

Education and Examination Regulations

Civil Engineering and Management
Construction Management and Engineering

2020-2021

Introduction

This document is the Students' Charter CEM / CME, hereinafter referred to as SC-CEM/CME, and consists of the following:

- Study Guide CEM / CME
- Master version of the UT Education and Examination Regulations (OER: articles 1 to 8)
 - Programme-specific appendix for the Master programmes Civil Engineering and Management and Construction Management and Engineering
 - Programme-specific appendix for the Education and Examination Regulations
- Rules and Regulations of the Examination Board

Rights can be derived from the SC-CEM/CME by the faculty as well as by the students of the programme for which the student has enrolled. This does not apply with respect to all other written and electronic publications, such as:

- The information on the websites of the programmes: www.utwente.nl/cem and www.utwente.nl/cme (except the SC-CEM/CME)
- The study catalogue of the UT: <http://osiris.utwente.nl/student/OnderwijsCatalogus.do>
- Brochures and manuals

The SC-CEM/CME is published on the website of the programme. A printed version will be made available free of charge upon request.

In situations not covered by the SC-CEM/CME a decision will be made by the dean or by the Examination Board, depending on the responsibilities defined by law. The same applies in the event of (alleged) ambiguity, inconsistencies, differences in interpretation and/or (apparently) conflicting texts. The dean or the Examination Board will inform the involved examiner(s) and/or the student(s) of the decision.

In cases in which strict application of the SC-CEM/CME would cause clearly unintended or unreasonable situations, the Examination Board, the dean or the programme director can deviate from the regulations, provided that this does not have any negative effects for the student. This decision must be motivated in writing and must be communicated to the student, the Examination Board, the dean, the programme director and Bureau of Educational Affairs (BOZ).

Articles in this regulation refer to this SC-CEM/CME. If an article refers to legislation, the reference is to the Higher Education and Research Act (HERA), unless stated otherwise.

Reference: Enschede, 11 June 2020

Prof. dr. ir. H.F.J.M. Koopman

Dean of the Faculty of Engineering Technology

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Definition of terms for Civil Engineering and Management

The terms used in these Regulations should be interpreted as follows:

Academic Year:	The period beginning on 1 September and ending on 31 August of the following year.
Admission board:	Board consisting of the Programme director, the Programme coordinator, the track coordinators and the Pre-Master coordinator. The board is responsible for handling requests for admission by: <ul style="list-style-type: none">• Students from Universities of Applied Sciences (HBO) or students with another Dutch degree than the UT B-CE programme. In practice, the responsibility of this task of the admission board is with the Pre-Master coordinator.• Students with a Bachelor's degree from universities abroad. In practice, the responsibility of this task of the admission board is with the Programme coordinator.
BOZ-CE	Bureau of Educational Affairs Civil Engineering
Canvas:	University of Twente's digital learning environment.
CE:	Civil Engineering department of the Faculty of Engineering Technology
Compulsory holiday:	Required day off work.
Curriculum:	The aggregate of required and elective study units constituting a degree programme as laid down in the programme specific appendix.
Deficiency:	Shortcomings in the previous education, as established by the Examination Board, that need to be corrected in order to allow the student to successfully complete the programme in 2 years.
ELO:	The electronic learning environment website that supports the programme for a specific examination or course (generally Canvas)

European Credit (EC):	A unit of 28 study load hours, in accordance with the European Credit Transfer System. A full-time academic year consists of 60 credits, equal to 1680 hours of study (Article 7.4 of the Higher Education and Research Act).
Exam:	An investigation into the knowledge, insight, or skills of the student, as well as the assessment of the results of that investigation (Article 7.10 of the Higher Education and Research Act); an exam may consist of a number of tests.
Examination Board:	The Examination Board is the body that objectively and professionally assesses whether a student meets the conditions laid down in the Education and Examination Regulations regarding the knowledge, understanding and skills required to obtain a degree.
Examiner:	The individual appointed by the Examination Board to administer examinations and tests and to determine the results, in accordance with Article 7.12 (c) of the Higher Education and Research Act.
Exemption:	Establishing by the Examination Board that a student has acquired competences, i.e. on account of exams or final examinations in the higher education domain passed earlier, or knowledge or skills acquired outside the higher education domain, that are comparable in content, size and level to one or more study units or parts thereof.
Faculty:	The Faculty of Engineering Technology of the University of Twente
Faculty Board:	Head of the faculty (Article 9.12 of the Higher Education and Research Act).
HERA:	The Higher Education and Research Act (abbreviated in Dutch to HERA), Bulletin of Acts and Decrees 1992, 593, and its subsequent amendments.
Institution:	University of Twente.
Institutional administration:	The Executive Board, except as otherwise specified.

