



# TEACHING AND EXAMINATION REGULATIONS (TER)

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

**4TU MASTER DEGREE PROGRAMME**  
CONSTRUCTION MANAGEMENT AND ENGINEERING

ANNEX

2022  
2023

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# TER

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AND RESEARCH ACT [WHW]

**4TU** MASTER DEGREE PROGRAMME  
CONSTRUCTION MANAGEMENT AND ENGINEERING

2022  
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# Paragraph 1

## General

### Article 1 Applicability of the regulations<sup>1</sup>

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: the 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;

<sup>1</sup> 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.

- 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: all 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](http://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 Planning (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 Technology;
- » 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. Environmental Engineering:

- » 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;

- » 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 grant extension of the programme duration when a student is experiencing or has experienced 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.

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.

# Paragraph 4

## Registration for courses and examinations

### Article 12a Canceled

Not applicable.

### 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.

## 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.

## 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.

## 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

- 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.

# 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.

## 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**.

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*Adopted by the Dean of the faculty on 30 June 2023.*

# 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>

## 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.

## 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.



# ANNEX

**4TU** MASTER DEGREE PROGRAMME  
CONSTRUCTION MANAGEMENT AND ENGINEERING



2022

2023

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

# Paragraph 1

## Study programme

### Article 1 Study load of the degree programme and of each of the study components it comprises:

The study load of the Master programme is 120 credits. These 120 credits may by no means include any credits for courses that coincide with or were included in a previously passed Bachelor's examination.

### Article 2 Composition of the study programme

1. The study programme is composed as follows:
  - a. A set of compulsory courses as described in article 3 together comprising the 'core curriculum'.
  - b. A compulsory set of specialisation courses, as described in article 5 'specialisations'.
  - c. The graduation thesis, as described in section 2 of this article.
  - d. A set of elective courses, as described in article 6.
2. Students complete a graduation project in the field of their chosen specialisation that is worth 35 credits in total and consists of the following two components:
  - a. CME5100 Master Thesis Preparation, worth 5 credits, and
  - b. CME5200 Master Thesis, worth 30 credits.
3. Information about courses and admission requirements for courses can be found in the online study guide and on Brightspace.

### Article 3 Core curriculum: compulsory courses

The core curriculum consists of the following compulsory courses:

code	course	ECs
AR8003TU	Legal and Governance	5
CME4120	Information Systems for the Construction Industry	4
CME1201	Collaborative Design and Engineering	5
CME2300	Financial Engineering	4
CME4000	Project Management	6
CME4150	Managing Uncertainty & Data	4
CME4200	Intercultural Relations	2
CME4300	Engineering Asset Management	5
CTPM003A	Water Ethics*	5
WM0312CIE	Philosophy, Technology Assessment and Ethics for CIE*	4
WM0329TU	Ethics and Engineering*	6
WM0376TU	Ethics of Technological Risk*	5

*\*) Students must choose at least one out of these four ethics courses.*

## Article 4 Intended Learning Outcomes

### CME graduates are able to:

1. Develop and evaluate holistic management strategies by focussing on the coherence between technical and human aspects in order to optimise project performance.
2. Develop engineering asset and construction management systems to be used for planning, organizing, leading and controlling with the aim to effectively and efficiently design, build, maintain, operate and decommission.
3. Design and steer management processes to realize appropriate solutions that integrate contextual needs and requirements with a focus on value creation, legislation and societal impact.
4. Collaborate effectively in an interdisciplinary team with diverse talents, skills, characters and cultural backgrounds with the aim to optimize team performance.
5. Assess the risk and reliability of construction engineering systems using data, adequate assumptions and probability in order to support decision-making under uncertainty.
6. Develop information systems aimed at improving the performance of the construction industry by integrating disciplines and streamlining design, construction and asset management processes.
7. Identify relevant CME research and development challenges and address these by applying an appropriate research, development or design methodology.
8. Generate management solutions for the construction industry by challenging existing management theories, recognising gaps and reflecting on engineering management developments and innovations.
9. Effectively communicate research, design and development results and provide solid argumentation in discussion with colleagues, academia, the construction industry, the general public and other stakeholders.
10. Contribute to the sustainable development of the construction industry by independently judging the ethical, temporal and societal implications of their work, actions and decisions.
11. Critically reflect on their own work and the work of others given the state-of-the-art, and use this to autonomously develop their skills and extend their CME expertise beyond graduation.

## Article 5 Specialisations

There are three specialisations in the CME curriculum: Design & Integration, Engineering & Systems and Projects & People. All CME students must choose one of these specialisations. Each specialisation has its own set of compulsory courses.

