sections 2 and 4 of this article do not apply to a written examination that is taken online, remotely from the university.

7. If unforeseen circumstances or measures make it necessary to change the form or manner of taking the examination, the Board of Examiners may determine a different registration period in favour of the student.

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Article 14 Registration for other examinations

1. Registration for participation in an examination other than a written examination is compulsory, and is possible up to 14 calendar days before the examination take place in the manner that is stated in the study guide for the relevant examination.
   If unforeseen circumstances or measures make it necessary to change the form or manner of taking the examination, the provisions stated in the study guide apply in full unless the Dean decides to deviate from the manner or term of registration prescribed in the study guide.

2. In special cases, the Board of Examiners may deviate from the registration term stated in Section 1, but only in favour of the student.

3. Students who have not registered on time will not be allowed to participate in the examination. The Board of Examiners can nevertheless admit a student to the examination, but only in case of special circumstances.

4. In the event of unauthorised participation in an examination, the Board of Examiners may declare the result invalid.

Article 15 Withdrawal from examinations

1. Students can withdraw from an examination through the education registration system (Osiris) up to three calendar days before the examination.

2. Any student who has withdrawn from an examination should re-register on a subsequent occasion, in accordance with the provisions of Articles 13 and 14.

Paragraph 5
Examinations

Article 16 Form of the examinations and the manner of testing in general

1. Examinations (oral, written or otherwise) are taken in the manner described in the study guide. In the event of unforeseen circumstances or measures, the Board of Examiners may determine that the manner prescribed may be deviated from. If an examination is taken using online proctoring, this takes place in accordance with the TU Delft Online Proctored Examination Regulation.

2. The study guide contains a description of the moments at which and the numbers of times that examinations can be taken, along with their frequency, without prejudice to the provisions of these regulations concerning written and oral examinations, as described in Article 17.

3. A student may participate in an examination for a course no more than twice in one academic year, with the understanding that registration for an examination without timely withdrawal counts as participation.

4. In special cases, the Board of Examiners may deviate from the provisions of the above sections 1 to 3 in favour of the student.

5. Well before a written examination, the examiner will give the students the opportunity to familiarise themselves with representative sample questions and the criteria by which they will be assessed. The teacher or examiner will provide accompanying guidelines for the way in which the sample questions are answered.

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Article 17 Times and number of examinations

1. Two opportunities to take written examinations will be offered each academic year. The previous provision applies equally to examinations other than written examinations, unless this cannot be reasonably demanded of the programme. The times in which the examinations can be taken are:
   - at the end of the teaching period in which the course is taught, and
   - in the fifth week or at the end of the next teaching period or during the summer resit period according to the TU Delft academic calendar.

2. An annual timetable is issued detailing when examinations may be taken, and it is published before the start of the relevant teaching period.

3. Contrary to the provisions in Section 1, the opportunity to take the examination for a course that is not taught in a certain academic year must be given at least once in that year.

4. Contrary to the provisions of section 1, two opportunities to sit an examination will be offered for discontinued courses in the academic year following the year in which the course was last taught.

5. In exceptional cases, the Board of Examiners may permit more than two opportunities in a year for certain examinations.

Article 18 Oral examinations

1. For oral examinations, no more than one student shall be tested at a time, unless determined otherwise by the Board of Examiners.

2. Oral examinations shall not be public, unless the Board of Examiners has decided otherwise. In deviation from this first clause, a final presentation is given publicly except in special cases in which the Board of Examiners has decided otherwise, whether or not at the request of the student.

3. The oral examination is administered by at least two examiners. In the event of unforeseen circumstances or measures, the Board of Examiners may allow the oral examination to be administered by a single examiner, provided the student consents to an audio and/or video recording with sound of the oral examination.

Article 19 Determination and announcement of results

1. The examiner determines the result of a written examination as quickly as possible but by no later than 15 working days after the examination. The results of written interim examinations shall be announced no later than five working days before the next written interim examination.

2. The examiner determines the result of an oral examination as quickly as possible but no later than 15 working days after it is administered.

3. The examiner records the results of the assessment of a practical exercise as quickly as possible, but no later than 15 working days after the completion of the practical exercise at the designated time. In the education registration system (Osiris), the result will be dated on the date of completion of the practical exercise. With regard to a series of practical exercises in which the knowledge acquired in a previous practical exercise is important to the subsequent practical exercise, the result of the previous practical exercise shall be announced before the subsequent practical exercise. If this is not possible, the examiner shall schedule a timely discussion of the previous practical exercise.

4. The examiner is responsible for the registration and publication of the results in the education registration system (Osiris), with observance of the student's privacy. When the result of an examination is announced, the student is informed about the right of perusal as stipulated in Article 20 as well as about the possibility of appealing to the Examinations Appeals Board.

5. Contrary to the previous provisions, results for examinations administered in the last regular examination period, as well as for resits from the first year of the BSc taken during the resit period, shall be determined, registered and published within five working days of the week following the week in which the examination was taken.

6. If special circumstances prevent the examiner from registering the results on time, the examiner will report this to the Board of Examiners, accompanied by reasons, and notify the students and student administration as quickly as possible.

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Article 20 Right to inspect the results

1. Upon request, students will have the right to inspect their assessed work during a period of at least 20 working days after the announcement of the results of a written examination or the assessment of a practical exercise. During the inspection of the assessed work, it is not permitted to copy the underlying examination questions in any way. Students intending to appeal against the assessment of their work will be issued with a copy of the assessed work.