Osiris:	System designated by the institutional administration for registration and for providing information on all relevant data related to the students and the university, as described in the Higher Education and Research Act.
PCC (CPO):	Personal Circumstances Committee. A committee convened by the institutional administration to advise the institutional administration in individual cases regarding the validity, duration and severity of a specific student's extenuating personal circumstances.
Pre-Master programme:	Programme to be completed by students with a degree from Universities of Applied Sciences before they are admitted to the CEM or CME Master programme
Programme Committee:	Programme Committee as referred to in Art. 9.18 of the Higher Education and Research Act.
Programme director:	The programme director of the programmes CEM and CME.
Student:	Anyone enrolled in a programme in accordance with article 7.34 and 7.37 of the Higher Education and Research Act
Study Adviser:	Person appointed by the Faculty Board who acts as contact between the student and the programme, and in this role represents the interests of the students, as well as fulfilling an advisory role.
Track coordinator:	Member of the scientific staff responsible for providing advice on, and establishing the Master programme, including any deficiencies.
UT:	University of Twente.
Website:	The websites www.utwente.nl/cem or www.utwente.nl/cme
Working day:	Any day from Monday to Friday with the exception of official holidays and the prearranged compulsory holidays ('brugdagen') on which the staff are free.

Practical Information

Dean of the faculty	<i>Prof. dr. ir.</i> H.F.J.M. Koopman
Programme director	<i>Dr. ir.</i> D.C.M. Augustijn
Programme coordinator	M. Hamhuis
Study adviser	<i>Ir.</i> M.J.B. Duyvestijn
Pre-Master coordinator	J.G.M. Kemna
Bureau of Educational Affairs (BOZ)	BOZ-CE-CES@utwente.nl

Programme Committee (OLC)

The Programme Committee is responsible for monitoring and approving of the content as mentioned in HERA art.9.18, and quality of the programmes of Civil Engineering. In the Programme Committee both scientific staff and students are equally represented.

Chair: *Prof. dr.ir.* K.T. Geurs

Bureau of Educational Affairs (BOZ) acts as register for the Education Committee.

Examination Board

The examination board makes objective and well-grounded decisions on whether the student meets the requirements in terms of his or her end level, and guards the standards for the end level itself.

Assessment is an important subject in this. Assessments refers to all sorts of assessments: oral and written exams, papers, bachelor- and master theses and so on. The composition of the Examination Board for Civil Engineering can be found on the [website](#) of the CE/CEM/CME Examination Board.

Study Association

Concept (www.concept.utwente.nl)

Facilities

1. For all communication connected to the programme as well as in all administrative procedures Canvas, internet or intranet will be used. The University of Twente is using an electronic learning environment. In the organization of the programmes CEM and CME the assumption is that students are in possession of a laptop. Engineering Technology students can use the offer of the Notebook Service Centre (NSC) for this purpose. Via their laptop, students can use the network of the university, which provides access to Canvas, the internet and intranet.
2. Use of computer and network facilities for other purposes than study may be regarded as misuse.
3. When they first enroll with the University of Twente, each student will be provided with an individual student email account.

4. The programme Civil Engineering employs a site on the electronic learning environment (ELO). All electronic communications by the programme will be conveyed via this site. All students are requested to enroll for this programme site from the start of their study.
5. The university has lecture rooms and tutorial rooms, facilities for guided and independent self-study, a library and research facilities for educational purposes. The university offers limited facilities for free computer access.
6. The programme will provide accommodation to the study association for their activities.
7. Misuse of or damage to facilities of the University of Twente, or misconduct can, in addition to leading to claims for compensation, lead to a decision by the dean to temporarily exclude the student from participation in the programme, tests, exams and examinations.
8. Books and journals relevant to CEM and CME can be found in the Central Library of the University of Twente. Regulations concerning the quantity of books on loan, the lending period and fines are determined by the University Library.
9. If excursions, work visits, field work, etc. are a part of the programme (either compulsory or optional) that students are expected to take part in, the maximum contribution to the costs per student per excursion will be 10 Euro, for a maximum of 4 excursions per year. Any costs exceeding this will be for the account of the university. If the above activities take more than one day, the programme will take care of proper accommodation.

Education Systems

- The University of Twente uses an electronic learning environment (Canvas <http://canvas.utwente.nl>). Canvas is filled per course and contains detailed course information, assignments, etc.
- The University of Twente uses a student information system (Osiris, <http://osiris.utwente.nl/student>). Osiris contains information on the programme and global course information. It is used for exam registration and for the registration of grades.

Quality Assurance

Quality Assurance involves carrying out the following activities on an annual basis:

- Digital questionnaires (inquiries) at the end of every quartile
 - These inquiries are taken by the participating students at the end of every quartile for every course.
- Comprehensive course evaluation
 - Upon the request of the OLC, the Civil Engineering Evaluation Committee performs evaluation reports each quarter which are discussed in the OLC meeting.
- Yearly analysis of the results of the NSE (national student survey) and the NAE (national alumni survey)

- Performance Reviews
 - Results of activities stated in the first two items are brought to the attention of chair holders, to allow them to address these issues in their annual performance appraisals with all employees.
- Educational professionalization
 - Members of the scientific staff must have a (university) teaching qualification (Basis Kwalificatie Onderwijs) or given the opportunity to acquire/maintain this qualification.
- Occasional activities
 - If necessary, in addition to the activities mentioned above, further assessments are carried out (such as assessment of facilities, how time is spent, exit evaluations, surveys among alumni, etc.)