1. Students who choose the specialisation **Design & Integration** have to complete the following courses:

code	course	ECs
CME4100	Process Management	5
CME4400	Entrepreneurial Engineering	5
CME5020	Research & Development Methods for P&P/D&I	3
AR0179	Value Capturing*	5
AR2MBE025	Urban and Infrastructure (Re)development Game*	10
TPM023a	Cost-Benefit Analysis: Theory and Application*	4

\*) Students must choose either I) AR2MBE025, or II) AR0179 and TPM023a.

2. Students who choose the specialisation **Engineering & Systems** must complete the following courses:

code	course	ECs
CME4170	Construction Technology	5
CME4481	Systems Engineering Design	5
CME4701	Construction Management Systems	5
CME5020	Research & Development Methods for E&S	5
CME4500	Engineering Systems Optimisation*	4
EPA1316a	Introduction to Data Science*	5
EPA1352	Advanced Simulation*	5
TPM024a	Methods for Risk Analysis and Management*	5

\*) Students must choose at least one of these courses, but may also choose multiple courses.

3. Students who choose the specialisation **Projects & People** have to complete the following courses:

code	course	credits
CME2201	Dynamic Control of Projects	4
CME4100	Process Management	5
CME4600	Leadership and Strategic Management	4
CME5020	Research & Development Methods for P&P/D&I	3
CME4800	Procurement of Complex Public Projectst*	5
CME4850	Forms of Collaboration in Civil Engineeringt*	4
TPM024a	Methods for Risk Analysis and Management*	5

\*) Students must choose at least one of these courses, but may also choose multiple courses.

## Article 6 Electives

Next to following the compulsory core and the specialisation courses, CME students have up to **30 credits** available to spend on elective courses. The exact amount of credits available for the elective courses depends on the chosen specialisation and the corresponding specialisation courses chosen.

1. Elective courses may be any Master's level course at Delft University of Technology, or alternatively at any Dutch or international university with which TU Delft has an exchange-contract, provided that the course is instrumental in deepening the CME knowledge or broadening the CME perspective.

The following general rules apply for the courses in the elective space:

- Graduate school courses are not allowed.
  - Language courses are not allowed.
  - At maximum only 1 course from the Athens program is allowed.
2. As part of the elective space, students may follow any course from any of the CME specialisations that is not already part of their set of specialisation courses. In addition, students may include the following general electives in their elective space:

### a. Technical writing course

Students are allowed to complete one of the following courses:

code	course	ECs
WM0201TU-Eng	Technical Writing*	2
TPM305A	Writing a Master's Thesis in English	2

\*) This course is only allowed if the student did not complete this course as part of the Bridging programme.

### b. Project course

Students may choose at maximum only 1 of the following project courses in their elective space:

code	course	ECs
CME2100-11	Research Internship	10
CME4900	Open Design Contractor Project	10
CME4950	Research and Development Project	10
TUD4040-10EC	Joint Interdisciplinary Project	10*

\*) Please note that the Joint Interdisciplinary Project only counts for 10 credits towards the CME programme.

3. Per specialisation, additional direction and requirements with regard to the electives may be given. The set of electives chosen by the students are to be submitted for approval as part of the [Individual Study Plan \(ISP\)](#) as formulated in article 7.

## Article 7 Registration of Study Programme

1. All CME students must submit an Individual Study Plan (ISP) before the end of their first semester. The individual study plan provides an overview of the full MSc programme the student intends to follow and is worth a minimum of **120 credits**, including all compulsory courses, all specialisation courses and all electives. For the submission of the individual study plan, the following rules apply:
  - d. All students of cohort 2019-2020, and of later cohorts, must submit their individual study plan using My Study Planning.
  - e. All students of cohort 2018-2019, and of earlier cohorts, must submit their individual study plan using an ISP1-form and follow the directions given on the ISP1-form.
2. All submitted individual study plans are assessed by the CME Director of Studies and/or the CME specialisation coordinators on behalf of, and in consultation with, the Board of Examiners. Approval of the individual study plan is granted when, in judgement of the Board of examiners, it is plausible that the proposed programme leads to the achievement of the final attainments of the programme as formulated in article 4 of this Annex.
  - a. Students who submit their individual study plan using My Study Planning are informed of the ISP evaluation through My Study Planning.
  - b. Students who submit their individual study plans using an ISP1-form are informed of the ISP evaluation by e-mail.

If an ISP is not approved, the student must adapt the ISP based on the directions given in the evaluation and resubmit. Once approved, the individual study plan is registered in Osiris and used to monitor the students' progress, as well as to check whether the student has fulfilled all components of the ISP to graduate.