2. During the period mentioned in Section 1, all students who have participated in the examination can become acquainted with the questions and assignments of the relevant examination, as well as with the standards that form the basis of the assessment.

3. The examiner can determine that the inspection or cognizance intended in Sections 1 and 2 will take place at a pre-established place and at a pre-established time.

4. Students proving that they were unable to appear at such an established place and time because of circumstances outside of their control will be offered another possibility, if possible within the period mentioned in Section 1. The place and times mentioned in the first sentence will be made known in good time.

Article 21 Discussion of the results of examinations

1. Students who have taken a written examination or who have received the assessment of a practical exercise can ask the relevant examiner for a discussion of the results during a period of 20 working days after the announcement of the results. The discussion will take place within a reasonable period, at a place and time to be determined by the examiner.

2. At the request of the student or at the initiative of the examiner, a discussion justifying the assessment will take place between the examiner and the student as soon as possible after the announcement of the result of an oral examination. During the discussion of the assessed work it is not permitted to copy the underlying examination questions in any way.

3. If a collective discussion is organised by the examiner, students may submit requests as referred to in section 1 only if they have been present at the collective discussion and have motivated their requests, or if they were unable to be present at the collective discussion because of circumstances outside their control.

4. The Board of Examiners may allow deviation from the provisions in Sections 2 and 3.

Article 22 Period of validity for examinations

1. The period of validity of the results of an examination is indefinite. The Dean can restrict the period of validity of a successfully completed examination only if the knowledge or insight that was examined has become outdated or if the skills that were examined have become outdated.

2. In cases involving a limited period of validity based on the first section, the period of validity shall be extended at least by the duration of the acknowledged delay in studies, based on the TU Delft Profiling Fund Scheme.

3. In individual cases involving special circumstances, the Board of Examiners can extend periods of validity that have been limited based on the first section or further extend periods of validity that have been extended based on the second section.

4. If a course consists of interim examinations, the period of validity of the interim examination for which no credits are assigned shall be restricted to a time period stated in the study guide.

Article 23 Exemption from an examination or obligation to participate in a practical exercise

1. After having obtained recommendations from the relevant examiner, the Board of Examiners may grant exemptions to students:
   a. who have successfully completed an examination or degree audit in a system of higher education within or outside the Netherlands that corresponds to the examination for which the exemption has been requested in terms of content and level, or

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b. who demonstrate that they possess sufficient knowledge and skills that have been acquired outside the system of higher education.

2. After having obtained recommendations from the relevant examiner, the Board of Examiners may grant exemption from the requirement to participate in a practical exercise with a view to admission to the related examination, possibly subject to alternative requirements.

Article 24a Periods and frequency of degree audits

In principle, the opportunity to take the Master's degree audit will be offered once each month. The dates for the meetings of the Board of Examiners shall be published before the beginning of the academic year.

Article 24b Invalidation of examinations

The Board of Examiners is authorised to declare invalid an examination or part thereof if a proper assessment of the knowledge, insight and skills of the student has not proved reasonably possible based on the examination or the part thereof. The Board of Examiners may draw up further rules for this.

Paragraph 6
Studying with a disability

Article 25 Adjustments to the benefit of students with disabilities or chronic illnesses

1. Upon a written and substantiated request to that effect, students with disabilities or chronic illnesses may be eligible for adjustments in teaching and examinations. These adjustments are coordinated to the situations of the students as much as possible, but they may not alter the quality or level of difficulty of a course or the study programme. Facilities to be provided may include modifications to the form or duration of examinations and/or practical exercises to suit individual situations or the provision of practical aids.

2. Requests as mentioned in Section 1 must be accompanied by a recent statement from a physician or psychologist or, in cases involving dyslexia, from a testing office registered with BIG, NIP or NVO. If possible, this statement should include an estimate of the extent to which the condition is impeding the student's academic progress.

3. Decisions concerning requests for adjustments relating to educational facilities are taken by the Dean or by the Director of Studies on the Dean's behalf. Decisions concerning adjustments relating to examinations are taken by the Board of Examiners or by the academic counsellor on behalf of the Board of Examiners.

4. Adjustments to examinations can involve the following or other matters:
   - form (e.g. replacing a written test with an oral test or vice versa, testing the required material in the form of interim examinations or granting exemptions to the attendance requirement);
   - timing (e.g. additional time for an examination, wider spreading of examinations across the examination period, granting exemptions to admission requirements or extending the period within which a component must be completed);
   - aids permitted during testing (e.g. English-Dutch dictionaries for students with dyslexia);
   - location (taking the examination in a separate, low-stimulus space).

5. Adjustments in educational facilities could include:
   - providing modified furniture in teaching and examination spaces;
   - providing special equipment (e.g. magnification or Braille equipment for students with visual impairments and blindness or loop systems and individual equipment for students with hearing impairments and deafness);
   - providing more accessible course material;
   - providing special computer facilities (e.g. speech-recognition or speech-synthesising software);
   - providing a rest area.

CONTENT

Paragraph 7

Study support and (binding) recommendation on the continuation of studies

Article 26 Study support and Monitoring of student progress

1. The Dean is responsible for providing individual study supervision to students registered for the degree programme, partly for their orientation towards potential study options within and outside the degree programme. The Dean will also ensure that effective support and supervision is provided to students in making choices related to their studies.

2. The examination and study programme applying to each student is documented in the education registration system (Osiris).

3. The Student Administration is responsible for ensuring that all students are able to review and check their results in the education registration system (Osiris).

Article 27 Not applicable

Not applicable.