Student counselling during the Master programme

Student counselling is available during the Master programme. The Study Adviser (Monique Duyvestijn) guides the student and offers advice on study-related matters, as well as personal problems that may affect their studies if the student so desires.

- If a student wishes to exercise their right to specific guidance or special facilities, they are required to contact the Study Adviser. The Study Adviser will record any agreements made with the student.
- The following applies to the entitlement to special facilities:
 - demonstrable force majeure or personal circumstances;
 - if necessary and possible, dispensation from participation in exams or tests and/or the availability of special facilities with regards to testing. Such dispensation and additional testing opportunities can only be granted by the Examination Board.

The track coordinator can be consulted by Master students as well. The track coordinator is a staff member of the department of the chosen specialization of the student. The track coordinator can be consulted for programme or content related questions.

Procedure for intake, planning and registration of the Master programme

- The student is responsible for setting up his/her own Master programme. The track coordinator (MSc-track coordinator) is available for consultation, e.g. in case of specific questions or exceptions.
- At the start of the Master, the student can plan a meeting with the track coordinator for discussing the programme individually. The track coordinator can give advice on the content and suitability of courses within a profile, and checks whether the intended programme satisfies the conditions of at least one of the profiles. If there is any doubt, the track coordinator directs the student to the Examination Board. The intended programme is not processed formally at this moment by the Bureau of Educational Affairs (BOZ).
- During the Master, the student is free to change one or more courses of the programme, provided that it still matches the requirements of one of the defined profiles.
- Around the start of the Preparation MSc-thesis course (i.e. 3 months prior to the start of the course preparation MSc thesis), the final Master programme will be checked by the Office of Educational Affairs. In case the profile requirements are satisfied, the profile will be administered in the student's examination programme in Osiris.

Complaints

Complaints about the (organization of the) programme can be sent to the programme director, the programme coordinator or the study association. Complaints about the tests, exams and examinations can be sent to the Examination Board. Appeals, complaints and objections are possible via the Complaints Desk at Student Services (Vrijhof).

The Master programme's in short

Both programmes consist of courses of 5 EC each, with a study workload of 85 EC in all. The MSc-Thesis preparation is 5 EC and the final thesis is 30 EC. Together, the programme consists of 120 EC.

Below: course schedule for nominal programming

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Year 1	Courses (15 EC)	Courses (15 EC)	Courses (15 EC)	Courses (15 EC)

Year 2	Courses (15 EC)	Courses (10 EC)	Master thesis (30 EC)
		Master thesis preparation (5 EC)	

In the figure above the outline of a regular Master programme is given. The programmes and time tables will be published on the websites:

- <http://www.utwente.nl/cem>
- <http://www.utwente.nl/cme>
- <https://rooster.utwente.nl>

Course information can be found via: <https://osiris.utwente.nl/student/OnderwijsCatalogus.do>

Explanation:

In each study period - called a quartile - several courses are offered. The regular study load for a quartile is 15 EC in a period of 10 weeks, in which an EC equals a time spent of about 28 hours.

Programme Specific Appendix to the EER for the Master programmes Civil Engineering and Management & Construction Management and Engineering

The rules set out in this Appendix are an addition to the Education and Examination Regulations for Master Programmes at the University of Twente. This document concerns Civil Engineering and Management (CEM) - CROHO 60026 - and Construction Management and Engineering (CME) - CROHO 60337 - of the Faculty of Engineering Technology.

1. Content of the Programme and Associated Examination

1.1 Objective of the programmes

The programmes CEM and CME both aim to offer such knowledge, skills and understanding in the area of Civil Engineering, as well as the subareas Business Administration and Public Administration, that graduates are qualified to enter into an independent profession at the Master level.

1.2 Teaching methods

- **Lecture:** a plenary meeting for students intended for the transfer of information.
- **Tutorial:** a meeting (for a subgroup of the population) intended to enable students to process the course matter (also known as self-study).
- **Colstruction:** combination between a lecture and a tutorial.
- **Assignment:** the execution of a design or research assignment.
- **Practical:** a practical training in the sense of art. 7.13, section 2 item d of the HERA. This concerns the participation in an educational activity aimed at the acquisition of skills, such as making an assignment or a test design, carrying out tests and experiments, and taking part in field work or an excursion.
- **Project:** executing a design or research assignment as a team.

1.3 Examination

The programmes CEM and CME both require the following examination:

The final MSc-thesis examination.

1.4 Master Courses

On the websites <http://www.utwente.nl/cem> and <http://www.utwente.nl/cme> an overview of all the offered courses in the Master programme CEM and CME can be found (curriculum). Each course is 5 EC except for the MSc-thesis which is 30 EC. For each part of an examination of a course a description, the manner of testing, the composition of the final grade (including weighting factors), and the structure and exact schedule of the programme must be announced on the respective Canvas site at the beginning of the course.