3. During the course of the study programme, students may always request to change their specialisation, and thereby their specialisation courses, as well as request to change their elective courses:
  - a. Students who have submitted their individual study plans using My Study Planning may request a change of their study programme through My Study Planning.
  - b. Students who have submitted their individual study plans using an ISP1-form may request a change of their study programme using an ISP2-form.

Any request for changes of the study programme are assessed by the CME Director of Studies and/or the CME specialisation coordinators on behalf of, and in consultation with, the Board of Examiners. Students are informed of the evaluation of any change request as formulated in article 7 section 2.

## Article 8 Honours Programme Master

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, can apply for 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](#) and are interested in the Honours Programme can send their application to the HPM coordinator together with a motivation letter in English, and a proposal and planning for their personal honours 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. 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](#)).
6. CME Students who are admitted to the Master's Honours Programme CEG may complete the **15 credits** of the faculty (organized) component mentioned in the TER article 10.2, section b by means of assignments and courses offered by, and with a supervisor from, any of the faculties involved in the interfaculty MSc CME programme.

## Paragraph 2

# Regulations for admission

### Article 9 Regulations for Admission to MSc CME

1. Individuals holding one of the following degrees have direct access to the **MSc CME**:
  - 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 and Management from University of Twente, Bachelor degree Industrial Engineering from Eindhoven University of Technology  
Bachelor degree Sustainable Innovation from Eindhoven University of Technology.
2. Students who have completed a HBO Bridging, or Premaster, Programme for CME at Eindhoven University of Technology or at University of Twente have direct access to the MSc CME.
3. Students with a Bachelor degree from either:
  - Delft University of Technology other than Architecture, Urbanism and Building Sciences (Bouwkunde), Civil Engineering (Civiele Techniek) or Systems Engineering, Policy Analysis and Management (Technische Bestuurskunde),
  - Eindhoven University of Technology other than Architecture, Urbanism and Building Sciences, Industrial Engineering or Sustainable Innovation, or
  - University of Twente other than Civil Engineering or Industrial Engineering and Management have the following options to get admitted to the MSc CME:

#### a. Bridging Minor

To get admitted to the MSc CME, complete the minor:

code	course	ECs
CT-MI-174	Project Management: from Nano to Mega (minor)	30

#### b. Custom Bridging Programme

Alternatively, students may request permission to do an individually tailored bridging programme in consultation with and pending approval by the Director of Studies.

4. Students with a Bachelor degree awarded by a Dutch higher vocational institute ("HBO") can only be admitted to the MSc CME after finalising the HBO Bridging programme as mentioned in article 10.

## Article 10 HBO Bridging programme

1. To be admitted to the MSc CME, students taking part in the HBO bridging programme must complete all of the following courses at Delft University of Technology adding up to **38 credits**:

code	course	ECs
CTB1210	Dynamics & Modelling	5
CT2023	Programming in Python	4
CTB2400	Numerical Mathematics	3
CTB3420	Integral Design of Infrastructure	4
IFEEMCS010400	Linear Algebra	5
IFEEMCS010500	Probability and Statistics	3
IFEEMCS012100	Calculus for Engineering, part 1	3
IFEEMCS012200	Calculus for Engineering, part 2	3
IFEEMCS012300	Calculus for Engineering, part 3	3
WI1909TH	Differential Equations	3
WM0201TU-Eng	Technical Writing	2

## Paragraph 3

### Deviate from examination programme

#### Article 11 Deviate from the examination programme

The Board of Examiners may allow students to deviate from the examination programme.

#### Article 12 When the rules do not provide

When the rules stipulated in this Annex do not provide for specific circumstances, the Board of Examiners will make a decision that is in line with the [Teaching and Examination Regulations \(TER\)](#), this Annex and article 6 of the [Rules & Guidelines \(R&G\)](#) into account to every extent possible.

## Paragraph 4

### Examinations and Practical Exercises

#### Article 13 Number and frequency of the examinations and practical exercises

1. Written and oral (interim) examinations are taken during or immediately following the teaching period in which the education is provided.
2. At least one repeat opportunity (resit) is offered for each written (interim) examination. A timetable of these repeat examinations is published at the beginning of the study year.
3. Practical exercises can be done in agreement with the relevant timetables.

## Article 14 Format of examinations

1. The (interim) examinations are taken in the manner prescribed for the relevant course in the digital study guide.
2. (Interim) examinations of courses, which are given by another programme to the CME programme are taken in the manner determined in or in accordance with the Education and Examination Regulations for CME.