Paragraph 8

Final provisions

Article 28 Conflicts with the regulations

In the case of conflict between provisions in the study guide or other document concerning the relevant teaching and examination education and study programme and these regulations, the provisions of these regulations shall take precedence.

Article 29 Amendments to the regulations

1. Amendments to these regulations are adopted separately by the Dean.

2. Amendments that are applicable to the current academic year will be made only if they would not reasonably damage the interests of students.

3. Amendments to these regulations may not lead to disadvantageous changes to any decisions that have been made with regard to individual students.

4. In the event of unforeseen circumstances or measures, the Dean may decide to deviate from these regulations, including the actual form of the education and any compulsory attendance requirements. This also means that the provisions in the study guide may be deviated from.

CONTENT

Article 30 Transitional regulations

1. If the composition of the degree programme undergoes substantive changes, transitional measures will be established and published through the Dean. Transitional measures can be found in the programme-specific Annexes to the TER.

2. These transitional measures shall include at least the following:
   a. an arrangement regarding exemptions that may be obtained based on examinations that have already been passed;
   b. the period during which the transitional arrangement shall be valid.

3. Students shall follow the degree programme as it applied or applies during the first academic year of their enrolment, unless components of the programme are no longer offered. In such cases, students must transfer according to the applicable transitional measures. Deviations require the approval of the Board of Examiners. Before submitting a request to this end, the student must have first obtained recommendations from an academic counsellor.

4. If a course within a degree programme is cancelled, four additional opportunities for taking the examination in this course shall be offered after it has been taught for the last time: the examination at the end of the teaching of the course, a resit in the same academic year and two resits in the following academic year.

Article 31 Announcement

1. The Dean is responsible for ensuring a suitable announcement of these regulations and any amendments to them.

2. In any case, the Teaching and Examination Regulations are to be posted on the programme's website.

Article 32 Entry into force

These regulations shall enter into force on **1 September 2022.**

Adopted by the Dean of the faculty on 30 June 2022.

Appendix & Addendum TER MSc

APPENDIX to Article 2 - relevant websites

Student portal with links to relevant regulations, e.g.

- Student Charter,
- privacy statement online proctoring,
- Code of Ethics,
- Online Proctored Examination Regulation etc.

» https://www.tudelft.nl/en/student

Rules & Regulations of the Board of Examiners

» https://www.tudelft.nl/studenten/faculteiten/citg-studentenportal/onderwijs/onderwijsinformatie/educational-rules-and-regulations/

Board of Examiners general website

» https://www.tudelft.nl/studenten/faculteiten/citg-studentenportal/organisatie/board-of-examiners-ceg/

Wet op het hoger onderwijs en wetenschappelijk onderzoek (WHW)

» https://wetten.overheid.nl/BWBR0005682/2019-02-01

Examination Appeals Board

» https://www.tudelft.nl/en/student/legal-position/central-complaints-desk-for-students/objections-and-appeals

Studying with a disability

» https://www.tudelft.nl/en/student/counselling/studying-with-a-disability

CONTENT

APPENDIX to Article 3 TER (for Master's degree programmes)

Language level Dutch-language bridging programmes for individuals holding another Bachelor's degree university education (b) or a higher professional education degree (c).

The Dutch language:

By successfully passing a Dutch examination at the following level:

- GCE A Level
- Algemeen Secundair Onderwijs (ASO)
- European Baccalaureate (EB)
- Suriname VWO
- International baccalaureate (IB)
- Baccalaureate Series S

By successfully completing:

- The complete Dutch course from the TU Delft Centre for Languages and Academic Skills; or
- The NT2-II certificate and the professional language course of the TU Delft Centre for Languages and Academic Skills.

Language level for individuals holding a higher professional education degree (c)

The following candidates are exempted from the English language test requirement:

- Students with a Bachelor's degree from a Dutch university
- Students with a VWO diploma or VWO English certificate
- Students with an HBO (University of Applied Sciences) degree from a degree programme taught entirely in English
- Students who hold the nationality of one of the following countries: USA, UK, Ireland, Australia, New Zealand or Canada

Sufficient competence in the English language can be demonstrated by passing one of the following tests:

- TOEFL iBT (Test of English as a Foreign Language internet-Based Test) with an overall band score of at least 90
- IELTS (academic version) with an overall band score of at least 6.5
- Cambridge Assessment English:
  - C1 Advanced (Certificate of Advanced English) with an overall score of at least 176.
  - C2 Proficiency (Certificate of Proficiency in English) with an overall score of at least 180.

If a bridging programme needs to be completed before a candidate can be admitted to a Master's programme, the certificate should be obtained before the start of the bridging programme.

Language level for holders of a non-Dutch diploma (d)

Competence in the English language as demonstrated by passing one of the following tests:

- TOEFL iBT (Test of English as a Foreign Language internet-Based Test) with an overall band score of at least 100 and a minimum score of 22 for each section
- IELTS (academic version) with an overall band score of at least 7,0 and a minimum score of 6,5 for each section
- Cambridge Assessment English:
  - C1 Advanced (Certificate of Advanced English) with an overall score of 185 and a minimum score of 169 for each section.
  - C2 Proficiency (Certificate of Proficiency in English) with an overall score of 180 and a minimum score of 169 for each section.

Certificates more than two years old will not be accepted.

The following candidates are exempted from the English language test requirement:

- Students who hold the nationality of one of the following countries: USA, UK, Ireland, Australia, New Zealand or Canada;
- Students who hold a Bachelor's degree from one of the above countries.