2. Organization of the programme

2.1 Specialisations

The CEM programme offers four specialisations (or tracks). The specializations are subdivided in profiles. Students specialize in one of the following directions by selecting a profile:

- Construction Management and Engineering with profiles:
 - Markets & Organization of Construction
 - Digital Technologies in Construction
- Transport Engineering and Management with profiles:
 - Integrated Urban Transport
 - Transport and Logistics
- Water Engineering and Management with profiles:
 - Integrated Water Management
 - River and Coastal Engineering
- Integrated Civil Engineering Systems:
 - Civil Engineering Structures
 - Modelling and Forecasting
 - Sustainability
 - Smart Cities

The CME programme is the same as the specialisation Construction Management and Engineering. Students can select either the profile ‘Markets & Organization of Construction’ or ‘Digital Technologies in Constructions’.

A Master programme (120 EC) consists at least of:

- Courses with a study workload of 85 ECs
- The course 'Preparation MSc-Thesis' of 5 ECs
- A final Master Thesis of 30 EC

The student has to take at least 30 EC in profile courses. In addition, the student chooses profile electives, for which courses can be selected either within the specialisation or within CEM/CME. The students are free to choose 15 EC as free electives. This can be any course at the University of Twente or at a recognized (foreign) partner university. If a student exceeds the maximum of 15 EC for free electives, e.g. for an exchange semester, permission of the Examination Board must be requested.

Detailed information on the curriculum, profile courses and suggested profile electives for each profile can be found on the website of [CEM](#) and [CME](#).

Students with a Dutch university education other than the Bachelor Civil Engineering can compensate their deficiencies (with a max of 15 EC) during their Master programme; however the courses they take to compensate their deficiencies are extracurricular and are on top of the 120 EC of the Master programme.

Students that enter the programme select their specialisation and profile at the very start of the programme. They can consult the track coordinator of the corresponding specialization. The entire programme of the student must comply with the final qualifications of the Master programme. The track coordinator is mandated by the Examination Board to approve an individual programme. When there is any doubt whether an individual programme meets the final qualifications of the programme, the track coordinator can redirect the student to the Examination Board for approval of his/her programme.

2.2 Organization of practicals

Practicals can be part of a course or a project. Generally, a student has one attempt per study year to fulfil such a practical if it is part of the examination of a course. However, when a student is unable to do the practical exercise outside their control, the Examination Board will attempt to give the student another opportunity to do the practical.

2.3 Number and order of the exams and practicals

For the number of exams and periods, see paragraph 1.4.

The following applies in addition to/ as deviation of these rules:

- For each course there is a second opportunity to pass the examination. In case of written exams, the second opportunity is often scheduled in the subsequent quartile.
- For each examination other than written exams: the examiner assigned by the Examination Board

for that part of the examination, will, prior to the start of teaching the course, establish a time for examination of that course, or a part of that course. This might mean that (part of) an examination can only be taken once in an Academic year.

With respect to the order of the exams and practical exercises the programme uses the following types of prior knowledge:

Desired prior knowledge: The student is deemed to be familiar with the conceptual framework and the course matter or a comparable course

Necessary prior knowledge: The student is deemed to have passed a particular course or a comparable course. The teacher assumes that the student is familiar with the course matter of the course. The student might have trouble finishing the course successfully if he/she does not have the necessary prior knowledge.

Compulsory prior knowledge: The student must have passed a particular course or a comparable course (assessed by the Examination Board) before they are allowed to attend the course.

2.4 Studyload

The programme is a full-time programme.

2.5 Period of validity of passed examinations

The period of validity for the results of an exam that has been passed is unlimited. The validity of an exam result can only be restricted if the tested knowledge, insight or skills are proven to be out of date. A study unit that was not passed, has to be repeated completely in the next academic year. Results of parts of a study unit expire after the academic year. Exceptions are listed in the assessment plan of the course.

2.6 Order Requirements

Some courses have an examination consisting of several parts. The examination of these courses can only be passed when all separate parts are passed.

Normally, the final examination of courses, or parts thereof cannot be taken before the completion of the BSc-programme or any Pre-Master programme (in Dutch referred to as the 'Harde Knip')

Due to COVID-19 measures the Ministry of Education, Culture and Welfare (OCW) has converted the BSc/MSc separation into a BSc/MSc separation with temporary softer requirements. This temporary, softer BSc/MSc separation regulation applies legally to the academic year 2020-2021.

The University has two measures in place to limit obstacles in the BSc/MSc separation:

1. A considerable number of programmes have a second intake as of 1 February.
2. We apply temporarily a softer BSc/MSc separation, read more about it per category below.

The guiding principles for BSc/MSc separation are:

- This measure only applies to funded Master's programmes, therefore students who wish to apply for a non-funded Master's programme must hold a Bachelor's degree.
- This measure does not apply to non-EEA students. These students do have to be in possession of a Bachelor's degree.

The guiding principles specific for Bachelor's students (Dutch or EEA) are:

- Bachelor students can be conditionally admitted to the Master's programme if a maximum of 30 EC of the Bachelor's programme is still open;
- The Bachelor's programme must be completed before 1 September 2021;
- The Bachelor's thesis must be completed before the Master's thesis is started;
- Master's programmes can set extra requirements for admission (not being a different EC requirement than the first one mentioned under this heading) or admission to certain courses (e.g. certain pre-qualification requirements).