## Article 15 Participation in practical exercises or project work

1. The MSc CME includes several courses that include practical exercises and/or project work. Practical exercises and/or project work can also be part of a course in addition to another form of examination. More information about any practicals or projects is given by the corresponding course descriptions in the [study guide](#).
2. Principally, the opportunity to participate in any practical or project is offered only once per year. If a student has not been able to participate in a practical or project in accordance with the regular schedule and the student cannot participate in the next opportunity within the regular schedule, the student can:
  - a. Request a resit with the Board of Examiners if:
    - » the student missed the regular opportunity due to special personal circumstances;
    - » is unable to participate in the next regular opportunity;
    - » meet any other criteria the Board of Examiners sets for the request of an extra resit.
3. Unless otherwise specified by the corresponding course description in the study guide, the following rules apply with respect to improving an unsatisfactory result for a practical or project:
  - a. If the result of a practical or project is less than satisfactory, i.e. if the practical exercise is assessed with a grade 5.5 or lower (rounded off to halves), the grade for the practical or project may be improved during the next teaching period (being the teaching period following the teaching period in which the corresponding course is taught), 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 or project 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 practical or project is a grade 6.0

# Paragraph 5

## Admission to start the graduation project

### Article 16 Conditions for admission to start the Master Thesis

1. Students may start the graduation project, as described in article 2 section 2, and thus start the course CME5100 Master Thesis Preparation (5 credits), if they have successfully completed all courses of the first year of the Master, as well as all courses of the first quarter of the second year of the Master, within the minimum amount of study time possible and in accordance with their individual study planning as registered in accordance with article 7.
2. Students who have not successfully completed all courses of the first year and the first quarter of the second year within the minimum amount of study time possible, may start the graduation thesis project, as described in article 2 section 2, and thus start the course CME5100 Master Thesis Preparation (5 credits), only if they meet the following requirements:
  - a. The student has completed at least 75 credits worth of courses out of the minimum 120 credits required for the study programme.
  - b. The student has completed CIE4030 Methodology for Scientific Research (3 credits), and

code	course	ECs
CME5020	Research & Development Methods for P&P/D&I	3
CME5030	Research & Development Methods for E&S	5

c. The student has completed either one of the following ethics courses:

code	course	ECs
TPM003A	Water Ethics	5
WM0312CIE	Philosophy, Technology Assessment and Ethics for CIE	4
WM0329TU	Ethics and Engineering	6
WM0376TU	Ethics of Technological Risk	5

## Paragraph 6

# Transitional Rulings

### Article 17 Transitional rulings related to curriculum changes for the academic year 2020-2021

- For students of cohort 2019-2020, and of earlier cohorts, who did not complete the course CIE4381 Engineering Asset Management (4 credits) in their compulsory programme, the following transitional ruling applies:
  - Students must complete the course CME4300 Engineering Asset Management worth 5 credits.
- For students of cohort 2019-2020, and of earlier cohorts, who did not complete the course SPM8000 Project Management (7 credits) in their compulsory programme, the following transitional ruling applies:
  - Students must complete the course CME4000 Project Management worth 6 credits.
  - If a student requires the 1 remaining credit to reach the minimum total of 120 credits for the MSc, this credit may be addressed by any elective as described in article 6.
- For students of cohort 2019-2020, and of earlier cohorts, who did not complete the course SPM8002 Process Management (7 credits) in their compulsory programme, the following transitional ruling applies:
  - Students must complete the course CME4100 Process Management worth 5 credits.
  - If a student requires the 2 remaining credits to reach the minimum total of 120 credits for the MSc, these credits may be addressed by any elective as described in article 6.
- For students of cohort 2019-2020, and of earlier cohorts, who did not complete the course CME2200 Dynamic Control of Projects (4 credits) in their compulsory programme, the following transitional ruling applies:
  - Students must complete the course CME2201 Dynamic Control of Projects worth 4 credits.
- For students of cohort 2019-2020, and of earlier cohorts, who did not complete the course WM0312CIE Philosophy, Technology Assessment and Ethics (4 credits) in their compulsory programme, the following transitional ruling applies:

Students must complete either one of the following courses:

code	course	ECs
TPM003A	Water Ethics	5
WM0312CIE	Philosophy, Technology Assessment and Ethics	4
WM0329TU	Ethics and Engineering	6
WM0376TU	Ethics of Technological Risk	5

- For students of cohort 2019-2020, who did not complete the compulsory synchronisation course CME1220 Integration of Architecture and Engineering (3 credits) in their programme, the following transitional ruling applies:
  - If a student requires the 3 credits to reach the minimum total of 120 credits for the MSc, these credits may be addressed by any elective as described in article 6.
- For students of cohort 2019-2020, who did not complete the compulsory synchronisation course WI2180LR-II Probability and Statistics (4 credits) in their programme, the following transitional ruling applies:
  - If a student requires the 4 credits to reach the minimum total of 120 credits for the MSc, these credits may be addressed by any elective as described in article 6.