CONTENT

Addendum to Article 3a TER

1. For Bachelor and Pre-Master students who were enrolled in a relevant Bachelor programme at a Dutch higher education institution or in a Pre-Master programme to a Master programme at CEG or an interfaculty programme in the academic year 2021-2022, the following principles apply for the transition to a Master programme of the CEG faculty or interfaculty programme:
   a. For Bachelor students:
   - Bachelor students may enrol in Master courses and take exams in the academic year 2022-2023 if on 31 August they have a deficit in their BSc programme of no more than 10 EC and have successfully completed their Bachelor thesis.
   - The option to enrol in Master courses and take exams without having completed a Bachelor programme will expire on 31 August 2023.

   b. For Pre-Master students:
   - Pre-Master students may enrol in Master courses and take exams in the academic year 2022-2023 if on 31 August 2022 they have a deficit in their Pre-Master programme of no more than 10 EC.
   - The option to enrol in Master courses and take exams without having completed the Pre-Master programme will expire on 31 August 2023.

2. Students can only have an enrolment under these transition rules in a Master programme once and for a maximum duration of one year. Stacking two enrolments under these transition rules is therefore not possible.

3. Results achieved in the academic year 2022-2023 in one of the Master programmes of the faculty of Civil Engineering and Geosciences will be added to the MSc examination programme as soon as there is a valid enrolment for the relevant MSc programme.

CONTENT

ANNEX

MASTER DEGREE PROGRAMME
APPLIED EARTH SCIENCES

2022
2023

TU Delft

THESE TEACHING AND EXAMINATION REGULATIONS
APPLY TO ALL STUDENTS OF THE COHORT 2022-2023

Paragraph 1
Compiling the study programme

Article 1 The study load

The study load for the Master's degree programme is 120 credits. None of the components of the programme may have formed part of the Bachelor's degree programme in Applied Earth Sciences or any other Bachelor's programme.

Article 2 Tracks

1. Students can choose one of the two following tracks in the MSc AES programme:
   - Applied Earth Sciences, as laid down in Article 6;
   - Applied Geophysics, as laid down in Article 7.

2. Information about courses and admission requirements for courses can be found in the online study guide.

Article 3 Matching Mechanism (Discipline Registration)

1. All first-year students of the MSc Applied Earth Sciences need to register their choice of discipline. Students who start the programme in the first quarter need to register in teaching week 2.5.

2. Students need to select three disciplines in order of preference and must submit their selection with a motivational letter for their first choice of discipline in My Study Planning.

3. Students will be automatically informed in teaching week 2.8 to which discipline they have been matched.

4. Students can switch between discipline at any moment under the condition that they can be matched to the preferred discipline and this switch is approved by the discipline coordinator.

5. Students who have started their programme after week 2.5 need to select their disciplines of preference according to section 2 at the moment they start their Master programme and will be matched to a discipline after two weeks.

6. The matching mechanism described above does not apply for students who choose the Applied Geophysics track.

Article 4 Composing and Registering the Individual Study Plan

1. Students must submit an Individual Study Plan (ISP) in My Study Planning. The ISP provides an overview of the full MSc programme the student intends to follow, including all courses or modules and electives.

2. During the course of the programme, students may request changing discipline modules, electives and disciplines through My Study Planning.

3. The ISP and any subsequent changes to it have to be approved by or on behalf of the Board of Examiners.

4. Approved ISPs are registered in Osiris and are used to monitor the students' progress, as well as to check whether the student has fulfilled all components necessary to graduate.

CONTENT

Article 5 Rules for Choosing Free Electives

1. The student may choose:
   - All subjects offered in conjunction with the degree course;
   - All subjects offered in conjunction with other Master's degree courses at a Dutch university or at an international university with which TU Delft has an exchange contract;

   Language courses, skills subjects and MOOCs are not allowed within the examination Programme, they can only be part of the extracurricular section of the diploma supplement.

2. Examinations pertaining to subjects given by other programmes are to be completed in the way stipulated by or on behalf of the Teaching and Examination Regulations laid down by the programme in question.

Article 6 The Applied Earth Sciences track

1. The study programme of the Applied Earth Sciences track is compiled in the following way:
   - Y1 Q1&Q2: Common Faculty Programme Core Module: Modelling, Uncertainty and Data for Engineers;
   - Y1 Q1&Q2: three AES Programme Core Modules;
   - Y1 Q3: Discipline Core Modules that comprise core components for the specific discipline;
   - Y1 Q3: A-modules that stay within a discipline or that are a cross-over between disciplines;
   - Y1 Q4: B-modules per discipline that comprise 4 theoretical components, a lab combining these theory components and a fieldwork;
   - Y2 Q1: In-depth and/or free electives, a multidisciplinary project or JIP;
   - Y2 Q2: Cross-over module and thesis preparation;
   - Y2 Q3&4: the Master Thesis.

2. The four disciplines of the Applied Earth Sciences track are:
   - Climate & Weather (CW);
   - Earth Observation (EO);
   - Geo-Energy (GE);
   - Geo-Resources (GR).