The guiding principles specific for Pre-master's students are:

- Pre-master students can be conditionally admitted to the Master's programme if a maximum of 6 EC of the Pre-master programme is still open;
- The Pre-master programme must be completed before 1 March 2021.
- The Pre-master programme must be completed before starting with the Master-thesis.
- Master's programmes may have additional admission requirements (not being a different EC requirement than the first one mentioned under this heading) or admission to certain courses (e.g. certain pre-qualification requirements)

2.7. Requirements for the elective space of the programme and choices to be made

In consultation with a teacher, students are allowed to select and specify a Capita Selecta as free elective. The composition, size and assessment type is determined separately for each individual case. If a student replaces more than 15 EC by a course or courses offered outside the programme, he or she needs to ask for approval by the Examination Board. His/her programme is then a 'free programme'.

3. Transition Regulations

For students that started between 2010 and 2017, the programmes described in the SC-CEM/CME from 2010 through SC-CEM/CME 2017 apply, including any applicable transition regulations. The most recent transition regulations are to be found in appendix 2 of the EER CEM/CME 2019-2020 which can be found on the CEM and CME [website](#).

In the event of changes to the rules for the composition of an examination that consists of multiple results, the calculation of the final result/ the minimum grade for successful completion of a unit/the validity of the resit for the units will be determined based on the rules of the examination of the year in which the result was obtained.

In the event of a significant change to an existing course (more than 50% of the course matter), a student who has at least once taken part in an exam for the relevant course prior to the change, is entitled to two scheduled opportunities to resit the exam in its old form in the subsequent academic year. In such cases, the student must inform the teacher at the beginning of the course to discuss how the course can be completed. In the event of such a change in the course matter, the students must be informed of this fact and this regulation.

If a student's programme, due to terminations and transition regulations, consists of a total number of ECs that does not exactly match the formal size of the programmes and programme components mentioned in this programme-specific appendix, the programme should still have the size of the formal programme.

The requirements for the composition of the programme apply for students enrolled for the Master programme as from 01-07-2015. For students that enrolled before that date the examination programme must at least meet the requirements of the education and examination regulations of 2014 or the requirements of the present EER.

4. Language

The language of instruction of both Master programmes is English. Reports must be written in the language of instruction. In special cases (assessed by the Examination Board) deviation from this rule is possible.

5. General regulations MSc-thesis

5.1. Definition and terms

- The graduation period comprises of a total of 35 EC and consists of the preparation MSc-thesis (5 EC) and the MSc-thesis (30 EC)
- The graduation lecturer is a professor, a senior lecturer (UHD) or a lecturer who is a member of the scientific staff of CE, assigned by the Examination Board, or an assigned professor of the department associated with the selected profile, who is responsible for providing guidance during the graduation period. The graduation supervisor is a staff member or research assistant of the UT who acts as the daily supervisor for the graduation assignment if this is not done by the graduation lecturer. If the graduation supervisor is a PhD student, the research proposal of the PhD student must have been approved by the Civil Engineering Disciplinary Council.
- Professors from other programmes can be assigned by the Examination Board as a graduation lecturer in Civil Engineering. The Examination Board will decide in each individual case whether they honour the request, based on, among other things, the relationship between the graduation assignment and the professor's area of expertise.

5.2. Requirements for the preparation MSc-thesis and the MSc-thesis

- The purpose of the preparation MSc-thesis is to prepare the student for the realization of the MSc-thesis. The preparation phase results in a more detailed problem definition and a proposal plan of approach for the MSc-thesis.
- The preparation phase consists of optional courses and/or independent literature study in relation to the MSc-thesis.
- The MSc-thesis must be executed within the field of one of the specialisations of the programme, either within a certain chair or at an external organization.
- The student is the only author of the MSc-thesis.
- The MSc-thesis is written in English. In consultation with the graduation lecturer or at the request of the external organization, a comprehensive summary and/or report appendices may be written in Dutch. In all cases, the main text of the report must be in English.
- The MSc-thesis report can be drawn up as a scientific article if, at the moment of assessment, the student is the only author of the (draft) article. Contributions in writing of the graduation lecturer and/or the graduation supervisor to the MSc-thesis report are not allowed.

5.3. Guidance/Assessment

- The student starts their preparation by requesting a conversation with the MSc-thesis coordinator of the department.
- The coordinator selects a graduation lecturer. The graduation lecturer puts together a graduation commission. If necessary he or she also arranges a daily graduation supervisor. When the MSc-

thesis assignment is carried out externally, the graduation lecturer also makes sure that there is a person in charge at the external location for the guidance of the graduate.

- The graduation commission is responsible for the final assessment. The external supervisor just has an advisory role.
- The graduation commission consists of:
 - The graduation lecturer
 - The graduation supervisor, or a second staff member of the UT if the graduation lecturer is the graduation supervisor
 - Possible external member for an advisory role in the assessment
- If the nature of the project warrants it, the graduation lecturer can extend the commission with eligible experts.
- At the request of the responsible chair, the Examination Board can make an exception to the requirements for the composition of the graduation commission.