## Article 18 Transitional rulings related to curriculum changes for the academic year 2021-2022

1. For students of cohort 2020-2021, who have not completed their specialisation courses, the following transitional ruling applies:
  - Students may choose to complete the specialisation courses according to the curriculum for the academic year 2021-2022 or according to the curriculum for the academic year 2022-2023.

## Article 19 Transitional rulings related to curriculum changes for the academic year 2022-2023

1. For students of cohort 2021-2022, and of earlier cohorts, who did not complete the course CIE4030 Methodology for Scientific Research (3 credits) in their programme, the following transitional rulings apply:

Students may choose to:

- a. Complete the course CIE4030 through the assignments offered for this course in 2022-2023,
  - b. Students who follow the specialisation Design & Integration or the specialisation Projects & People may complete the course CME5020 Research and Development Methods for P&P/D&I worth 3 credits instead.
  - c. Students who follow the specialisation Engineering & Systems may complete the course CME5030 Research and Development Methods for E&S worth 5 credits instead.
2. For students of cohort 2021-2022, and of earlier cohorts, who did not complete the course CIE4120 Information Systems for the Construction Industry (4 credits) in their programme, the following transitional ruling applies:
    - Students must complete the course CME4120 Information Systems for the Construction Industry worth 4 credits.
  3. For students of cohort 2021-2022, and of earlier cohorts, who did not complete the course CIE4130 Probabilistic Design (4 credits) in their compulsory programme, the following transitional ruling applies:

Students may choose to:

    - a. Complete the course CIE4130 through the two resits offered for this course in 2022-2023,
    - b. Complete the course CME4150 Managing Uncertainty & Data worth 4 credits instead
  4. For students of cohort 2021-2022, and of earlier cohorts, who did not complete the compulsory synchronisation course CME4130 Probabilistic Design Practical (2 credits) in their programme, the following transitional ruling applies:
    - If a student requires the 2 credits to reach the minimum total of 120 credits for the MSc, these credits may be addressed by any elective as described in article 6.
  5. For students of cohort 2021-2022, and of earlier cohorts, who follow the specialisation Engineering & Systems and did not complete the specialisation course CIE4481 Systems Engineering Management (4 credits) in their programme, the following transitional ruling applies:

Students may choose to:

    - a. Complete the course CIE4481 through the assignments offered for this course in 2022-2023,
    - b. Complete the course CME4481 Systems Engineering Design worth 5 credits instead.
  6. For students of cohort 2021-2022, and of earlier cohorts, who follow the specialisation Engineering & Systems and did not complete the specialisation course CME4700 Construction Management Systems (4 credits) in their programme, the following transitional ruling applies:

Students may choose to:

    - a. Complete the course CME4700 through the assignments offered for this course in 2022-2023,
    - b. Complete the course CME4701 Construction Management Systems worth 5 credits instead.
  7. For students of cohort 2021-2022, and of earlier cohorts, who follow the specialisation Projects & People and did not complete the specialisation course CME5000-19 Procurement of Complex Projects (4 credits) in their programme, the following transitional ruling applies:

Students may choose to:

    - a. Complete the course CME5000-19 through the assignments offered for this course in 2022-2023,
    - b. Complete the course CME4800 Procurement of Complex Public Projects worth 5 credits instead.

8. For students of cohort 2021-2022, who have not completed their specialisation courses, the following transitional ruling applies:
  - Students may choose to complete the specialisation courses according to the curriculum for the academic year 2022-2023.

## Article 20 Transitional rulings related to changes in the HBO bridging programme

1. For bridging students of cohort 2020-2021 or before, who have not completed Analyse 1, 2 and/or 3, the following transitional ruling applies:

Students must complete the following courses respectively:

code	course	ECs
IFEEMCS012100	Calculus for Engineering, part 1	3
IFEEMCS012200	Calculus for Engineering, part 2	3
IFEEMCS012300	Calculus for Engineering, part 3	3

2. For bridging students of cohort 2020-2021 or before, who have not completed WI2031TH Kansrekening en Statistiek voor HBO-instromers, the following transitional ruling applies:
  - Students must complete the course IFEEMCS010500 Probability and Statistics worth 3 credits.
3. For bridging students of cohort 2020-2021 or before, who have not completed WI1807TH1 Lineaire Algebra 1, the following transitional ruling applies:
  - Students must complete the course IFEEMCS010400 Linear Algebra worth 5 credits.