3. The Common Faculty Programme Core Module and the three AES Programme Core Modules are compulsory for all students

Code	Title	ECs
CEGM1000	Modelling, Uncertainty and Data for Engineers	12
AESM1001	Earth System, Natural Resources & Climate	7
AESM1002	Dynamics of Solids and Fluids	5,5
AESM2001	Physical Principles of Earth System Observation	5,5

4. Students have to make a choice between the different disciplines and follow a Discipline Core Module of 6 EC in Y1 Q3. The Discipline Core Modules are:
   - For Climate & Weather: AESM3001 Atmosphere Dynamics and Air-Sear Coupling
   - For Earth Observation: AESM3002 Earth Observation Technologies
   - For Geo-Energy: AESM3003 Geo-Energy Engineering Applications
   - For Geo-Resources: AESM3004 Economic and Structural Geology

5. Next to the Discipline Core Module, students need to pick one A-module in Y1 Q3 related to their discipline, from a total offering of 9 different A-modules. All A-modules are based on three subject units of about 2,5 EC, with synthesis activities and an integration assignment of about 1,5 EC combining the three units, giving a total of 9 EC for each A-module.

Code	Title	ECs
AESM301A	Atmospheric Processes and Modelling	9
AESM302A	Geo-Data Analysis and Geodesy	9
AESM303A	Geo-Data and Geo-Informatics	9
AESM304A	Flow and Simulation of Subsurface Processes	9
AESM305A	Characterisation of the Subsurface	9

Code	Title	ECs
AESM306A	Extraction Processes and consequences of Raw Materials	9
AESM307A	Earth Deformation Processes Across Scales	9
AESM308A	Climate Modelling and Remote Sensing	9
AESM309A	Climate Change and Dynamic Landforms	9

6. In Y1 Q4, students follow a B-module of 15 EC, which comprises a lab (4 EC) combined with theory components (4 x 2 EC) and a fieldwork (3 EC). The B-module is organised per discipline.

Code	Title	ECs
AESM401B	Climate and Weather B-module	15
AESM402B	Earth Observation B-module	15
AESM403B	Geo-Energy B-module	15
AESM404B	Geo-Resources B-module	15

7. The AES design team is currently working on the actual content of the second year modules. The Annex MSc AES 2023-2024 will contain a detailed description of the second year of the programme. Y2 Q1 will consist of JIP, MDP or electives. Y2 Q2 will consist of a cross over module of 10 EC and thesis preparation module of 5 EC. Y2 Q3 and Q4 are devoted to the Master Thesis.

8. The Intended Learning Outcomes (final attainments) of the AES track are as follows:

The student is able to…

a. Observe, characterise and explain Earth System processes.
b. Develop and apply data processing and analysis techniques to analyse Earth System processes.
c. Model and predict Earth system processes and their variability, and assess the influence of natural and anthropogenic factors.
d. Develop novel engineering solutions to facilitate the exploitation and/or management of Earth's natural resources in a responsible and sustainable way.
e. Formulate a research question, perform a literature, and research study, and build on existing technologies from different disciplines needed for an Applied Earth Sciences solution.
f. Challenge existing knowledge, show a critical attitude, and produce creative, constructive and novel solutions, and exercise independent judgement and uphold ethical standards.
g. Use written and oral communication skills to effectively exchange results and opinions with researchers, engineers, and Applied Earth Sciences stakeholders.
h. Set up, plan and monitor a project, dealing with a deadline and requirements set by Applied Earth sciences stakeholders.
i. Work effectively in a team of diverse talents, skills, characters, and cultures to solve an Applied Earth Sciences challenge.
j. Design and execute a fieldwork campaign for the application and/or Earth system processes to be studied.

Article 7 The Applied Geophysics track

1. The Applied Geophysics programme is taught at three partner universities:
   - TU Delft
   - ETH Zürich
   - RWTH Aachen

2. The study programme is compiled in the following way:
   - First year Delft: A minimum of 24 credits should be passed from TU Delft subjects, including the following three compulsory courses:

     - AESM1511 Field Geophysics and Signal Analysis with Matlab/Python Exercises (6 ECs);
     - AES1540-11 Electromagnetic Exploration Methods (6 ECs);
     - AES1560 Advanced Seismology and Seismic Imaging (6 ECs).

Other courses:

Code	Title	ECs
AES1550-06	Geophysics Special Subjects	6
AESM1590-18	Seismic Acquisition to Data Information Content	6

- First year Zürich: A minimum of 25 credits should be passed from ETH Zürich subjects, including the following three compulsory blocks:

  - 651-4079-00L Reflection Seismology Processing (5 ECs)
  - 651-4104-00L and 651-4106-03L Geophysical Fieldwork and Processing (9 ECs)
  - 651-4094-00L and 651-4096-00L Modelling and Inverse Theory for Applied Geophysics (8 ECs)

Other courses:

Code	Title	ECs
651-4087-00L	Case Studies in Exploration and Environmental Geophysics	3
651-4096-02L	Inverse Theory II: Applications	3
651-4109-00L	Geothermal Energy	3
651-4240-00L	Geofluids	6
701-0106-00L	Mathematics V: Applied Deepening of Mathematics I – III	3

After the first year, a student should have passed a minimum of 50 credits.