5.4. When can a student start the graduation period?

The student can start with the preparation MSc-thesis course when all other parts of the Master programme except for a maximum of two courses (10 EC) have been completed. The student can only start the MSc-thesis after completion of the preparation course and with only 5 EC left open in courses. The graduation lecturer may, after consultation with the Study Adviser, deviate from these restrictions if it causes considerable loss of time for the student.

5.5 Monitoring the duration of the graduation period

- The planned end date of the MSc-thesis assignment is determined during the preparation MSc-thesis. At the beginning of the graduation period there need to be agreements on at least the nature of the assignment, the planned start date, the manner of guidance and the date on which the final report must be handed in.
- The duration of the MSc-thesis preparation corresponds with the applicable study-load of 5 EC. The duration of the MSc-thesis corresponds with the applicable study-load of 30 EC.
- All agreements (as mentioned above) are recorded in writing.
- The graduation lecturer and the graduation supervisor share the responsibility for explicit monitoring of progress during the graduation period.
- If the graduation report is handed in (preferably on the agreed date) and is approved, the graduation committee issues a statement that can be used by the student to apply for the final examination (for details: see the MSc-thesis guide for both programmes). If the report is not approved, the graduation committee indicates clearly what additions and/or changes are required. A new date is set on which the revised report must be handed in. If necessary, this procedure is repeated.

- If the graduation committee agrees that the work done by the student is insufficient, they may decide in consultation with the graduation coordinator of the department, that the student has to do another assignment. The same applies if the student fails to hand it in or hands it in far too late.

5.6 Joint graduation

In principal the MSc-thesis is done individually. However, joint graduation is possible. In that case, independent realisation of the project is defined as:

- The student studies on an individual basis: each student has his/her own (sub)project with a separate research question and responsibility.
- The graduation results in an individual report and individual presentation.
- If an (external) client is only interested in a common end product, the supply of this report is the responsibility of the students.

5.7 Procedures for the final examination

- Make sure that an application for the final examination (colloquium) is requested with the Bureau of Educational Affairs (BOZ) at least three weeks prior to the planned graduation date.
- Make sure that at least three weeks prior to the graduation date, the grades for all parts of the examination (except the MSc-thesis) are handed in to Bureau of Educational Affairs (BOZ).
- Make sure that at least one week prior to the graduation date, the graduation report is handed in to the Bureau of Educational Affairs (BOZ).
- The Bureau of Educational Affairs (BOZ) prepares the certificate and makes it available to the graduation lecturer prior to the final examination.
- Applications for the final examination in the second half of August must be submitted to the Bureau of Educational Affairs (BOZ) 5 weeks prior to the date of the final examination. All the periods mentioned exclude the holiday periods on the academic calendar.

6. Admission – additional regulations

Admission to the programme is granted if the requirements with regard to prior education for enrolment in university education are met, in accordance with the HERA, Articles 7.24, 7.25 and 7.28. The conditions pertaining to this can be found on the University of Twente's [website](#).

Persons within the meaning of the above are admitted directly to the CEM and CME programmes. All other persons can be admitted when the admission board gives a positive advice on admission after application.

The admission board will make a positive decision:

- For students in possession of a Bachelor degree from a University of Applied Sciences (HBO) who have successfully passed the Pre-Master programme. The Pre-Master programme has a size of 30 EC. The detailed realization of the regulations of the Pre-Master programme can be found on Canvas and the website, or via the Pre-Master coordinator.
- For students who come from a different Bachelor programme within the UT or within the Netherlands, and who passed their Pre-Master programme (more information with the Pre-Master coordinator and the Pre-Master policy on the website)
- For students in possession of a non-Dutch Bachelor degree at the right level and right field (to be determined by the admission board) and also meets the requirement for the command of English. The language requirements are to be found on the [website](#).

There are two intake moments per year (September and February), when students can enter CEM/CME. These moments allow students to complete their programme in two years, without suffering any delay caused by timetable issues.

Each year, the admission board, mandated by the dean, defines for each UT Bachelor degree if it gives access to the CEM and CME programmes. Admission may be subject to further requirements or restrictions. Students from the Bachelor programmes CE, ME and Applied Physics (TN) at the University of Twente are directly admissible into the programme.

6.1. Admission procedure

- Potential students must submit an admission request to the admission board. Students not yet enrolled as a student at the UT must use the preliminary enrolment forms which can be found on the UT graduate site: [Http://Master.utwente.nl](http://Master.utwente.nl). Students who are enrolled at the UT, but not in the B-CE must submit an admission request to the CEM/CME admission board. Students who are enrolled in the B-CE do not need to submit an admission request if they are in possession of the B-CE certificate at the start of their CEM/CME programme.
- The admission board assesses whether the candidate can be admitted and informs him/her of their decision in writing. If the admission board admits a student, the student is assigned a track

coordinator. The track coordinator can be consulted for information on the content and structure of the Master programme.

- An appeal against a decision made by the Examination Board or an examiner, and objections to decisions made by the Faculty Board on the basis of these regulations, must be submitted in writing to the Complaints Desk at Student Services within 6 weeks after notification of the decision.

6.2. Pre-Master programme

- Students with a degree from a University of Applied Sciences (HBO) in Civil Engineering (or comparable) can do a half year long Pre-Master programme of 30 EC. Please check the website for information.
- Students can only be admitted after completion of the full Pre-Master programme within a maximum of a year.
- Students that would like to enter the 4TU CME programme after completion of the Pre-Master programme, have to do the complete Pre-Master programme at 1 location.

6.3. Intake of students with a University Education

- Students with a university education and a deficiency of no more than 15 EC can compensate their deficiencies in the first quartile of the Academic Year. After completion, the student can be admitted into the Master programme
- Students with an university education and a deficiency of more than 15 EC are not admitted into the programme directly and have to do the Pre-Master programme.

Appendix 1. Final Qualifications CEM/CME

1a. CEM

4TU Academic criteria (Meijers' Criteria)	Description of the Learning Outcomes MSc programme CEM
1. Competent in one or more scientific disciplines	<ul style="list-style-type: none"> ▪ The graduate has expert knowledge on at least one of the subareas of Civil Engineering and Management mentioned below, is able to apply this knowledge and is able to maintain and expand his or her expertise in the field of Civil Engineering and Management: <ul style="list-style-type: none"> - Construction Management and Engineering; - Transport Engineering and Management; - Water Engineering and Management. <p style="margin-left: 40px;">This includes necessary knowledge of related fields, such as Mathematics, Physics, Business Administration and Public Administration.</p> ▪ The graduate is able to combine appropriate theories from Business and/or Public Administration with technical knowledge and apply this in an integral way within civil engineering systems, projects or processes in one of the subareas above.
2. Competent in doing research	<ul style="list-style-type: none"> ▪ The graduate is able to identify gaps in scientific knowledge within a subfield of Civil Engineering and Management. ▪ The graduate is able to formulate research problems and is able to produce and carry out a research plan by applying an appropriate research methodology, analysing and discussing the results and drawing conclusions from the results. ▪ The graduate is able to contribute to acquiring scientific knowledge. ▪ The graduate understands the potential benefits of research and is able to understand and incorporate the results of research into his or her own work. ▪ The graduate is able to assess research within a subfield of Civil Engineering and Management on its scientific value.
3. Competent in designing	<ul style="list-style-type: none"> ▪ The graduate is able to: <ol style="list-style-type: none"> i. Contribute to a functional design of complex constructions; or ii. Design management processes in the field of Civil Engineering; or iii. Make a functional design of measures to intervene in Civil Engineering Systems. <p style="margin-left: 40px;">This means that:</p> ▪ The graduate has creativity and synthetic skills with respect to design projects. ▪ The graduate is application-oriented towards civil engineering practice when designing. ▪ The graduate is able to find a balance between possible solutions of complex requirements, technical possibilities and genuine interests of the parties involved.
4. A scientific approach	<ul style="list-style-type: none"> ▪ The graduate has the habit of reflecting upon his or her own work and continuously uses relevant information to improve his or her capabilities. ▪ The graduate has the attitude to endorse his or her personal development and enhancing his or her expertise. ▪ The graduate is able to judge the value of information for decision making, makes effective use of this information for decisions and is able to evaluate these decisions. ▪ The graduate is able to judge if available tools and techniques are satisfactory for the problem at hand, is able to apply satisfactory tools and techniques and is able to invent his or her own tools, theories and techniques if these are not available. ▪ The graduate is able to develop a model to describe/schematize reality, i.e. the graduate is able to describe qualitatively civil engineering processes and objects in terms of basic principles and, where necessary and possible, is able to quantify this description in terms of mathematical relationships.

	<ul style="list-style-type: none"> ▪ The graduate knows that models only approximate reality and is able to use them appropriately whenever this is beneficial. ▪ The graduate's scientific attitude is not restricted to the boundaries of Civil Engineering and Management, and he or she is able to cross these whenever necessary.
5. Basic intellectual skills	<ul style="list-style-type: none"> ▪ The graduate is able to work independently. ▪ The graduate is able to work systematically and methodically. ▪ The graduate is able to analyse complex problems and complex information thoroughly and systematically, is aware of analogies between problems and is able to determine connections between different aspects of the problem or information. ▪ The graduate is competent in numeracy and is aware of orders of magnitudes. ▪ The graduate is able to reflect on the complete scope of one of the subfields of Civil Engineering and Management and is able to generate novel ideas in this subfield.
6. Competent in cooperating and communicating	<ul style="list-style-type: none"> ▪ The graduate is able to work effectively in the context of a multidisciplinary environment, is able to manage complex assignments and can act in different roles depending on the situation, i.e. can take responsibility as a member and/or as a project leader. ▪ The graduate knows the importance of oral and written communication, and can make effective use of them, which means that: <ul style="list-style-type: none"> i. The graduate is capable of collecting and selecting relevant scientific information. ii. The graduate is skilled in properly documenting and presenting results of scientific and design work, including the underlying knowledge, choices and considerations, to colleagues and to a broader public. iii. The graduate is competent in scientific reasoning. iv. The graduate adheres to existing academic conventions, such as giving proper credit and referencing.
7. Takes account of the temporal and societal context	<ul style="list-style-type: none"> ▪ The graduate is able to position the (scientific research of) at least one of the subfields in the scientific and societal context. ▪ The graduate is able to form an opinion or judgement and contribute to discussions about complex matters related to Civil Engineering and Management. ▪ The graduate knows that compromises are unavoidable and is able to deal with them effectively. ▪ The graduate is aware of the disadvantages for society of certain decisions and knows how to communicate them to the relevant parties (stakeholders).