- Second year Aachen: a minimum of 24 credits should be passed from RWTH Aachen subjects, whereby three of the following six blocks must be passed:

  - 53.14584 and 53.26003 Petrophysics for Applied Geophysics & Laboratory Practicals (6 ECs)
  - 53.14570 and 53.50132 Geophysical Logging and Log Interpretation (6 ECs)
  - 53.26000 Application of Geophysical Prospecting Methods in Earth and Environmental Science (6 ECs)
  - 53.18482 and 53.29469 Hydrogeophysics and Engineering Geophysics (6 ECs)
  - 53.42487 and ?? Numerical Reservoir Engineering & Scientific Machine Learning and Advanced Numerical Methods (6 ECs)
  - 54.12000 Research Module in Applied Geophysics (6 ECs)

Code	Title	ECs
53.14570	Geophysical Logging and Log Interpretation	6
53.18482	Hydrogeophysics	3
53.26000	Application of Geophysical Prospecting Methods in Earth and Environmental Science	6
54.12000	Research Module in Applied Geophysics	6
53.31439	Data Analysis in Geoscience	3
54.34827	Mineral Exploration	3
53.23301	Sedimentary Basin Systems	3
53.29469	Engineering Geophysics	3
53.33690	Remote Sensing of Sedimentary Basins	3
53.45471	Portfolio Management and Prospect Evaluation	3
54.24346	Energy Resource Management	3
53.42487	Numerical Reservoir Engineering: Geophysical process simulation	3
??	Scientific Machine Learning and Advanced Numerical methods	3
53.12002	Principles of Plate Tectonics	3
11.47549	Numerical Methods for Geophysical Flows	3
41.00220	Finite Elements in Fluids	6
81.18471	Economics of Technological Diffusion	6
12.53420	Machine Learning	6
53.32383	Underground Excavation	6
??	Final Disposal and Projects	3
??	Geological and Engineering Basics of Final Disposal	3
53.14584	Petrophysics	3

Code	Title	ECs
53.26003	Laboratory Practicals: Applied Reservoir Petrophysics	3
53.49932	Neotectonics and Earthquake Geology	3
??	Remote Sensing of Geohazards	3
53.30255	Seismic Interpretation and Well Integration	3
??	GIS-intensive course for Engineering Geohazards	3

Delft/Zürich/Aachen:

Code	Title	ECs
AESM2506	Final Thesis Applied Geophysics	30

3. The Intended Learning Outcomes (final attainments) of the Applied Geophysics track are as follows:

The graduate can…

a. Explain, discuss, and use fundamental scientific knowledge about wavefield, diffusive-field and potential-field methods of applied geophysics.
b. Design and conduct scientifically sound geophysical experiments, process the collected data, and analyse and interpret the processed results.
c. Develop and use mathematical models to simulate, process, and invert geophysical data and solve related subsurface characterisation and monitoring problems.
d. Perform a literature study, identify a knowledge gap in a topic in applied geophysics, formulate a research question, and build on existing knowledge in relevant fields that are required to solve the stakeholders' problems.
e. Improve methodologies for applied geophysics that drive technological innovations to improve the responsible and sustainable use of the Earth's subsurface.
f. Observe, characterise, and explain Earth system processes related to application areas of applied geophysics.
g. Challenge existing knowledge, show a constructive critical attitude, propose novel and creative solutions, and exercise independent judgement.
h. Use written and oral communication skills to effectively exchange information and ideas with scientists and engineers, the public, and other stakeholders in the field of applied geophysics.
i. Initiate, design, plan, and monitor a project to meet the requirements set by the stakeholder.
j. Work effectively in teams of diverse expertise, talents, skills, characters, and cultures.
k. Acquire new knowledge and skills to continue operating effectively.
l. Uphold and evaluate ethical standards for scientific integrity and evaluate societal and economic trade-offs and relevant ethical issues when developing technological innovations.

Paragraph 2
Annotations & Honours Programme

Article 8 Honours Programme

1. Motivated students who have completed all courses of the first quarter during the first quarter and have obtained an average grade of at least 7.5 for these courses, are invited by email to apply for participation in the Honours Programme Master CEG as described in the Teaching and Examination Regulations (TER) MSc, Article 10.

2. Students who fulfil the requirements as described in the Honours Programme Guidelines CEG, and are interested in the Honours Programme can send their application to the HPM coordinator together with an motivation letter in English, and a proposal and planning for their personal programme. The proposal students submit should show coherence within a specific theme. The requirements for designing the programme are described in the Honours Programme Guidelines CEG. The programme has to be approved by the Honours Programme Committee.

3. The programme proposal that the student has submitted to the Honours coordinator is considered for approval by the Honours Programme Committee, established by the Director of Education. For more information about application please check the Honours Programme Guidelines.

4. The Honours Programme Master has to be completed during the student's Master degree programme. None of the results may be lower than 6.0.

5. The assessment of the various components of the programme is carried out by the examiner concerned, who must be a TU Delft academic staff member. In special cases, a deviation from this requirement is permitted (Art. 5.3 Rules & Guidelines of the Board of Examiners).

Paragraph 3
Bridging Programme

Article 9 Transitional Programme for students with a Dutch Higher Vocational Institute Bachelor Degree

1. Students who want to be admitted to the Master's degree course on the basis of a relevant Dutch Higher Vocational Institute Bachelor degree have to complete the following transitional programme first:

Code	Title	ECs
AESB1130-21	Geology 1: Basics	5
AESB1230	Geology 2: North West Europe	5
AESB1211	Mathematics 1	6
AESB1320-17	Mechanics	5
AESB1440-21	Methodology of Geophysics and Remote Sensing	5
AESB2320	Physical Transport Phenomena	5
IFEEMCS010400	Lineaire Algebra	5
WI1909TH	Differential Equations	3
CTB2400	Numerical Methods for Differential Equations	3
CT2023	Programming in Python	4
IFEEMCS010500	Kansrekening en Statistiek	3

Paragraph 4
Deviation from the Examination Programme

Article 10 The Self-composed Study Programme

1. Students are free to compile examination programmes that are rounded off with a final exam. Such a programme needs prior approval by the Board of Examiners and it must consist entirely or mainly of subjects given in conjunction with the degree course but it can be complemented with subjects provided by or given in other courses.