1b. CME

4TU Academic Criteria	Description of the Learning Outcomes MSc Programme CME
1. Competent in one or more scientific disciplines	<ul style="list-style-type: none"> ▪ The graduate has knowledge on the following sub-areas of Construction Management and Engineering, is an expert in at least one of them and is able to maintain and expand his expertise in the field of Construction Management and Engineering (for instance, by consulting relevant literature but also look for connections). <ul style="list-style-type: none"> ○ Project and Process management in the field of Construction Engineering (i.e. complex constructions, large-scale infrastructure, urban developments) ○ Legal and Governance aspects in the field of Construction Engineering ○ Markets and organisations in the field of Construction Engineering ○ Innovations and Integral Design in Construction Engineering ▪ The graduate is able to combine management theory and technical knowledge. This ability covers the knowledge and application of technical process management and innovation regarding construction and engineering processes in the subareas above.
2. Competent in doing research	<ul style="list-style-type: none"> ▪ The graduate has the competence to acquire new scientific knowledge through research or systematic reflection. ▪ He understands the potential benefits of research and is able to understand and incorporate the results of research into his own work.

<p>3. Competent in designing</p>	<ul style="list-style-type: none"> ▪ The graduate is able to <ul style="list-style-type: none"> ○ Contribute to a functional design of complex constructions or ○ Design management processes in the field of Construction Engineering This means that: ▪ The graduate has creativity and synthetic skills with respect to design projects ▪ The graduate is application-oriented towards the construction industry when designing constructions or management processes ▪ The graduate is able to translate technological concepts and developments into appropriate process innovations for construction. ▪ The graduate is able to find a balance between possible solutions of complex requirements, technical possibilities, genuine interests of the parties involved and justified value creation on scientific and operational levels
<p>4. A scientific approach</p>	<ul style="list-style-type: none"> ▪ The graduate has the habit of reflecting upon his own work and continuously uses relevant information to improve his capabilities. ▪ The graduate has the attitude to endorse his personal development and enhancing his expertise. ▪ The graduate knows that models only approximate reality and is able to develop and use them adequately whenever this is beneficial ▪ The graduate makes decisions based on calculated risks, costs, time, quality, stakeholders' participation, value creation, legislation and is able to evaluate these decisions ▪ The graduate's scientific attitude is not restricted to the boundaries of Construction Management and Engineering, and he is able to cross these where and whenever necessary
<p>5. Basic intellectual skills</p>	<ul style="list-style-type: none"> ▪ The graduate is able to work independently ▪ The graduate is able to work systematically and methodically ▪ The graduate is able to reflect on the complete scope of Construction Management and Engineering issues, to critically analyse and to generate novel ideas. ▪ The graduate is able to invent his own tools, theories and techniques if these are not available
<p>6. Competent in cooperating and communicating.</p>	<ul style="list-style-type: none"> ▪ The graduate is able to work effectively in the context of a multidisciplinary environment, is able to manage complex assignments and can act in different roles depending on the situation, i.e. can take up responsibility as a member and/or as a project leader. ▪ The graduate knows the importance of oral and written communication, in particular in English, and can make effective use of these, this means that: <ul style="list-style-type: none"> ○ The graduate is skilled in properly documenting and presenting results of scientific and design work, including the underlying knowledge, choices and considerations, to colleagues and to a broader public. ○ The graduate is competent in reasoning ○ The graduate adheres to existing academic conventions, such as giving proper credit and referencing.
<p>7. Takes account of the temporal and societal context</p>	<ul style="list-style-type: none"> ▪ The graduate is able to form an opinion or judgement and contribute to discussions about complex matters related to Construction Management and Engineering ▪ The graduate knows that compromises are unavoidable and is able to effectively deal with these. ▪ The graduate is aware of the disadvantages for society of certain decisions and can communicate these to the relevant parties (stakeholders). He can take the purpose of the design and its context into consideration.

Examination Board

Rules and regulations Civil Engineering and Management and Construction Management and Engineering

Academic year: 2020-2021

Rules of conduct and rules applicable to the exams and examinations of the Examination Board for Civil Engineering, as recommended by the deans of the faculties.

These Rules and Regulations are applicable to:

- The Bachelor program Civil Engineering
- The Master Civil Engineering and Management
- The Master Construction Management and Engineering

This document is available at the [website of the examination board CE/CEM/CME](#) and at the [programmes' website](#).