2. The preliminary approval referred to in subsection 1 must be presented to the Board of Examiners by the student in the form of a justified request.

Paragraph 5
Examinations and Practicals

Article 11 Practicals and/or exercises

1. The course or module teaching takes the form of lectures, practicals and/or exercises.

2. Practicals and/or exercises must be completed before students participate in the examination, unless indicated otherwise in the study guide.

3. Unless specified otherwise by the corresponding course or module description in the study guide, the following rules apply with respect to improving an unsatisfactory result for a project or practical for which a student receives a (partial) grade:
   - **a.** If the result of a practical exercise is less than satisfactory, i.e. if the practical exercise is assessed with a grade 5.5 or lower, the grade for the practical exercise may be improved during the next teaching period, through one of the following options depending on the grade obtained:
     - » Grade 5.0 or higher: The student may submit an addendum to the original submission;
     - » Grade lower than 5.0: The student must redo the practical exercise completely, i.e. based on a new case or a new set of input parameters.
   - **b.** The maximum grade that can be obtained by improving an unsatisfactory result for a project or a practical is a grade 6.0.

Article 12 The Types of Examinations

1. The examinations linked to the different courses or modules are to be completed in the way laid down in the study guide pertaining to the course of module in question.

2. Examinations pertaining to courses or modules given by other programmes are to be completed in the way stipulated by, or on behalf of, the Teaching and Examination Regulations laid down by the relevant Programme.

Article 13 The Frequencies, Times and Sequences of the Exams

Article 13 has been moved to the Teaching and Examination Regulations.

Paragraph 6
Admission requirements to thesis Preparation Module and Master Thesis

Article 14 Access to the Thesis Preparation Module

The entry requirements for the Master Thesis Preparation Module can be found in the online study guide.

CONTENT

Article 15 Access to the Master Thesis Project

1. The entry requirements for the Master Thesis Project can be found in the online study guide.

2. Before starting the Master Thesis Project, the student must complete the AES-1 form, which can be downloaded from the CEG Student Portal. On the basis of that form the Student Administration will check, on behalf of the Board of Examiners, whether the student complies with the requirements laid down for the Master Thesis Project. If everything is in order the student can report so to the coordinator linked to the chosen discipline, and further compile the Master's examination programme.

3. Students may embark on the Master Thesis Project only when they have completed 75 EC of the AES track programme and completed the Thesis Preparation Module.

4. The final assessment is the meeting during which the assessment committee's chair grades the results of the student's work. The accompanying presentation constitutes part of the final assessment and takes place preferably on the same day as the final assessment. The final assessment has to occur within four weeks (the months of July and August excluded) after the final thesis report has been handed in.

Article 16 Working method of the Master Thesis Assessment Committee

1. As soon as the final study phase begins, the assessment committee's chair will indicate to the student which members of the assessment committee are directly involved in the student's supervision.

2. In consultation with at least two committee members, which should include the chair and the daily supervisor, the student must draw up a work plan which at least describes the subject and the approach and which gives a list of contents. The work plan must also contain a time schedule with dates for the interim meetings and the final presentation.

3. The date of approval of the work plan marks the official start of the Master Thesis Project. The daily supervisor will monitor the schedule.

4. Significant changes in the work plan must be approved by the assessment committee

5. During the final study phase there must be at least one interim meeting with the assessment committee to gauge the progress being made.

6. Before a presentation date can be agreed, the student must have completed all the other examination programme obligations and present the draft report to the complete assessment committee (the so-called green light meeting).

7. The examiner in the assessment committee from the other section (Article 23 Rules & Guidelines Board of Examiners) must at least participate in the deliberations from the moment of the assessment of the draft report text referred to in section 7.

8. After the student has received the assessment committee's approval the student must arrange a presentation date.

9. The final assessment and the presentation of the Master Thesis Project should be preferably planned on the same day. At least two of the three academic staff members of the assessment committee, one of whom must be the chair, have to be present at the time of the presentation.

10. Members of the assessment committee who are unable to be present at the time of assessment should react in writing, possibly by email, to the report received from the student beforehand. The reaction has to be addressed to the chair.

11. Each time the assessment committee evaluates matters, the student must compile an official report and post or mail it to the assessment committee for approval. If after a week no reaction has been received, the student can assume that the agreements detailed in the report have been accepted.

CONTENT

12. The chair is responsible for the assessment and determines the final mark after close consultation with the other committee members. The student will not be notified of the procedure that led to the determination of the final mark.

13. The daily supervisor or a member of the assessment committee appointed in conjunction with the daily supervisor is responsible for ensuring that the relevant Teaching and Examination Regulations and the Rules and Guidelines laid down by the Board of Examiners are adhered to, in particular whether the commencement stipulations are observed, the subsequent procedures are followed, and the Master Thesis Project is assessed according to uniform norms.

14. The daily supervisor must keep a record of how long the student has worked on the Master Thesis Project. If this has not been completed within a year, then the coordinator will ask the student and the assessment committee's chairperson why that is so. If the student subsequently does not progress fast enough, the coordinator will notify the Board of Examiners.

Paragraph 7
Transitional measures

Article 17 Transitional Rulings for students of Cohort 2021-2022 and before

1. In academic year 2022-2023 the Master programme Applied Earth Sciences will start with a new curriculum. The courses of the curriculum offered in academic year 2021-2022 will be gradually discontinued. These transitional rules apply to all students of the Master programme Applied Earth Sciences of cohort 2021-2022 and earlier, with the exception of students of the Applied Geophysics track, as the AG track will continue in the new programme.

2. The European Mining Course has been discontinued as of academic year 2021-2022. Students have until 31 August 2024 to complete the programme. There are no transitional measures in place for this programme.

3. Discontinued courses 2022-2023:

   c. All courses listed in Appendix A are discontinued as of academic year 2022-2023;
   d. Two final exam opportunities will be offered for these courses in academic year 2022-2023;
   e. As of academic year 2023-2024, when the courses have been fully discontinued (and the two examination opportunities of 2022-2023 have passed) replacement subjects from the new curriculum will be available for students. This equivalency matrix, per discontinued course, can already be found in Appendix A.

4. Choosing modules from the curriculum 2022-2023 as free electives:

   a. All Applied Earth Sciences students of cohort 2021-2022 and earlier may choose modules of the redesigned Applied Earth Sciences, Civil Engineering and Environmental Engineering programme in order to fill free elective space in their programme;
   b. Only entire modules can be selected;
   c. Course-specific content and learning objectives from the student's examination programme may not overlap with the content and learning objectives of the module of the new programme that the student wants to take as a free elective. Partial overlap is also not allowed.

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5. Switching to Applied Earth Sciences curriculum of academic year 2022-2023:
   a. Students can switch to the curriculum of 2022-2023 under the condition that they meet the admission requirements of the new curriculum;
   b. Earned credits from the old programme can be used to fill the free elective space within the new programme after switching, under the condition that the content and learning objectives of the completed courses of the old programme do not overlap with the content and the learning objectives of the compulsory modules of the new programme;
   c. Students who follow equivalencies that have fewer credits than the discontinued course have to follow additional specialization courses or free electives in consultation with their track coordinator in order to obtain the minimum of 120 credits needed to complete their MSc programme;
   d. Students who follow equivalencies that have more credits than the discontinued course can include these credits as specialisation courses or free electives;
   e. It is not allowed to include both a course and its equivalent in an examination programme.

6. Time period for these transitional rules:
   a. The transitional rules are valid until the end of academic year 2025-2026;
   b. Students within the old programme who have not finished their programme by the end of academic year 2025-2026 will automatically be transferred to the new programme and therefore must comply with the admission requirements of the new programme.

Article 18 Deviations from the programme

The Board of Examiners may allow students to deviate from the rules of the programme, including the transitional rules, if the achievement of the intended learning outcomes of the programme are safeguarded.

Article 19 When the rules do not provide

Insofar as this Annex does not provide for specific circumstances, the Board of Examiners will make a decision that is in line with this Annex to every extent possible and the Board of Examiners will also take Article 6 of the Rules and Guidelines for the Board of Examiners into account.

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Appendix A Discontinued courses 2022 – 2023 and equivalencies

All MSc Applied Earth Sciences[1] courses listed below are discontinued as of academic year 2022–2023 due to the start of the redesigned MSc Applied Earth Sciences programme. If an equivalent (part of a module) is available in the new programme from academic year 2023–2024, the module code and number of EC of the equivalency are listed in the table below.

Equivalency matrix				
code	course	EC	Equivalency	EC Eq.
AES1640-11	Environmental Geotechnics	4	CIEM2304	**5**
AES1720-11	Rock Mechanics Applications	5	CIEM2303	**5**
AES1730	Introduction to Geotechnical Engineering	3	CT1730HBO	**3**
AESM1305	Geo-Energy Engineering Challenge	12	No equivalency	**n.a.**
AESM1315	Energy Transition	3	AESM3003	**6**
AESM1320	Geology for Geo-Energy	5	AESM1001	**7**
AESM1325	Physics for Geosystems	5	AESM1002	**5,5**
AESM1330-21	Forward and Inverse Geomodelling	5	CEGQ1000	**8**
AESM1400	Geothermal Energy	3	AESM3003	**6**
AESM1405	Petroleum Exploration and Production	3	AESM3003	**6**
AESM1410	Subsurface Storage	3	AESM3003	**6**
AESM1415	Effects of Subsurface Engineering	3	AESQ403B1-1	**3**
AESM1420	Advanced Sedimentary Geology	3	AESQ305A3	**3**
AESM1425	Geomechanics and Structural Geology	3	AESQ305A2	**3**
AESM1430	Simulation and Building of Stratigraphy	3	AESQ304A1	**3**
AESM1435	Production Science and Technology	3	AESQ403B1-4	**3**
AESM1440	Multiphase Flow in Porous Rock	3	AESQ304A2	**3**
AESM1445	Dynamic Modeling and Optimization	3	AESM502C	**5**
AESM1450	Geophysical Prospecting	3	AESQ403B1-3	**3**
AESM1455	Numerical Methods for Subsurface Geoscience Simulation	3	AESQ304A3	**3**
AESM1460	Reservoir Characterisation and Petrophysics	3	AESM3003	**6**
AESM1465	Geologic Interpretation of Geophysical Data	3	AESQ403B1-2	**3**
AESM1470	Field Lab	3	AESM403B2	**3**
AESM1475	Outcrop Geology for Subsurface Characterization	3	AESM509C	**5**
AESM1630-19	Engineering Geology	5	CIEQ2112	**5**
AESM1700	Consolidation of Soils	3	CIEQ2001	**3**
AESM4370	Introduction to Geology	1	No equivalency	**n.a.**

CONTENT

1. *Students need to consult the Annex MSc CIE 2022-2023 for the equivalencies for courses with a CIE-code.*